Upper Santa Ana River Watershed Integrated Regional Water Management Plan









January 2015

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Acronyms

Acronym	Definition
ACEC	Area of Critical Environmental Concern
AF	acre-foot
AFY	acre-feet per year
AHHG	area of historic high groundwater
Association	Upper Santa Ana Water Resources Association
Basin Plan	Water Quality Control Plan for the Santa Ana River Basin
BBARWA	Big Bear Area Regional Wastewater Agency
BDCP	Bay-Delta Conservation Plan
Big Bear Municipal	Big Bear Municipal Water District
BLM	U.S. Bureau of Land Management
BMO	Basin Management Objective
BMP	best management practice
BTAC	Basin Technical Advisory Committee
CAP	Customer Assistance Program
CASGEM	California Statewide Groundwater Elevation Monitoring
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CIS	change in storage
Cl	Chloride
COD	Chemical Oxygen Demand
CRA	Colorado River Aqueduct
CWP	California Water Plan Update 2009
DACs	Disadvantaged Communities
DBCP	debromochloropropane
DEIR	Application Draft Environmental Impact Report
Delta	Sacramento-San Joaquin Delta
DMM	Demand Management Measure
DWR	California Department of Water Resources
EC	Electrical conductivity
Eastern	Eastern Municipal Water District
EPA	Environmental Protection Agency
ESA	US Endangered Species Act
ESRI	Environmental Systems Research Institute
Exchange Plan	Santa Ana River-Mill Creek Cooperative Water Project Agreement
Fontana Union	Fontana Union Water Company
GIS	Geographic Information System
HCP	Upper Santa Ana River Habitat Conservation Plan
HTROD	Hazardous Tree Removal Operations Division
IERCD	The Inland Empire Resource Conservation District
IEUA	Inland Empire Utilities Agency

Acronym	Definition
IRWM	Integrated Regional Water Management
IRWM Plan	Integrated Regional Water Management Plan
IWP	Integrated Watershed Plan
LAFCO	Local Agency Formation Commission
LID	Low impact development
MAC	Municipal Advisory Commission
MCL	maximum contaminant level
Metropolitan	Metropolitan Water District of Southern California
Mgd	million gallons per day
mg/L	milligrams per liter
MHI	median household income
MOU	Memorandum of understanding
MPD	Master Plans of Drainage
MSHCP	Multi-Species Habitat Conservation Plan
msl	mean sea level
Na	Sodium
NEPA	National Environmental Policy Act
NO_3	Nitrate
NPDES	National Pollutant Discharge Elimination System
NWIS	National Water Information System
OCWD	Orange County Water District
OPMODEL	Operations Model
OWOW	One Water One Watershed
PAEP	Project Assessment and Evaluation Plan
PCE	perchloroethylene
PIG	BTAC Project Implementation Group
ppb	parts per billion
Reclamation	United States Bureau of Reclamation
Region	Upper Santa Ana River Watershed IRWM Region
RIX	Rapid Infiltration and Extraction
RM	river mile
RPU	City of Riverside Public Utilities
RRWQCP	Riverside Regional Water Quality Control Plant
RUWMP	Regional Urban Water Management Plan
RWMG	Regional Water Management Group
RWQCB	Regional Water Quality Control Board
SAR	Santa Ana River
SART	Santa Ana River Trail System
SARWQCB	Santa Ana Regional Water Quality Control Board
SAWPA	Santa Ana Watershed Project Authority
SBBA	San Bernardino Basin Area
SBCFCD	San Bernardino County Flood Control District
SBMWD	San Bernardino Municipal Water Department

Acronym	Definition
SBNF	San Bernardino National Forest
SBVWCD	San Bernardino Valley Water Conservation District
SBX7-7	Senate Bill X7-7 (Water Conservation Act of 2009)
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SCWC	Southern California Water Committee
SDAC	Severely Disadvantaged Communities
SGPWA	San Gorgonio Pass Water Agency
SO4	Nitrogen
SOCs	Synthetic Organic Compounds
State	State of California
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAG	Technical Advisory Group
TDS	total dissolved solids
TIN	Total Inorganic Nitrogen
TMDL	total maximum daily load
USACE	U.S. Army Corps of Engineers
USARW	Upper Santa Ana River Watershed
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UWMP	Urban Water Management Plan
Valley District	San Bernardino Valley Municipal Water District
VOCs	Volatile Organic Compounds
Western	Western Municipal Water District
WQMA	Water Quality Management Agency
WRI-CSUSB	Water Resources Institute /California State University San Bernardino
WRP	water reclamation plant
WSPA	Wooly-Star Preserve Area
WUE	Water Use Efficiency
West Valley	West Valley Water District
WWTP	Waste Water Treatment Plant
YVWD	Yucaipa Valley Water District

Executive Summary

Integrated Regional Water Management in the Upper Santa Ana River Watershed Region

The Upper Santa Ana River Watershed (USARW) has a long-standing history of collaboration by water resource management agencies to manage the watershed's unique water supply, water quality, flood, and habitat challenges. In 2005, this collaboration allowed the agencies to successfully form the USARW Integrated Regional Water Management Region (IRWM Region or Region) and develop an integrated plan for managing water resources in the Region. The USARW Integrated Regional Water Management Plan (IRWM Plan) is the result of this effort. The 2014 IRWM Plan serves as an update to the IRWM Plan developed in 2007, and incorporates new information describing the Region, updates goals and objectives, re-evaluates strategies, and develops a process for future implementation of the IRWM Plan.

Stemming from this effort, the agencies in the Region created the Basin Technical Advisory Committee (BTAC) to facilitate implementation of the IRWM Plan. Development of the BTAC has strengthened dialogue and cooperation between agencies and has improved regional planning. The BTAC, which serves as the Regional Water Management Group, is open to all agencies and stakeholders who desire to participate in the IRWM Region's planning and management efforts.

Agencies Developing the IRWM Plan Update

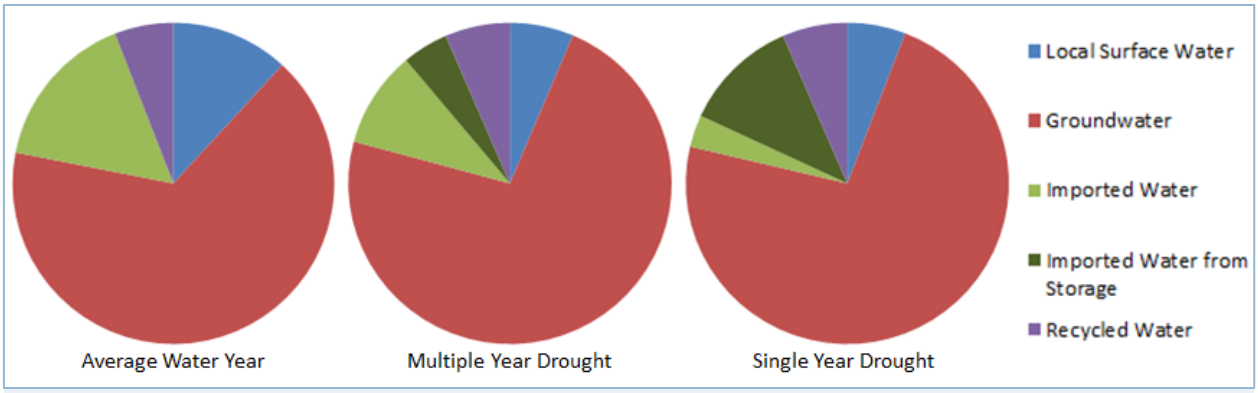
1. Big Bear Lake Department of Water and Power
2. Big Bear City Community Services District
3. City of Loma Linda
4. City of Redlands Municipal Utilities and Engineering Department
5. City of Rialto
6. City of Riverside Public Utilities Department
7. City of Yucaipa
8. East Valley Water District
9. Fontana Union Water Company
10. San Bernardino County Flood Control District
11. San Bernardino Municipal Water Department
12. San Bernardino Valley Municipal Water District
13. San Bernardino Valley Water Conservation District
14. San Gorgonio Pass Water Agency
15. West Valley Water District
16. Yucaipa Valley Water District

Water Resources Management Challenges

The USARW IRWM Region, which begins just upstream of Prado Dam and extends into the San Bernardino Mountains, covers over 850 square miles of urban area, agricultural land, and open space that provide a multitude of water resource-related benefits and challenges.

Water supply management in the Region dates back to the 1800s when predecessors of today's water agencies were constructing ditches to deliver water. Management now consists of dozens of water supply agencies that deliver water to this rapidly growing Region. These water suppliers also face institutional complexities (particularly those related to groundwater management) and must account for the hydrological variation that occurs in both local and imported water supplies. The IRWM Region's water suppliers plan to meet demand through a combination of imported water, groundwater, local surface water, recycled water, and water use efficiency programs. By 2035, demand in the Region is projected to increase by over 100,000 AFY, and will require the continued development of a diverse water supply portfolio to overcome various challenges and uncertainties.

As shown below, the IRWM Region is highly dependent on its local water supplies, particularly precipitation stored as groundwater, which provides approximately 67% of supplies during average years and over 70% of supplies during drought years. The Region plans to store as much water as possible in groundwater basins during wet years and then to pump this water from groundwater storage during drought years (i.e. conjunctive use).



To meet demand during drought years, the IRWM Region relies on local supplies and imported water from storage (based on 2015 supply projections).

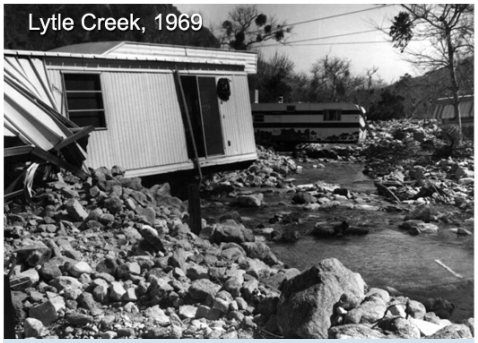
Water suppliers must also manage for other uncertainties such as variability in supplies, particularly imported water, caused by drought and other reliability concerns such as catastrophic events (e.g. earthquakes), environmental protection goals and mandates in the Sacramento-San Joaquin Bay Delta (Delta), climate change, water quality, and imported water costs.

The IRWM Region's groundwater managers must balance conjunctive use with other constraints such as the risk of liquefaction. Careful monitoring and ongoing coordination among members of the BTAC is critical to achieve this balance.

Meeting the Region's water demand also requires management of local water quality. While groundwater quality is generally good in the Region, past industrial and military activities have required groundwater remediation of volatile organic compound (VOC) contamination plumes. Water quality treatment is also necessary in some areas to treat for other contaminants caused by agricultural activities and urban pollutants (e.g. nitrate, perchlorate, pesticides and inorganic materials). In addition, as water recycling increases in the future, the Region will need to monitor salt accumulation consistent with the Santa Ana Regional Water Quality Control Board's Basin Plan goals.

Another issue of concern in the Region is stormwater and flood management. Stormwater management has been an ongoing challenge in the USARW Region. In the past, flood events have caused loss of life and damage to property.





The San Bernardino County Flood Control District was created in response to historical flooding that caused loss of life and damage to property.



The San Bernardino National Forest is home to extraordinary natural resources.

Flood control facilities, such as detention basins, have provided much needed control of these flows. The IRWM Region's groundwater managers are working with flood control agencies to optimize the use of these flood control facilities to increase the recharge of stormwater into the groundwater basin. They hope to strike a balance between flood control and recharge that will ensure protection from flooding, while providing additional supplies to meet growing future demands and to supplement these supplies during drought years.

The USARW Region contains extraordinary natural resources, including the San Bernardino National Forest, which serves as the headwaters for the Santa Ana River. Downstream, the Santa Ana River and its tributaries provide habitat to riparian and aquatic species, and provide connectivity to upland habitats. The scrub, woodland, and riparian habitats in the Region support innumerable species, including species of concern such as the San Bernardino kangaroo rat, Santa Ana River wooly star, and Slender-Horned spine flower. The importance of the Region's habitats is underscored by the multiple environmental and ecological management plans currently in place, including the Western Riverside County Multi-Species Habitat Conservation Plan, Upper Santa Ana Wash Land Management and Habitat Conservation Plan, and Upper Santa Ana River Habitat Conservation Plan. In addition to serving as habitat, these areas provide valuable open space and recreational areas for the residents of and visitors to the Region. Though large areas of habitat and open space have been conserved, the IRWM Region recognizes the importance of further restoring or improving habitat that has been lost to urbanization, and preserving habitat that is in danger due to invasive species. Maintaining and improving the Region's habitats also serves to support surface water quality. In particular, ongoing forest thinning projects in the San Bernardino National Forest serve to maintain forest habitat, as well as reduce the danger of wildfires and their associated water quality impacts downstream from sedimentation.

The BTAC evaluated the vulnerability of the IRWM Region's resources to climate change impacts. Within the Region, climate change may exaggerate existing uncertainties by causing decreases in precipitation, less frequent but more intense storms, and higher temperatures. The BTAC identified several vulnerabilities associated with these impacts, including additional imported water supply uncertainty, additional potential challenges to capturing stormwater during more intense storms, water quality impacts due to more frequent and intense wildfires, degraded water quality and aquatic habitat impacts due to higher temperatures, flood system impacts due to more intense storms, and increased irrigation demand due to higher temperatures.

These issues and challenges to water supply, water quality, flood management, and habitat and open space must be carefully managed to maintain the IRWM Region's water resources for future generations.

Goals, Objectives and Strategies

The BTAC developed a series of goals to help the USARW IRWM Region overcome the variety of issues and challenges. In addition, BTAC established measureable objectives, or targets, they hope to achieve over the next 5-year planning cycle. These goals and objectives are listed below.

USARW IRWM Region Water Management Goals and Objectives

Goal #1: Improve Water Supply Reliability	1a: Reduce demand 20% by 2020
	1b: Increase utilization of local supplies by 23,000 AFY • Stormwater: 20,000 AFY • Recycled Water: 3,000 AFY
	1c: Increase storage by 10,000 AF
	1d: Prepare for disasters by implementing 2 new interties between water agencies
	1e: Monitor and adaptively manage climate change impacts by implementing 3 projects that reduce energy demands
	1f: Ensure equivalent water supply services for DACs
Goal #2: Balance Flood Management and Increase Stormwater Recharge	2a: Utilize 500 acres of flood control retention/detention basins that are not currently used for recharge
	2b: Reduce FEMA reported flood area
	2c: Ensure equivalent implementation of flood projects in DAC areas and implement at least 1 flood control project in a DAC area
Goal #3: Improve Water Quality	3a: Ensure no violations of drinking water quality standards
	3b: Improve surface and groundwater quality by treating 3,000 AFY of water supply
	3c: Manage total dissolved solids and nitrogen in groundwater
	3d: Ensure equivalent water quality services for DACs
Goal #4: Improve Habitat and Open Space	4a: Improve habitat and open space by 1,200 acres
	4b: Identify "multi-use" opportunities to increase recreation and public access and identify at least 1 multi-use project

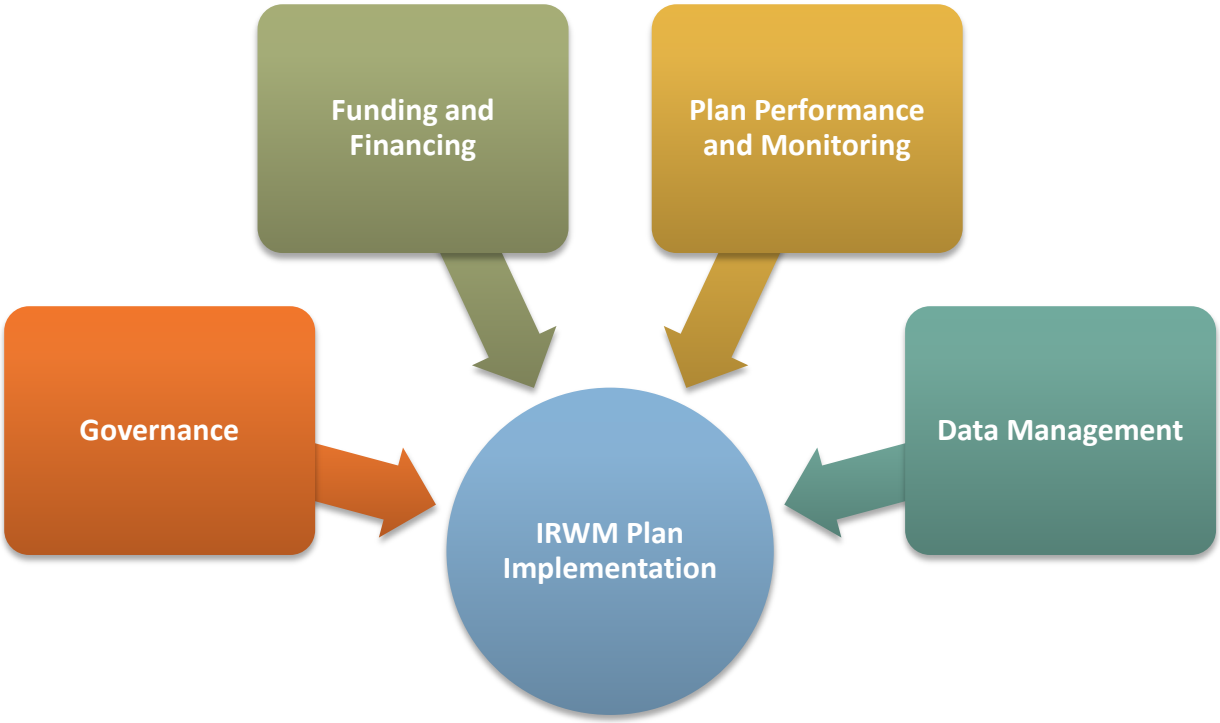
Keeping the Region's unique issues and challenges in mind, the BTAC developed a number of water management strategies to help them reach their goals and objectives. These strategies, listed below, intentionally align with the resource management strategies (RMS) listed in the *California Water Plan* and reflect the unique aspects of the Region's water resources.

Water Resource Management Strategies

1. Continue Basin Management in the San Bernardino Basin Area
2. Continue Forest Management
3. Continue Hazardous Fuels Reduction in the Forest
4. Coordinate Land Use Planning and Management with Water Resources Management
5. Develop Basin Management in Yucaipa Basin
6. Develop Desalination
7. Develop Watershed Management Projects and Programs
8. Improve Drinking Water Treatment and Distribution
9. Identify Corridors for Species
10. Identify Projects that Increase Recharge
11. Identify Projects that Increase Surface Water and Groundwater Storage Inside and Outside the Region
12. Identify Water Transfer Opportunities
13. Implement Agricultural Lands Stewardship
14. Implement Agricultural Water Use Efficiency
15. Implement Pollution Prevention Measures
16. Implement System Reoperation
17. Implement Urban Water Use Efficiency
18. Improve Supply Conveyance – Delta
19. Improve Supply Conveyance – Regional/ Local
20. Incorporate Environmental Opportunities and Constraints into the Design Process for Facilities
21. Incorporate Opportunities to Improve Habitat and Increase Recreation and Public Access During the Facilities Design Process
22. Increase Recycled Water Use
23. Increase Stormwater Capture
24. Maintain and Improve Water-Dependent Recreation
25. Manage High Groundwater Potential
26. Manage Urban Runoff
27. Match Water Quality to Use
28. Monitor Consumer Confidence Reports
29. Operate Existing Facilities to Increase Recharge
30. Optimize Wet Year Storage and Dry Year Pumping (Conjunctive Management & Groundwater)
31. Participate in the SAWPA Basin Management Task Force
32. Protect Recharge Areas
33. Provide Economic Incentives
34. Remediate Groundwater Contamination Plumes
35. Restore Ecosystems
36. Review DACs Every 5 Years
37. Support the Bay Delta Conservation Plan

Implementation of the IRWM Plan

To date, the agencies located within the USARW IRWM Region have successfully implemented numerous water management strategies and projects, and continuously monitor progress toward achieving their goals and objectives. The responsibility for implementation of the IRWM Plan will continue to be guided by the BTAC agencies, all of whom participated in the planning process and prepared the 2007 IRWM Plan and this 2014 IRWM Plan. The success of the IRWM Plan's implementation will be ensured through ongoing plan performance and monitoring, data management, and the Region's funding and financing plan. These ongoing activities in combination with the integrated goals, objectives, and strategies developed through this IRWM Plan will ensure that the Region's water resources are sustainably managed into the future.



1 Regional Planning, Governance, Outreach and Coordination

1.1 Introduction

In 2005, the members of the Upper Santa Ana Water Resources Association (Association), composed of agencies in the Upper Santa Ana River (SAR) watershed that share a common concern for the area's water resources, met and agreed to develop an Integrated Regional Water Management Plan (IRWM Plan) to address water management issues for the communities of the Upper SAR watershed. The IRWM Plan was developed by several local agencies that formed a Technical Advisory Group (TAG), later becoming known as the Basin Technical Advisory Committee (BTAC).

The Upper Santa Ana River Watershed IRWM Region (IRWM Region or Region) covers 852 square miles of the SAR watershed (approximately 32% of the watershed), and is primarily located in San Bernardino and Riverside Counties, as shown in Figure 1-1. The Region is comprised of a number of cities and agencies, and has several unique factors that support the development of a plan to guide future water resources planning in the area, including: rapid population growth; hydrologic characteristics that separate it from the lower portion of the SAR watershed; and significant institutional issues, particularly those governing the IRWM Region's groundwater basins which are geologically separated from the lower watershed and are governed by their own judgments. This IRWM Plan was developed through ongoing efforts and partnerships with the cities and agencies in the Region to develop plans, projects, and programs at regional levels.



The Santa Ana River System originates high in the San Bernardino Mountains. (Photo by Ryan Gilmore).

The Region's first IRWM Plan, which was completed in 2007 (2007 IRWM Plan), identified, defined, and established strategies to capitalize on all water management opportunities that were present at that time or would potentially become available in the USARW Region in the future. With careful and thoughtful integrated planning, the participation of water managers and stakeholders, and the development of robust water management strategies and implementation tools, the Region's water entities have improved and continue to improve their water supply reliability and self-reliance for future water supplies. Continued implementation of the IRWM Plan will help the fast-growing IRWM Region continue to increase self-reliance, while providing reliable, high quality water for economic growth and enhancing the well-being of local residents.

1.2 Purpose and Need for the IRWM Plan

The primary purpose of the IRWM Plan is to encourage integrated planning among the agencies in the IRWM Region. In particular, the need to improve water supply reliability by implementing local supply projects is recognized as a priority given that imported water is increasingly viewed as a less reliable supply, and considering that the water purveyors within the Region rely on imported water to meet between 13% and 16% of their demands. As the IRWM Region continues to implement the strategies in the IRWM Plan, it will be better positioned during drought periods.

In addition, the IRWM Region is dedicated to protecting its groundwater basins from water quality degradation and threat of liquefaction, where applicable, as well as maintaining its natural and recreational water resources.

1.3 Regional Governance and Stakeholder Involvement

The agencies in the IRWM Region and the larger SAR watershed have a long history of working together to solve water resources related issues. These agencies recognize IRWM planning as another opportunity to work together to manage water resources on a regional level. The organizational structure of the Region's governance reflects this long history of openly working together. The open nature of the Region's governance structure allows for effective inter- and intra-regional collaboration, and a range of stakeholders that help to provide a balance in interest groups.

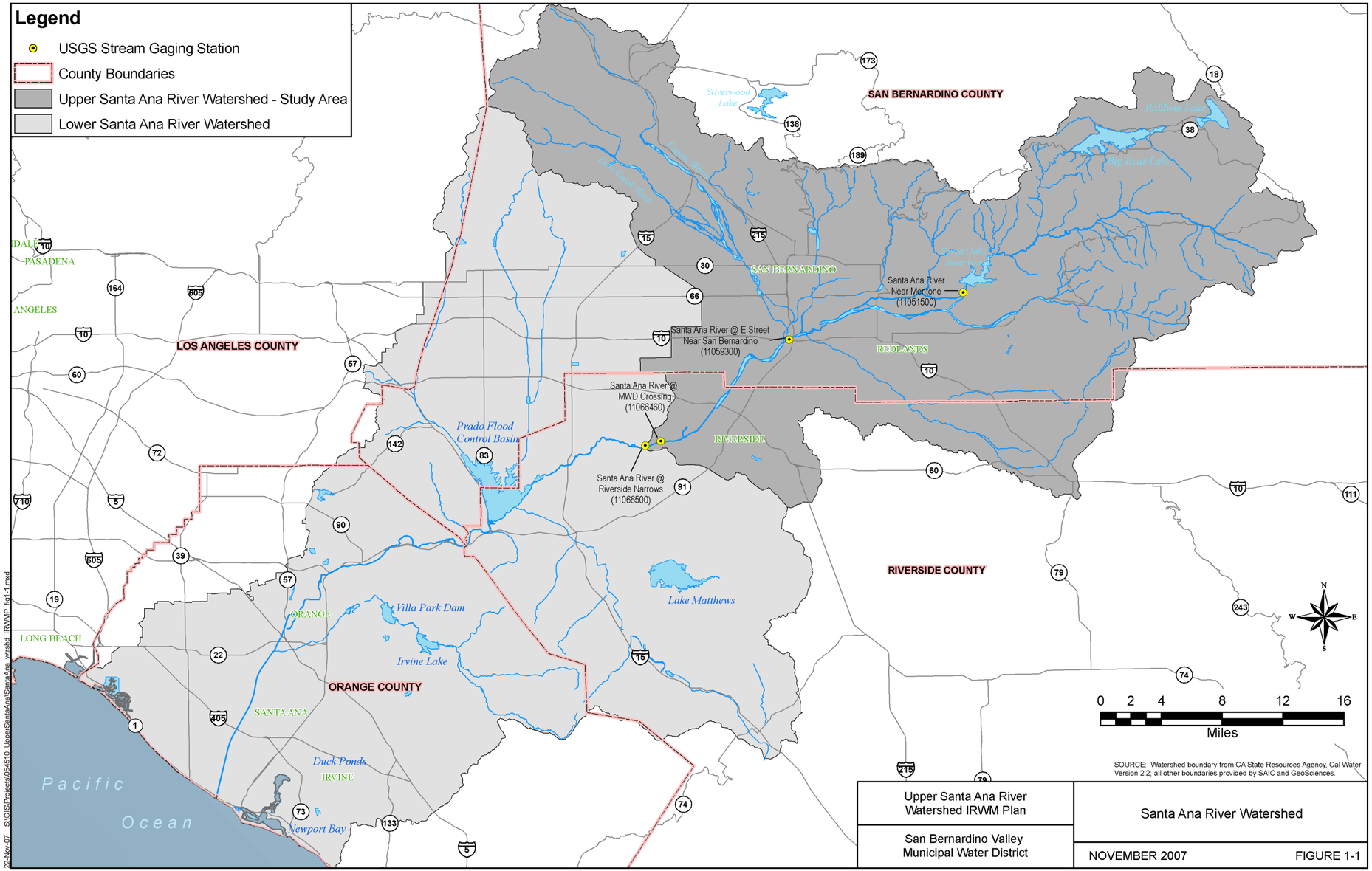
1.3.1 Regional Water Management Group

Agencies in the IRWM Region have a long history of working together to coordinate management of the Region's water resources, evidence of which can be seen in the various legal agreements provided in Appendix B related to surface water diversions, groundwater supply, water quality, and habitat preservation. The 2007 IRWM Plan was developed by several agencies that formed the TAG. The final copy of the 2007 IRWM Plan was adopted by sixteen different agencies in 2007-2008.

The TAG, which later became the BTAC, was created to facilitate implementation of the IRWM Plan, and serves as the Region's Regional Water Management Group (RWMG). Since adoption, the BTAC has been implementing the strategies in the IRWM Plan. Dialogue and cooperation have improved between agencies, improving regional planning. Participation in the BTAC is open to any agency that chooses to participate. Agencies that participate in the BTAC at the time of this 2015 IRWM Plan include:

1. Big Bear Lake Department of Water and Power
2. Big Bear City Community Services District
3. City of Loma Linda
4. City of Redlands Municipal Utilities and Engineering Department
5. City of Rialto
6. City of Riverside Public Utilities Department (Riverside Public Utilities)
7. City of Yucaipa
8. East Valley Water District
9. Fontana Union Water Company
10. San Bernardino County Flood Control District
11. San Bernardino Municipal Water Department
12. San Bernardino Valley Water Conservation District
13. San Bernardino Valley Municipal Water District (Valley District)
14. San Gorgonio Pass Water Agency
15. West Valley Water District
16. Yucaipa Valley Water District

Figure 1-1: Santa Ana River Watershed



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1.3.2 Governance Structure

The Region has a distributed governance structure consisting of the BTAC, whose members provide recommendations to their respective governing bodies who then make decisions regarding water resources planning and projects in the Region, and stakeholders who are encouraged to take part in IRWM Plan development and implementation. The IRWM Plan document serves as a MOU for those agencies who adopt the Plan, as by adopting they have agreed to implement and use the Plan as a governing document.

The BTAC strives for consensus when making decisions, and in those cases where consensus cannot be reached, has provided a forum for discussion and early resolution of water issues in the region. If disputes cannot be resolved at this level, they are elevated to the policy level (governing bodies). The policy level is continuously informed by BTAC agencies' staff .

1.3.3 Stakeholder Identification and Involvement

In the initial stages of the planning process for the 2007 IRWM Plan, the Region identified a list of stakeholders. In general, the stakeholders for this planning process are described by four categories: (1) members of the BTAC as listed above, (2) other regional stakeholders and water agencies located in the Upper SAR watershed region, (3) watershed-based stakeholders located in the SAR watershed that are part of the larger integrated planning for the region discussed in the SAWPA Plan, and (4) federal and State of California agencies that were encouraged to participate throughout development of the IRWM Plan. The BTAC has encouraged local agencies to be active in the development of the IRWM Plan and to participate in the planning process. Specific steps taken by the BTAC to inform and encourage stakeholders' participation are discussed below.

Other Regional Water Agencies and Stakeholders

- San Bernardino County Board of Supervisors
- Riverside County Board of Supervisors
- Beaumont-Cherry Valley Water District
- Bear Valley Mutual Water Company
- Big Bear Municipal Water District
- City of Beaumont
- City of Calimesa
- City of Colton
- City of Fontana
- City of Loma Linda
- Marygold Mutual Water Company
- Muscoy Mutual Water Company
- Regents of the University of California
- Riverside Highland Water Company
- Riverside County Flood Control and Water Conservation District
- South Mesa Water Company
- Southern California Edison
- Orange County Flood Control District
- Terrace Water Company
- Western Heights Mutual Water Company

Santa Ana Watershed-based Stakeholders

- SAWPA and its member agencies (Eastern Municipal Water District, Inland Empire Utilities Agency (IEUA), Orange County Water District (OCWD), Western Municipal Water District (Western))

State and Federal Stakeholders

- California Department of Fish and Game
- California Department of Public Health
- California Department of Toxic Substances Control
- California Department of Water Resources
- Santa Ana Regional Water Quality Control Board (SARWQCB)State Water Resources Control Board (SWRCB)
- U.S. Army Corps of Engineers (USACE)
- U.S. Forest Service

Early in the planning process of the 2007 IRWM Plan, the BTAC assembled a list of stakeholders and sent a letter to each stakeholder, informing them of the planning process and encouraging them to participate. Stakeholders were invited to participate in the BTAC's bi-monthly, in-person meetings and by conference calls. The meetings focused on discussion of regional water management issues of the Region.

BTAC meetings continue to be open to stakeholders to attend and contribute to the IRWM process. Meeting announcements and agendas are emailed out to a comprehensive mailing list that includes both BTAC members and stakeholders. Agendas are also posted on Valley District's website in advance so all agencies, other stakeholders, and interested parties can participate throughout the planning process in discussion of the issues in which they were interested. The Region recognizes that stakeholders are necessary for the successful implementation of the IRWM Plan, particularly the implementation of projects that will help the Region to meet the objectives and strategies discussed in Chapters 4 and 5.

To obtain additional information on the Region's IRWM program, stakeholders are invited to contact any member of the BTAC to find out more information and get added to the email list.

1.3.4 Disadvantaged Community Outreach

In addition to the general stakeholder outreach discussed above, the 2015 IRWM Plan process included efforts in 2013 to identify and coordinate outreach with disadvantaged communities (DACs) to identify potential water resource needs. Representatives of the BTAC performed preliminary identification, organization, and assessment (described in Appendix C), and then coordinated with other members of the BTAC to outreach to the identified DAC areas. It was determined that, since DAC areas are contiguous portions of each of the water agencies' service areas, they receive equal services to non-DAC areas. However, these agencies have also noted that DAC issues will be included as an element of future planning efforts.

1.4 IRWM Plan Update Process

This IRWM Plan Update was prepared to satisfy the requirements described in the November 2012 *IRWM Proposition 84 and 1E Program Guidelines* by the California Department of Water Resources (DWR). The 2015 IRWM Plan documents the IRWM Region's current IRWM program and processes that have been implemented since 2005 when the Region was created. The 2015 IRWM Plan also reflects the current and projected challenges, opportunities, goals, and strategies of the Region. Notices of intent to adopt the IRWM Plan were published individually by each member of the BTAC. The IRWM Plan was presented to the governing body of each agency within the BTAC for adoption.

1.4.1 Progress in Meeting the Objectives of the 2007 IRWM Plan

Since the 2007 IRWM Plan was developed, the IRWM Region has made great strides in meeting its objectives through the implementation of projects and programs. Many of these projects and programs are ongoing, but all activities work towards supporting the objectives established the IRWM Region's 2007 IRWM Plan. Progress made in the last 7 years demonstrates that the 2007 IRWM Plan is working as intended and should be continued to be updated as goals and objectives change. Specific efforts made by the Region to in support of each 2007 IRWM Plan objective are described below.

Progress in Meeting Objective 1: Improve Water Supply Reliability
On an annual basis, the BTAC develops an Annual Water Management Plan. This plan looks at water levels and groundwater storage levels, and makes recommendations for groundwater recharge and/or dewatering. The plan also establishes a groundwater recharge threshold for the year. This threshold is based upon computer modeling and represents the maximum amount of water that could be recharged in the San Bernardino Basin Area (SBBA) without causing high groundwater.
On a monthly basis, Valley District provides a report that graphically tracks groundwater depths. The reports show any trends that are beginning to develop and allow the BTAC to implement the dewatering plan should levels surpass an established threshold. The dewatering plan was recently updated to include specific wells that could be used for dewatering, and establish general priorities to support the plan.
On a monthly basis, the BTAC tracks artificial recharge in the SBBA and compares it to the annual threshold in the Annual Water Management Plan. It also tracks artificial recharge in other basins.
On a monthly basis, Valley District tracks water supply in the Region. The monthly report takes into account available water from various sources and demands for the entire SBBA.
Through the BTAC conservation subcommittee, a new website iEfficient.com, was created that allows any retail customer in the SBBA to easily find their water provider's website where they can find more information on rebates as well as many other useful tips on saving water.
Gardening workshops have been held to help educate people on how to maintain landscaping with native and drought resistant plants. Collaborating with the local Sierra Club Chapter, Big Bear City Community Services District and the City of Big Bear Lake Department of Water and Power sponsor an annual xeriscape tour of valley landscaping. Local nurseries stock xeriscape plants for sale, and staff at the Big Bear City Community Services District and the City of Big Bear Lake Department of Water and Power are available to give advice regarding landscaping ideas.
Valley District has an arrangement with the Kern Delta Water District in Bakersfield to bank water for use in times of need, such as during extended drought periods. During times of drought imported water sources tend to be in higher demand, which can increase the price of imported water. By banking water, Valley District can import banked water and relieve some pressure off of imported water deliveries while also saving money by avoiding purchases of higher-cost imported water.
Valley District developed a Cooperative Recharge Program to encourage groundwater recharge in wet years when water is available. Since 2008, almost 107,000 acre-feet has been recharged under the program. Water recharge is the first step in the conjunctive use process.

Progress in Meeting Objective 1: Improve Water Supply Reliability
Valley District and its retail agencies have implemented regional conservation programs, including: *Water Saving Garden Friendly:* This program labels outdoor water saving products (plants, irrigation, etc.) in participating retail locations. The retail locations purchase the labels and apply them. The only cost to the water agencies is distributing bill stuffers to announce plant sales and any marketing of the program. *Weather-based Irrigation Controller Program:* Valley District pays 50% of the cost to install weather-based irrigation controllers and weather stations. This program is available to large water users (1,500 ccf per year, or higher). *Water conservation education program:* Valley District pays for over 100 water conservation education programs each year. The programs are generally distributed amongst the retail water agency boundaries by population. *Valley District Pays 25% of Rebates:* Valley District pays the retail water agencies within its service area 25% of the rebate amount provided to their customers. Valley District budgeted $65,000 for fiscal years 2012-13 and 2013-14.
In 2010, Valley District, in partnership with Western Municipal Water District (Western), received permits to divert up to 200,000 acre-feet per year (AFY) of SAR stormwater that used to flow to the Pacific Ocean but is now detained by the Seven Oaks Dam. Valley District is planning to construct the first phase of facilities downstream from Seven Oaks Dam that would be used to capture and use this water.
Valley District is partnering with agencies in the area to expand stormwater recharge. Valley District has partnered with Riverside Public Utilities and Western to identify stormwater capture opportunities on tributaries of the SAR, and has partnered with Riverside Public Utilities to divert and recharge water into the Riverside North groundwater basin. These projects are estimated to increase stormwater capture by up to 41,000 AFY. In the Yucaipa Basin, Valley District is working with the water agencies on a management plan that would include recharge of local stormwater.
Each year, Valley District calculates the change in groundwater storage for the SBBA. Since the IRWM Plan was adopted, Valley District has expanded its efforts to include calculating the change in storage for the Yucaipa Basin and is currently working on the calculation for the Rialto-Colton Basin. The change in storage calculation provides a "gage" for the basins which is used by the BTAC when they are forming their annual recommendations.

Progress in Meeting Objective 2: Protect and Enhance Water Quality
Any retail water agency serving water to the public must obtain a permit to operate from the California Department of Public Health (CDPH) Division of Drinking Water and Environmental Management. Permits to operate generally require water quality samples to be taken for various constituents throughout the water system to make sure that water that is being delivered to the public meets standards set by the Environmental Protection Agency (EPA) and CDPH. All samples taken need to be reported to CDPH on a frequency specified in the permit to operate, but generally require an annual report to be submitted. This is just one way water quality is monitored throughout the Region.

Progress in Meeting Objective 2: Protect and Enhance Water Quality
Since 2009, Valley District has been required to submit a water quality report every three years (Triennial Report) to the Santa Ana Regional Water Quality Control Board (SARWQCB). The report is limited to nitrogen and total dissolved solids (TDS) and is intended to analyze whether recharging groundwater with imported water has had any adverse impact on compliance with Salinity Objectives that were established in SARWQCB's Water Quality Control Plan for the Santa Ana River Basin (Basin Plan).
West Valley Water District has completed wellhead treatment to remove perchlorate and other remediation projects in the area continue to operate, cleaning up the groundwater basin.

Progress in Meeting Objective 3: Ecosystem Restoration and Environmental Enhancement
All of the Region's water suppliers are in compliance with the requirements of CDPH, which is one way water quality is monitored throughout the basin to ensure that there are no water quality impacts to ecosystems or other components of the environment.
Valley District's Triennial Report to the SARWQCB for nitrogen and TDS analyzes any adverse impacts on compliance with Salinity Objectives that were established in the Basin Plan. Since salinity objectives take into account beneficial uses, including ecosystems and habitats, the Triennial report helps to monitor potential effects that artificial recharge may have on ecosystems and the environment.
In 2007, Valley District and Western created a special habitat conservation fund that is used to fund a restoration project to restore sensitive habitat along the SAR for the benefit of the Santa Ana Sucker and other native fish. The restoration project includes removing non-native plants trash and debris and restoring stream banks and recontouring streambeds. Both agencies have pledged to continue making payments to maintain the restoration through 2016.
In 2013, Valley District and nine other agencies began the process of developing a Habitat Conservation Plan for the upper portion of the SAR.

1.4.2 Public Participation

Management of water resources in the IRWM Region takes place within a complex legal and institutional framework. Development of the 2015 IRWM Plan, a comprehensive and coordinated regional water management plan, involved the cooperation of many parties interested in water management. Update of the IRWM Plan began in 2013 with a general update of each chapter of the 2007 IRWM Plan. The BTAC solicited public involvement in the IRWM Plan process by presenting updates at regularly scheduled BTAC meetings and at regularly scheduled Board and Council meetings of some BTAC agencies (see Appendix A for meeting materials), as well as soliciting public comments on the draft IRWM Plan via email announcements. In addition, workshops were conducted in 2014 to develop additional information needed for the IRWM Plan to meet the requirements of *IRWM Proposition 84 and 1E Program Guidelines*. The BTAC encouraged public participation in preparation of the IRWM Plan to ensure the public's comments were considered in decisions about water management in the IRWM Region.

1.4.3 Planning, Reports and Technical Analyses

A considerable amount of available information was used to develop this update of the IRWM Plan, the primary sources of which are shown in Table 1-1. Table 1-1 shows the data or study used, how

the data were analyzed, the results and information derived from the data or study, and how the information was used in the IRWM Plan.

Table 1-1: Planning, Reports and Technical Analyses Used in the IRWM Plan Update

Data or Study	Analysis Method	Results/Derived Information	Use in IRWM Plan
2010 Urban Water Management Plans	Review of current and projected drinking water supplies and demands, and facilities	Current and projected supplies and demands, quality concerns and facility descriptions	Used to update the water budget, and describe current and projected water supplies and demands, as well as describe current facilities and drinking water quality concerns
Court Judgments and Agreements	Review of current groundwater and surface water management activities	Current groundwater and surface water supply management activities	Used to describe groundwater and surface water management activities and develop strategies
Santa Ana River Watermaster Reports	Review of past and current Santa Ana River flows	Past and current Santa Ana River flows	Used to describe flows in the Santa Ana River, and demands on flows
Groundwater level data	Review of past and current groundwater levels	Groundwater level trends	Used to describe history of groundwater levels and develop strategies
U.S. Geological Survey (USGS) models and reports	Review of models and reports focused on groundwater basins	Descriptions of groundwater basins and groundwater supply	Used to describe groundwater basin areas and groundwater supply; Models used to test management strategies
Contaminant plume(s) data	Review of contaminant plumes in groundwater basins	Current quality impaired groundwater basins and specific areas of concern	Used to describe quality of groundwater basins and develop strategies for management
San Bernardino Valley Conservation District Engineering Investigations	Review of groundwater production and storage in Bunker Hill Basin	Current groundwater production and storage	Used to describe groundwater production and storage in Bunker Hill Basin
2006-2010 American Community Survey (U.S. Census Bureau)	Review of census block groups and designated places	Population, housing and income data for the 5-year period from 2006-2010	Used to estimate median household income for the Region, and locations of DACs
2010 Census (U.S. Census Bureau)	Review of census block groups and designated places	Population and housing data for the year 2010	Used to estimate current population for the Region

Data or Study	Analysis Method	Results/Derived Information	Use in IRWM Plan
2010 Integrated Report and 303(d) List (SWRCB)	Review of 303(d) listed water bodies	Listing of quality impaired waters throughout the State	Used to describe current water quality impairments
2011 Climate Change Handbook for Regional Planning	Review of climate change studies	Summary of climate change impacts, methods for assessing climate change in individual areas	Used to describe the threats to local and regional water resources from climate change in the Region; Methodologies used to assess climate change vulnerabilities in the Region
Valley District's Change in Groundwater Storage for the San Bernardino Basin Area and Yucaipa Basin Area Report	Review storage levels in the SBBA (Bunker Hill and Lytle combined	Groundwater storage levels	Used to assess storage levels in the SBBA and Yucaipa Basin Area

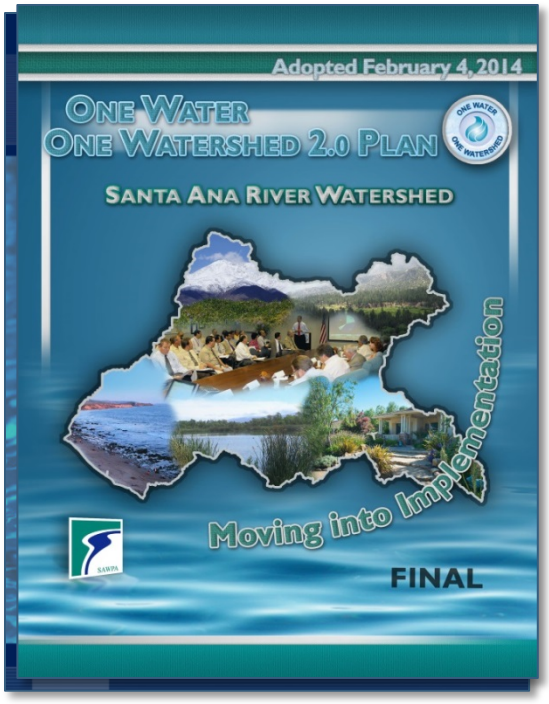
1.5 Regional Coordination

The IRWM Region regularly coordinates with neighboring and overlapping entities at the local, regional, and state level. The following is a discussion of how the Region has coordinated with neighboring IRWM regions, water resources planning, and land use planning in the development and on-going implementation of its IRWM Plan.

1.5.1 Coordination with Neighboring IRWM Regions and IRWM Planning

Santa Ana Watershed Project Authority and One Water One Watershed Plan

SAWPA is a regional agency that has a major role in water resources planning in the SAR watershed. SAWPA was formed in 1968 as a planning agency and was transformed in 1972 through a change in its mission to plan and build facilities that would protect the water quality of the SAR watershed. SAWPA is a Joint Powers Authority, classified as a Special District (government agency) in which it carries out functions useful to its member agencies: Inland Empire Utilities Agency, Eastern Municipal Water District, Orange County Water District, Valley District, and Western. Two of SAWPA's member agencies, Western and Valley District, are part of this IRWM Plan. SAWPA's vision is to have a sustainable SAR watershed that supports economic and environmental vitality as well as an enhanced quality of life. SAWPA's regional leadership is a model of collaboration and cooperation utilizing integrated solutions. To that extent, SAWPA has developed an IRWM Plan for the entire SAR watershed titled the One Water One Watershed (OWOW) Plan.



Water users in the SAR watershed have worked together for decades to develop an integrated regional approach to water management for the entire watershed. In 2002, SAWPA developed a phased planning process called the Santa Ana Integrated Watershed Plan (IWP). In 2005, the IWP was updated as an IRWM Plan to cover the entire SAR watershed. In April 2007, SAWPA launched the OWOW Plan for the Watershed. This broad planning document is the framework for overall water management in the watershed and is largely based upon the planning efforts of its member agencies. The OWOW Plan is a "macro-level" plan that is consistent with DWR's *California Water Plan* (Bulletin 160) and State Water Resources Control Board's (SWRCB) Strategic Plan, Watershed Management Initiative, and the basin planning process.

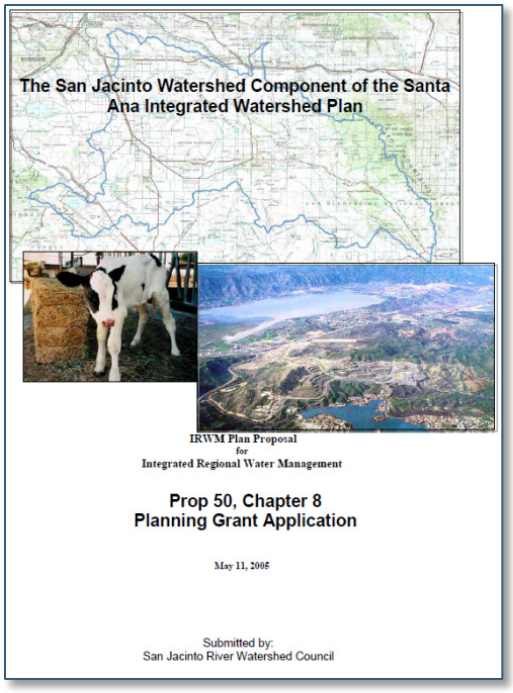
This 2015 IRWM Plan for the USARW Region is a complementary planning process to the SAWPA process and has been incorporated into the OWOW Plan. By focusing on a finer scale, the USARW IRWM Plan reveals that the Upper SAR watershed has several unique water management challenges and issues. The purpose of the USARW planning process is to focus on local issues specific to the upper watershed and to assess water management opportunities in greater detail. This collaborative process addresses some of the long-term water management strategies of the Upper SAR watershed and will greatly contribute to protecting and enhancing reasonable and beneficial uses of the watershed's water resources. This planning process is a part of the overall SAR water management planning process and is in agreement with past and current SAWPA regional planning initiatives. In addition, several agencies in the IRWM Region also take part in SAWPA planning efforts. For example, Valley District took the lead in writing one of the chapters of the OWOW Plan.

Western Municipal Water District IRWM Plan

Western's service area consists of a 510-square-mile area located primarily in western Riverside County with a population of over 850,000 people. Western relies on SWP and Colorado River water to augment its local water supplies. During drought years, these imported water sources will suffer from increased demands and increasingly poor water quality. Colorado River water may have salinity in excess of 800 milligrams per liter (mg/L) in dry years. Such water quality will not meet the water quality objectives of the SARWQCB and will thus make Colorado River water unsuitable for use without desalination treatment.

In 2008, Western prepared an IRWM Plan that addresses their service area only. Western's IRWM Plan is focused on putting water from all sources to maximum beneficial use. This strategy includes storage of imported water, when it is available, to augment dry year supplies.

It is the mission of Western to provide water supply, wastewater disposal, and water resource management to the public in a safe, reliable, environmentally sensitive, and financially responsible manner. Given the significant loss of groundwater wells in the Region due to water quality issues and the uncertainty of supplemental imported water supplies, implementing an IRWM Plan is imperative to Western. The objectives of the IRWM Plan are built on the identification of the water



management issues and solutions and refinement of the plan through a consensus of appropriate stakeholders. A number of water management strategies have been considered to meet the objectives defined for Western's IRWM Plan.

Western has already started identifying and implementing regional projects that will create cleaner, more reliable water supplies and optimize the use of imported water to reduce reliance on imported water during drought periods. Western and Valley District share a long history of working cooperatively to address the imbalance between available water supplies and the demands of a growing population in the Inland Empire area of Southern California (the urbanized portions of San Bernardino and Riverside Counties).

Valley District and Western sit on the Watermaster Committee for the Orange County Judgment (Orange County Water District v. City of Chino, et al., Case No. 117 628), and together make up the two-member Watermaster Committee for the Western Judgment (Western Municipal Water District of Riverside County v. East San Bernardino County Water District, Case No. 78426). Western is a stakeholder in the Upper SAR region because of its share in managing the water resources of the SBBA, and takes part in the Region's activities as a stakeholder. In addition, Western has served as a connection between the Region and other IRWM regions that Western overlaps, such as the Upper Santa Margarita Watershed IRWM Region. This connection has allowed for coordination on projects and grant applications.

San Jacinto Watershed Component of the Santa Ana Integrated Watershed Plan

The San Jacinto Component Plan, prepared in 2005 by the San Jacinto Watershed Council, focuses on specific water management strategies that address the unique and complex needs of the 732-square-mile San Jacinto Creek watershed. The plan is a component of the Santa Ana Integrated Watershed Plan (IWP) which was later updated to become the OWOW Plan. The San Jacinto Component Plan is a complementary planning effort that will build upon the work already completed by stakeholders participating in the SAWPA planning process by considering unique water quality and habitat needs in the San Jacinto watershed. These needs include National Pollutant Discharge Elimination System (NPDES) projects, additional reclaimed water management, and potential impacts of total maximum daily load (TMDL) requirements that specifically affect the residents (human, avian, animal, fish, plant, or insect) of the San Jacinto Creek watershed. This planning effort addresses issues that are specific to the San Jacinto Creek watershed and integrates the strategies with the Santa Ana IWP. The size of the SAR watershed and associated array of water resources naturally lend themselves to a large regional solution that integrates a number of watershed issues.

Riverside County has been identified as one of the fastest growing counties in the United States. This growth caused Riverside County to revise its General Plan in 2002. Further integration of water management strategies and coordination between competing interests benefits the watershed as a whole and would allow for more orderly development in Riverside County and overall protection of the San Jacinto Creek watershed consistent with the Component Plan.

Mojave IRWM Region and IRWM Plan

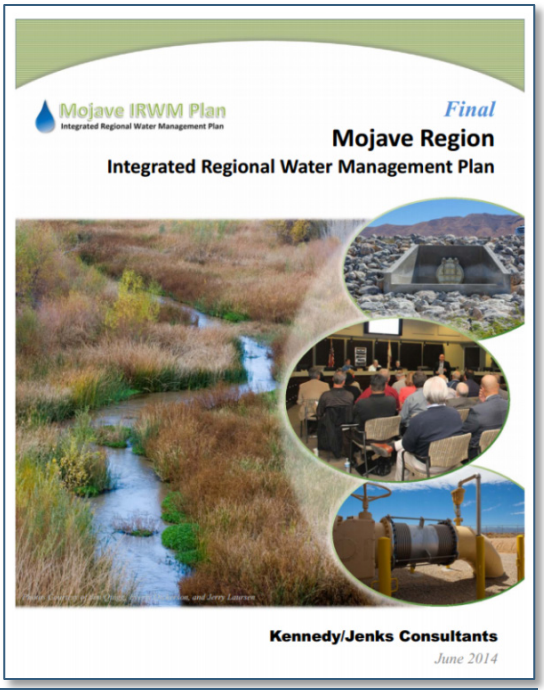
The Mojave IRWM Region encompasses the entire Mojave River watershed in the California High Desert area of San Bernardino County. A majority of the Mojave IRWM Region is overlapped by the Mojave Water Agency service area, which was originally established in 1959 for the purpose of improved management of declining groundwater levels in the area. Numerous groups participate in IRWM Plan development and ongoing implementation activities within the Mojave IRWM Region. The Mojave IRWM Region encompasses 58 municipal water purveyors with authority over water supply and management, and which share a common interest in enhancing water resource management to improve the reliability and sustainability of available resources. These water purveyors, along with other numerous public agencies and community groups, are part of the collaborative Mojave IRWM Planning process.

The Mojave IRWM Plan integrates components related to all aspects of water management in the Region, including, but not limited to, water supply, water quality, wastewater, recycled water, water conservation, storm water/flood management, watershed planning, climate change, habitat protection and restoration, and stakeholder and public outreach.

As part of San Bernardino County's Countywide Vision Process, the agencies that participate in the Mojave IRWM planning process and the IRWM Region collaborate with each other and with San Bernardino County to coordinate water resources management efforts with land use management planning.

1.5.2 IRWM Plan Relation to Local Water Planning and Land Use Planning

The Region's open governance structure allows for ongoing interaction between local planning efforts (both water and land use) and IRWM planning. Within the Region, local planning is conducted by counties, cities, local agencies, and special districts. San Bernardino County, cities, and water agencies within the Region coordinate as part of the San Bernardino Countywide Vision Process. Part of this process involves collaboration between water resource managers and land use planners on the water element to create mutually beneficial opportunities that ensure adequate water supplies and quality to support future population and economic growth within the County.



In addition, existing local, regional, and statewide plans were reviewed for relevant information to include as a part of the IRWM Plan update. The relevant plans, listed in Table 1-1, were used to further refine the Region's description, goals, and objectives. Table 1-1 lists each plan and how its information was used in the IRWM Plan.

The IRWM Region recognizes the importance of collaboration between land use planning and water

resources management. The processes in place for updating the Region description, objectives, strategies, and projects incorporates input from land use planners that are a part of the stakeholder group, and those who take part in BTAC meetings. It will be necessary to continue coordination with these land use planners to ensure that the IRWM Plan is appropriately implemented.

1.6 Contents of the IRWM Plan

As discussed in Section 1.3, this 2015 IRWM Plan was prepared in accordance with DWR's *Integrated Regional Water Management Plan Standards*. Table 1-2 shows how the IRWM Plan is organized, and how it aligns with IRWM-related Guidelines established by DWR ("DWR Plan Standards"). A detailed DWR checklist of Prop 84 Guidelines is provided in Appendix D.

Table 1-2: IRWM Plan Update Organization and Alignment with DWR Plan Standards

IRWM Plan Update Chapter	DWR Plan Standard
Chapter 1: Regional Planning, Governance, Outreach and Coordination	Governance Integration Technical Analysis Relation to Local Water Planning Relation to Local Land Use Planning Stakeholder Involvement Coordination
Chapter 2: Region Description	Region Description Climate Change
Chapter 3: Water Budget	Region Description Technical Analysis
Chapter 4: Goals and Objectives	Objectives Integration Climate Change
Chapter 5: Water Management Strategies	Resource Management Strategies Integration Impacts and Benefits Climate Change
Chapter 6: Projects	Project Review Process Integration Climate Change
Chapter 7: IRWM Plan Implementation	Finance Relation to Local Water Planning Relation to Local Land Use Planning Climate Change
Chapter 8: Data Management and Plan Performance	Data Management Plan Performance and Monitoring

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2 Region Description

2.1 Location

The SAR watershed is the largest stream system in Southern California. The headwaters originate in the San Bernardino Mountains and are discharged to the Pacific Ocean approximately 100 miles to the southwest between Newport Beach and Huntington Beach. The SAR watershed covers over 2,650 square miles of widely varying forested, rural, and urban terrain and covers the more populated urban areas of San Bernardino, Riverside, and Orange Counties, as well as a lesser portion of Los Angeles County. Disputes over the use of water in the SAR led to the subdivision of the watershed into the Upper SAR watershed and Lower SAR watershed just upstream of Prado Dam.



The Upper Santa Ana River Watershed is an area with unique hydrological characteristics and water management issues.

The USARW IRWM Region covers 852 square miles, approximately 32% of the total SAR watershed, and is primarily located in San Bernardino and Riverside Counties. The Region includes Big Bear Lake as well as the cities and communities of San Bernardino, Yucaipa, Redlands, Highland, Rialto, Mentone, Colton, Grand Terrace, Loma Linda, Beaumont, and Riverside. This Region was selected for IRWM planning in large part because of the following factors:

- Rapid population growth in the area and the potential for continued rapid growth in the future. Population in the Region is expected to grow to nearly 1.3 million by 2035 from the current population of approximately 956,000.
- Significant institutional issues, hydrological characteristics, and court judgments that separate the Upper SAR watershed from the downstream portion of the watershed at the Riverside Narrows just upstream from Prado Dam. The Orange County Water District v. City of Chino, et al., Case No. 117628 (Orange County Judgment) and the Western Municipal Water District of Riverside County v. East San Bernardino County Water District, Case No. 78426 (Western Judgment), have significant influence on water management of the Upper SAR and dictate, to some degree, how water resources should be managed in the Upper SAR watershed.
- The Upper SAR watershed is an area with unique physical characteristics. The Upper SAR has widely variable hydrology and challenging water management issues, including the need to make use of local water supplies to make the Region self-sufficient. The agencies in the Region coordinate and collectively manage the groundwater spreading and pumping, and plan to establish a cooperative, integrated plan that will reduce or eliminate historical water right conflicts among the water agencies in the Upper SAR watershed.
- Groundwater basins in the Upper SAR watershed are generally separated from the groundwater basins in the lower watershed. The groundwater basin in which most Region-related activities take place is the San Bernardino Basin Area (SBBA), which is composed of the Bunker Hill and Lytle Creek subbasins. A discussion of groundwater basins within the Region is presented later in this chapter.

The Region is defined by the area that contributes surface runoff to the Riverside Narrows at U.S. Geological Survey (USGS) Gage 11066460. The USGS has operated this site as a continuous record gaging station since March 1970. There are numerous tributaries that contribute flow to the main stem of the SAR in the Region, including Mill Creek, City Creek, Plunge Creek (a tributary of City Creek), Mission Zanja Creek (located just upstream of the San Timoteo Creek), San Timoteo Creek, East Twin Creek, Warm Creek, and Lytle Creek.

2.2 Major Water Related Infrastructure

The water-related infrastructure of the Upper SAR watershed reflects the complex water history of the IRWM Region. The predecessors of many of the water agencies that are participating in the IRWM Plan were constructing ditches in the 1800s. The water rights and facilities established in the 1800s have helped determine the structure of today's water agencies and the arrangement of today's infrastructure. After State Water Project (SWP) facilities were extended into the Region in the early 1970s, State Water Contractors receiving deliveries from the East Branch of the SWP – Valley District, San Gorgonio Pass Water Agency, and Metropolitan Water District of Southern California (Metropolitan) – constructed pipelines to take advantage of the imported water. Figure 2-1 shows the major water-related infrastructure in the Region.

2.2.1 Regional Water Supply Infrastructure

Groundwater and local surface water serve as important sources of regional water supply. The SBBA is a major source of water supply for agencies in San Bernardino and Riverside Counties. Three major regional transmission systems exist in the IRWM Region, and are used to deliver water to the City of Riverside. These are the Gage Canal, Waterman Pipeline, and Riverside Canal. The Gage Canal is owned by the Gage Canal Company. As of 2005, the City of Riverside owned approximately 59% of the Gage Canal Company. The canal extends from the SAR near Loma Linda to the Arlington Heights area. The Gage Canal is used to deliver both potable and irrigation water.



Regional water supply infrastructure delivers local supplies across to the City of Riverside.

The Waterman Pipeline extends from the Bunker Hill Subbasin (discussed later in this chapter) to the Canyon Crest area, and is used to deliver groundwater to portions of the City of Riverside.

The Riverside Canal is a 12-mile canal extending from the City of Colton to Jefferson Street in the City of Riverside. Non-potable groundwater is conveyed in the Flume Pipeline to the Riverside Canal.

2.2.2 State Water Project Facilities

SWP water is imported into the Upper SAR watershed via the East Branch of the California Aqueduct. At the Devil Canyon Power Plant, located at the foot of the San Bernardino Mountains near Interstate 215, SWP water can be delivered in several directions in State facilities or in transmission systems belonging to State Water Contractors.

The SWP's Santa Ana Pipeline extends south from the East Branch, roughly paralleling Lytle Creek and into Lake Perris. Deliveries from the Santa Ana Pipeline can be made to Metropolitan member agencies including Western, Eastern Municipal Water District (Eastern), and the San Diego County Water Authority.



The California Aqueduct delivers imported water to the Upper Santa Ana River Watershed.

The East Branch Extension of the SWP is a combination of facilities built by Valley District and the State and funded by Valley District and San Gorgonio Pass Water Agency. Valley District operates these facilities for the State and San Gorgonio Pass Water Agency. The East Branch Extension makes deliveries from Devil Canyon east along the foothills of the San Bernardino Mountains and out to the San Gorgonio Pass Water Agency service area. Portions of the East Branch Extension, including the Foothill Pipeline, are used to implement the Santa Ana River-Mill Creek Cooperative Water Project Agreement (Exchange Plan). This agreement provides for a three-level exchange that allows Valley District to deliver water to the Yucaipa area by exchanging SAR and Mill Creek water among ten agencies. In the past, the Foothill Pipeline was also used to deliver local water to Devil Canyon Afterbay and on to Metropolitan, West Valley Water District (West Valley), and Fontana Water Company. Phase 2 of the East Branch Extension is expected to be completed by 2015. Phase 2 will bring the capacity of the Extension to 17,300 acre-feet (AF), which is the Agency's official allotment of SWP water, and is enough to supply approximately 35,000 families each year.

2.2.3 State Water Contractors Facilities

Four State Water Contractors have facilities in the IRWM Region: Valley District, San Gorgonio Pass Water Agency, Metropolitan, and San Gabriel Valley Municipal Water District.

Metropolitan's Inland Feeder extends from Devil Canyon to Diamond Valley Lake and the tunnels within the San Bernardino Mountains. Currently, the Foothill Pipeline is being used to make deliveries of SWP water to the completed portions of the Inland Feeder for delivery to Diamond Valley Lake.

Metropolitan's Rialto Pipeline is used to make deliveries from Devil Canyon to Metropolitan's F.E. Weymouth Treatment Plant in the San Gabriel Valley and to its Robert B. Diemer Treatment Plant, which supplies treated water to Western and Eastern. In addition, the Rialto Pipeline makes deliveries to surface water treatment plants owned by Metropolitan's member agencies and to groundwater recharge facilities.

The Devil Canyon-Azusa Pipeline is used primarily to make deliveries for replenishment of the Main San Gabriel Basin. Valley District owns capacity in this pipeline. Through this pipeline, Valley District can deliver SWP water to the western portion of its service area including West Valley and Fontana Water Company as well as the Cactus Spreading Basins.

Many of Valley District's facilities have been integrated into the SWP, as described in Section 2.2.1. In addition, Valley District has three pipelines that are not integrated into the SWP. These are the Baseline Feeder, Baseline Feeder Extension South, and Central Feeder. The Baseline Feeder is a 48-inch pipeline that serves potable water from the SBBA to the City of Rialto, West Valley, and Riverside Highland Water Company.

The Baseline Feeder Extension South is a 78-inch pipeline that was constructed north/south in alignment from the vicinity of 9th Street and Waterman Avenue in San Bernardino, south past the

Antil area where there is a major concentration of production wells, and on to the vicinity of the SAR. This pipeline will ultimately serve water from the SBBA throughout Valley District's service area and on to Riverside County.

Valley District completed the construction of a portion of the Central Feeder, in an east/west alignment in San Bernardino Avenue from Opal Avenue Westerly to Texas Street in Redlands. The Central Feeder may eventually be extended and connected to the Baseline Feeder Extension South and possibly to the SWP Santa Ana Pipeline.



The San Timoteo flood channel is a concrete-lined channel.

2.2.4 Regional Flood Control Infrastructure

The Upper SAR watershed consists of many tributaries flowing to the SAR. These tributaries exhibit a range of development from natural streams to concrete-lined channels. Many of the streams flow through heavily developed areas. The San Bernardino County Flood Control District (SBCFCD) operates and maintains many of the tributary systems that are deemed "regional" (750 cubic feet per second (cfs) or greater flow and/or 640 acres or greater of watershed as well as portions of the SAR). Smaller-scale control facilities are generally operated by local jurisdictions. Flood control agencies' boundaries follow the county boundaries for those areas which they manage.

The regional flood control facilities have been continually developed and operated by SBCFCD since its establishment in 1939 and are operated for the general safety of the residents of San Bernardino County. Flood control facilities and improvements protect vital roadways and utility corridors along with providing public recreational amenities such as trails and landscaping. Endangered species habitat is protected with various project and non-project related improvements.

Figure 2-1: Major Water Supply Infrastructure

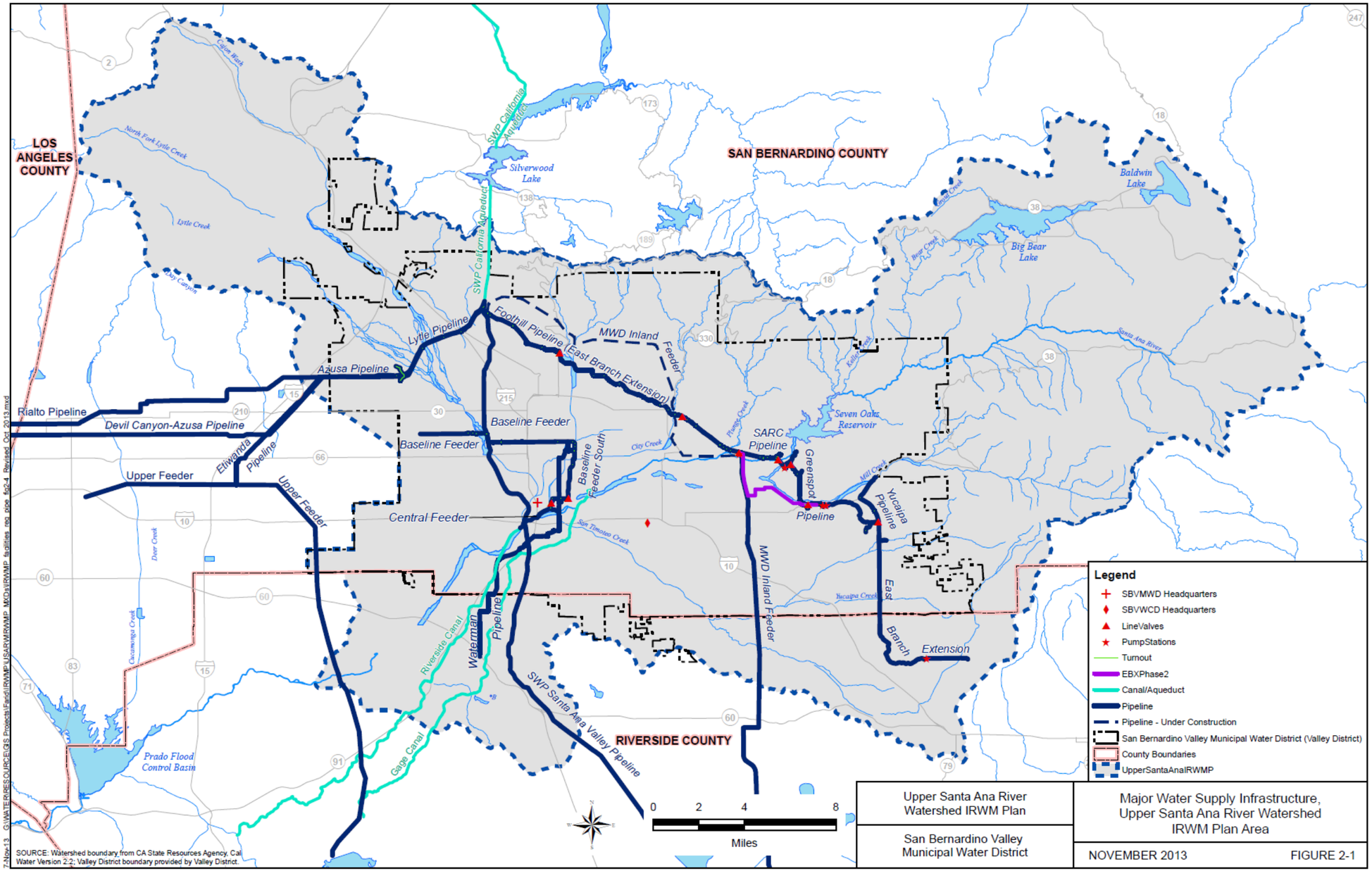
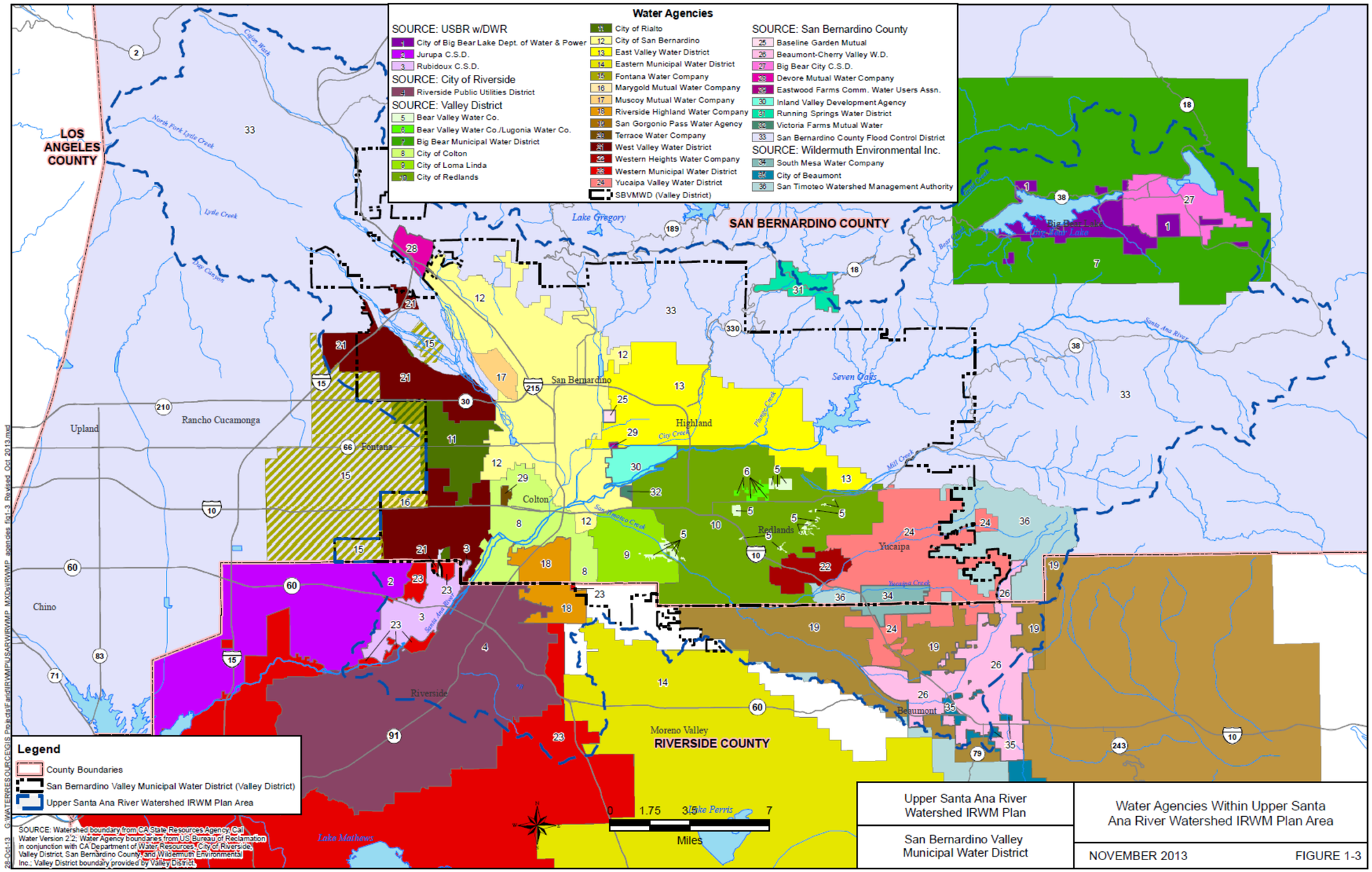


Figure 2-2: Water Agencies and Cities in the Upper Santa Ana River Watershed Region



2.3 Water Resource Management Agencies

Water resources in the IRWM Region are managed by a number of different entities, including water wholesalers and retailers, water conservation districts, flood control districts, and educational entities. These entities are described in this section and are shown in Figure 2-2.

2.3.1 Water Supply Managers, Retailers and Wholesalers

San Bernardino Valley Municipal Water District

Valley District was formed in 1954, under the Municipal Water District Act of 1911 (California Water Code Section 71000 et seq.) as a regional agency to plan a long-range water supply for the San Bernardino Valley. Valley District imports water into its service area through participation in the SWP and manages groundwater storage within its boundaries, and also provides stormwater disposal, recreation, and fire protection services. Valley District does not deliver water directly to retail water customers.

Valley District covers about 325 square miles, mainly in southwestern San Bernardino County, and has a population of about 600,000 people. It spans the eastern two-thirds of the San Bernardino Valley, the Crafton Hills, and a portion of the Yucaipa Valley, and includes the cities and communities of San Bernardino, Colton, Loma Linda, Redlands, Rialto, Fontana, Bloomington, Highland, East Highland, Grand Terrace, Mentone, and Yucaipa.

Valley District is responsible for long-range water supply management, including importing supplemental water, and is responsible for storage management of most of the groundwater basins within its boundaries and for groundwater extraction over the amount specified in the Orange County and Western Judgments explained below. Valley District has specific responsibilities for monitoring groundwater supplies in the SBBA and Rialto-Colton Subbasin, and for a portion of the minimum SAR flow required at the Riverside Narrows.

Valley District has developed a “cooperative recharge program” that is being successfully implemented to help replenish groundwater, using both SWP water and local runoff. Valley District takes delivery of SWP water at the Devil Canyon Power Plant Afterbay, which is located just within its northern boundary. The SWP water is conveyed 17 miles eastward to various spreading grounds and agricultural and wholesale domestic delivery points in the SBBA. Water is also conveyed westward for direct delivery in the Rialto-Colton Subbasin.

In the 1960s, dry conditions resulted in the over-commitment of water resources in the SAR watershed which led to lawsuits between water users in the upper and lower watersheds regarding both surface flows and groundwater. The lawsuits culminated in 1969 in the Orange County and Western Judgments. Under the terms of the judgments, Valley District became responsible for providing a portion of the specified SAR base flow to Orange County and for replenishing the SBBA under certain conditions. If the conditions of either judgment are not met by the natural water supply, including new conservation, Valley District is required to deliver supplemental water to offset the deficiency. The judgments resolved the major water rights issues that had prevented the development of long-term, region-wide water supply plans and established specific objectives for the management of the groundwater basins.

San Bernardino Valley Water Conservation District

The mission of the San Bernardino Valley Water Conservation District (SBVWCD) is to ensure that recharge of the Bunker Hill Subbasin is accomplished in an environmentally and economically responsible way using local native surface water to the maximum extent practicable.

The SBVWCD and its predecessors have conducted water conservation (groundwater recharge) activities for more than 100 years. SBVWCD operates two areas that overlie the Bunker Hill Subbasin in the San Bernardino Valley. These areas are at the upper end of the SAR wash area below Seven Oaks Dam and adjacent to Mill Creek just upstream of the confluence with the SAR (collectively, the wash area). The SBVWCD diverts surface water flows during both storm and normal runoff from the SAR and Mill Creek, and channels the flows into two separate systems of recharge basins where it is percolated into the groundwater basin for later pumping and use by local entities and private producers.

The SBVWCD's boundaries encompass more than 78 square miles and include portions of the communities of San Bernardino, Loma Linda, Redlands, Highland and Colton, as well as the unincorporated county area of Mentone and other unincorporated county "islands" within the incorporated cities.

City of Redlands

For nearly 100 years, the City of Redlands (Redlands) has been providing high-quality drinking water to Redlands and unincorporated areas of San Bernardino County. Currently, the city has 21,500 water service connections. More than 77,000 residents in Redlands, unincorporated areas of San Bernardino County, and a small part of the City of San Bernardino receive water service from Redlands. By supplying a blend of groundwater, surface water, and water imported from the SWP, Redlands meets its customers' demands, which average 25 million gallons per day (mgd) and a peak of over 50 mgd.

Redlands also owns and operates a sewer collection system and the Redlands Wastewater Treatment Facility that can treat 7.2 mgd of wastewater for industrial and irrigation purposes, including supplying water to the Southern California Edison Mountainview Power Plant.

West Valley Water District

West Valley is a public agency of the State of California and was formed in 1952 under the name of the Bloomington County Water District. Since that time, West Valley has gone through several name changes and has acquired numerous other water suppliers with water rights dating back over 100 years.

West Valley is located mainly within southwestern San Bernardino County and to a lesser amount within northern Riverside County. West Valley is adjacent to the western limits of the City of San Bernardino on the east, adjacent to and including the eastern part of the City of Fontana on the west, adjacent to the United States Forest Service boundary on the north, and the County of Riverside on the south. The majority of West Valley's service area lies within Valley District's boundaries. The validity and the extent of West Valley's water rights in Lytle Creek Subbasin, Rialto-Colton Subbasin, Rialto Basin, and the area known as "No Man's Land" are disputed and are the subject of a lawsuit currently pending in the Superior Court for the County of San Bernardino entitled San Bernardino Valley Municipal Water District et al. v. San Gabriel Valley Water Co. et al., Case No. CVDS1311085.

West Valley's service area is approximately 31 square miles, serving portions of the Cities of Rialto, Fontana, Colton and unincorporated areas of San Bernardino and Riverside Counties. West Valley utilizes water from five groundwater basins and treats surface water from Lytle Creek and SWP water at its 14.4 mgd Oliver P. Roemer Water Filtration Facility to serve over 19,000 water service connections.

East Valley Water District

East Valley Water District is a special district formed in 1954 through an election by local residents who wanted water service by a public water agency. Originally called the East San Bernardino County Water District, it was formed to provide domestic water service to the then unincorporated and agriculturally based communities of Highland and East Highland. Later, as the population increased, the need for a modern sewer system to replace the septic tanks became apparent. The residents voted to give East Valley Water District the responsibility for their sewer system, as they had done earlier with their water service.

Over the years, some of the service area was annexed to the City of San Bernardino, but water service remained with the East Valley Water District, primarily due to logistics and cost. In 1987, the City of Highland incorporated. Now, the East Valley Water District's previously agriculture-dominated area is urbanized, and few orange groves remain. The East Valley Water District's 33.5 square mile area services approximately 65,000 persons. All services are financed solely by rates; customers pay only for the benefits and services they receive. The East Valley Water District currently has 21,827 water service connections.

The forefathers of the East Valley Water District, anticipating a higher demand and a larger customer base, obtained water rights that date back over 100 years for the use of surface water from the SAR. Today, this surface water meets one-quarter of the district's water needs.

San Bernardino Municipal Water Department

San Bernardino Municipal Water Department (SBMWD) meets its customers' needs by providing high-quality service in water supply, water reclamation, and geothermal heating. SBMWD produces all of its own water, using 55 wells located in 45 square miles of water service area, and delivering it to more than 40,000 service connections through 650 miles of water mains. SBMWD reclaims over 30 million gallons of water each day from the City of San Bernardino, using innovative and cost-effective methods to make the reclaimed water safe for the environment and for reuse.

Yucaipa Valley Water District

Yucaipa Valley Water District (YVWD) is a special district that provides water supply, treatment, and distribution, recycled water supply and distribution services, and wastewater collection and treatment. Formed in 1971, YVWD acquired many of the private water companies serving the Yucaipa Valley. YVWD's most recent consolidations of water services occurred with the acquisition of the Harry V. Slack Water Company in 1987 and the Wildwood Canyon Mutual Water Company in 1992. YVWD currently satisfies the majority of its water demands from groundwater supplied through district-owned wells located throughout the service area. An extensive distribution system provides water storage and transmission throughout YVWD's service area. The only supply of surface water is provided through the Oak Glen Water Filtration Plant. Additional water sources that are expected to be available to YVWD in the near future include imported water through the SWP and recycled water from its Wochholz Regional WWTP.

City of Riverside

The City of Riverside Public Utilities Department (Riverside Public Utilities) provides potable water, non-potable water, recycled water, and electricity to the City of Riverside, and was established in 1895 (electricity) and 1913 (water). Riverside Public Utilities currently serves water to a population of 287,000 people through about 65,000 service connections within an area of 73.9 square miles. Riverside Public Utilities is committed to providing the highest quality water and electric services at the lowest possible rates to benefit the community. Riverside Public Utilities' annual total water demand is expected to increase from 85,215 AF in 2012 to an estimated 115,726

AF by 2035, and plans to develop additional water supply projects to meet future growth in demand.

San Gorgonio Pass Water Agency

San Gorgonio Pass Water Agency was established in 1961 by the California State Legislature. The service area includes the incorporated cities of Calimesa, Beaumont, and Banning, and the communities of Cherry Valley, Cabazon, Poppet Flat, San Timoteo Canyon, Live Oak Canyon, and the Banning Bench.

San Gorgonio Pass Water Agency, a State Water Contractor, purchases water from the State of California and sells it to local retail water agencies, which use the water either for direct deliveries or for groundwater recharge. Water is imported into the service area by the East Branch of the California Aqueduct. San Gorgonio Pass Water Agency operates the Little San Gorgonio Creek Recharge Facility on Orchard Street in Cherry Valley. The Little San Gorgonio Creek Recharge Facility includes six ponds in which SWP water is placed to percolate into the ground to recharge the Beaumont Subbasin.

City of Big Bear Lake Department of Water and Power

The City of Big Bear Lake Department of Water and Power is located in the San Bernardino Mountains at approximately 6,750 feet above sea level. With nearly 16,000 connections, the agency is dedicated to providing the City of Big Bear Lake, Moonridge, Fawnskin, Sugarloaf, Lake William, and portions of Erwin Lake and Rimforest with a safe, reliable source of water for public health and safety.

Key components of the City of Big Bear Lake Department of Water and Power's water system include adequate source capacity (wells) and storage capacity (reservoirs) to meet peak holiday and weekend demands, and replacement of old, leaky, undersized steel mainlines to provide adequate fire protection. The agency maintains 57 wells, 26 booster pumping units, 16 reservoirs, 2 manganese treatment plants, 1 surface water treatment plant, chlorination stations at all well pumping plants, 20 sample stations, approximately 180 miles of water main pipeline, and a complex pressure-reducing network.

The City of Big Bear Lake Department of Water and Power's water supplies come from snow and rain that percolates into the groundwater basin. The City of Big Bear Lake Department of Water and Power does not use lake water for public health and safety and no additional water is imported into the Big Bear Valley.

The City of Big Bear Lake Department of Water and Power has an aggressive water conservation program that has significantly reduced summertime consumption over the past several years. Community outreach programs keep customers informed on current water conditions, and the agency's Technical Review Team monitors, evaluates, and analyzes well and water consumption data on a continual basis. The agency's five-member Board of Commissioners is appointed by the City of Big Bear Lake's City Council and is made up of policy makers committed to safeguarding its water resources.

Big Bear City Community Services District

The Big Bear City Community Services District consists of overlapping Fire, Water, Sewer, Solid Waste (trash collection), and Street Lighting service areas and encompasses a total of 21.1 square miles. One or more services are provided to approximately 16,400 customers.

The water services are run by the Water Department. Major facilities of the Water Department include 73 miles of pipeline ranging from 1.5 to 20 inches in diameter, 10 vertical wells, 2 slant wells, 2 springs, 4 tank reservoirs with a total of 6.25 million gallons of water storage capacity, and

6 water booster stations. This infrastructure provides water to more than 6,018 customers as of 2012.

The sewer services are run by the Sewer Department, which maintains a system consisting of approximately 115 lineal miles of sewer pipeline, 2,842 manholes, and 7 sewer lift stations. The Sewer Department now services almost 12,000 homes and businesses. Sewage treatment and treated wastewater effluent export is handled by the Big Bear Area Regional Wastewater Agency (BBARWA), which is separate from, but partially funded by the Big Bear City Community Services District through fees.

Fontana Union Water Company

Fontana Union Water Company (Fontana Union) is a mutual water company and does not directly deliver water to domestic customers. Fontana Union asserts long-standing adjudicated, vested rights to Lytle Creek surface and subsurface flows and Lytle Creek Subbasin groundwater, as well as groundwater rights in Rialto-Colton Basin and "No Man's Land." The validity and extent of Fontana Union's water rights in Lytle Creek Subbasin, Rialto-Colton Basin and the area known as "No Man's Land" are disputed and are the subject of a lawsuit currently pending in the Superior Court for the County of San Bernardino entitled San Bernardino Valley Municipal Water District et al. v. San Gabriel Valley Water Co. et al., Case No. CVDS1311085.

Fontana Union delivers its available water to its shareholders in accordance with its Articles of Incorporation, Bylaws, and mutual water company law. Fontana Union is 97% owned by Cucamonga Valley Water District and San Gabriel Valley Water Company. Fontana Water Company, a division of San Gabriel Valley Water Company, diverts and produces water pursuant to its rights as Fontana Union's agent in accordance with a court-approved agreement. Under that court-approved agreement, Fontana Union allocates its Chino Basin pumping rights to Cucamonga Valley Water District, and Cucamonga also retains the option of taking delivery of its share of Fontana Union's other water sources.

Bear Valley Mutual Water Company

Bear Valley Mutual Water Company (Bear Valley Mutual) was formed in 1903 by the citrus growers of the Redlands/Highland area to ensure a dependable water supply under their control. Bear Valley Mutual has pre-1914 water rights to the first 88 cubic feet per second (cfs) of surface flow of the SAR. Bear Valley Mutual has appropriative rights on Bear Creek and a storage right in Big Bear Lake, as well as ownership of all the water inflow to the lake.

Beaumont-Cherry Valley Water District

Beaumont-Cherry Valley Water District was formed in 1919 under the Wright Act of 1897 (Water Code Section 20000, et seq.), and serves approximately eight square miles located in Riverside and San Bernardino Counties. Beaumont-Cherry Valley Water District owns approximately 2,800 acres along Little San Gorgonio and Noble Creeks and holds pre-1914 water rights to both streams, which amounts to 3,000 miner's inches of water (approximately 45,000 AF of water). The District has 20 wells in the Beaumont and Edgar Canyon Basins and currently serves about 30,000 consumers through 9,000 metered connections.

Big Bear Municipal Water District

Big Bear Municipal Water District (Big Bear Municipal) was formed in 1964 by the people of Big Bear Valley with the express purpose of stabilizing the level of Big Bear Lake. In January 1977, as a result of a stipulated judgment, Big Bear Municipal purchased title to the dam, reservoir lands lying beneath the lake, and the surface recreation rights to Big Bear Lake. As discussed above, Bear Valley Mutual has ownership rights to all water entering Big Bear Lake.

Big Bear Municipal is responsible for the following:

- Stabilization of the level of Big Bear Lake by managing the amount of water released to Bear Valley Mutual
- Watershed/water quality management
- Recreation management
- Wildlife habitat preservation and enhancement
- Bear Valley Dam and Reservoir maintenance

The stipulated judgment allows Big Bear Municipal to maintain a higher water level in the lake by delivering water to Bear Valley Mutual from an alternate source of water instead of from the lake. This alternate source of water is sometimes referred to as in-lieu water and mainly comes from the SWP. If Big Bear Municipal does not wish to purchase in-lieu water, it must deliver water from the lake to satisfy Bear Valley Mutual Water Company's demands. Studies performed for Bear Valley Mutual have estimated average lake releases to be 4,279 AFY.

City of Colton Public Utilities Department

The City of Colton's Public Utilities Department (Colton Public Utilities) provides water, wastewater and electrical services within the City of Colton. Water sources include groundwater from the Riverside North, Rialto-Colton, and Bunker Hill Subbasins. The validity and the extent of the City of Colton's water rights in Lytle Creek Subbasin, Rialto-Colton Subbasin, Rialto Basin, and the area known as "No Man's Land" are disputed and are the subject of a lawsuit currently pending in the Superior Court for the County of San Bernardino entitled San Bernardino Valley Municipal Water District et al. v. San Gabriel Valley Water Co. et al., Case No. CVDS1311085. Colton Public Utilities serves water to approximately 48,000 customers.

City of Loma Linda

The City of Loma Linda obtains groundwater from within the Bunker Hill Subbasin. Production facilities include eight production wells, four above-ground steel reservoirs, and two in ground pre-stressed concrete storage reservoirs, with a combined storage capacity of 14.9 million gallons. The reservoirs provide storage to the city's five different pressure zones. There are eight pressure-reducing stations in the distribution system that lower water pressure from one zone to another to provide constant regulated pressure. To transfer water between zones, there are five booster stations located in the different zones. Loma Linda also has two "emergency" connections to the City of San Bernardino and one to the City of Redlands to meet its supplemental needs. The city's population is approximately 23,600 people. Loma Linda also provides wastewater service.

City of Rialto

Residents of the City of Rialto (Rialto) obtain water from three purveyors: the Utilities Department of the City of Rialto, West Valley, and Fontana Water Company. Rialto provides water service for approximately 12,000 connections. Generally, these are the more developed portions of the city (West Valley provides the water in the remaining areas).

Rialto obtains water from the Rialto-Colton Subbasin, Lytle Creek Subbasin, SBBA, and the "Chino wells", the latter of which are not located within the adjudicated boundaries of Chino Basin. The validity and the extent of Rialto's water rights in Lytle Creek Subbasin, Rialto-Colton Subbasin, Rialto Basin, and the area known as "No Man's Land" are disputed and are the subject of a lawsuit currently pending in the Superior Court for the County of San Bernardino entitled San Bernardino Valley Municipal Water District et al. v. San Gabriel Valley Water Co. et al., Case No. CVDS1311085.

In recent years, most of these sources have been impacted by groundwater contamination, including perchlorate contamination of the Rialto-Colton Subbasin and the Chino wells. Rialto has adopted a "zero tolerance" policy for perchlorate, meaning that it will not serve water with any perchlorate even the water meets all of the public health standards. Rialto has installed treatment systems on some wells and is pursuing installation of additional treatment systems. In 2003, the City of Rialto declared a water shortage emergency in accordance with California Water Code Sections 350-359.

Rialto operates wastewater service within the city and has recently initiated deliveries of recycled water to the California Department of Transportation. Surface water treatment of Lytle Creek water is provided by the Oliver P. Roemer Water Filtration Plant owned and operated by West Valley. Rialto owns a portion of the capacity of that plant.

Fontana Water Company

Fontana Water Company, a division of San Gabriel Valley Water Company, is a public utility regulated by the California Public Utilities Commission. Fontana Water Company's service area covers approximately 52 square miles with boundaries including the San Gabriel Mountains to the north and the Riverside County Line to the south. Fontana Water Company serves most of the City of Fontana and parts of Rancho Cucamonga, Ontario, and Rialto. Fontana Water Company serves a population of approximately 210,300 people with over 45,000 active service connections. Each year Fontana Water Company produces between 45,000 – 50,000 AF of water from water supply sources that include surface water from Lytle Creek and SWP water, which is treated at Fontana Water Company's Sandhill Water Treatment Plant and groundwater from the Lytle, Rialto, No-Man's Land, and Chino Basins. Fontana Water Company diverts and receives Lytle Creek surface water and produces groundwater in the Lytle, Rialto, and No-Man's Land Basins as an agent for Fontana Union, which asserts extensive water rights to these sources of supply pursuant to longstanding court judgments. The validity and the extent of Fontana Water Company's and Fontana Union's water rights in Lytle Creek Subbasin, Rialto-Colton Basin and the area known as "No Man's Land" are disputed and are the subject of a lawsuit currently pending in the Superior Court for the County of San Bernardino entitled San Bernardino Valley Municipal Water District et al. v. San Gabriel Valley Water Co. et al., Case No. CVDS1311085.

Marygold Mutual Water Company

Marygold Mutual Water Company (Marygold) serves customers generally located in the unincorporated community of Bloomington. Marygold obtains water from the Chino Basin through rights to the appropriative pool of Chino Basin and from the SBBA.

Muscoy Mutual Water Company

Muscoy Mutual Water Company (Muscoy) serves the majority of the unincorporated community of Muscoy. SBMWD serves the remainder of the Muscoy community. The community is located between the cities of San Bernardino and Rialto. All water produced by Muscoy is from the SBBA.

Riverside Highland Water Company

The Riverside Highland Water Company (Riverside Highland) serves both domestic and irrigation water in San Bernardino and Riverside Counties. Riverside Highland provides water to about 4,000 service connections in the City of Grand Terrace located in the Riverside Mesa south of the Santa Ana River and a portion of the Highgrove area of Riverside County. Riverside Highland obtains water from the Lytle Creek Subbasin, the SBBA, the Rialto-Colton Subbasin, Riverside North and Riverside South Basins.

Meeks & Daley Water Company

The City of Riverside owns stock in several mutual water companies, including the Meeks & Daley Water Company. Ownership interests in the Meeks & Daley Water Company entitle the City of Riverside to export rights of about 2,900 AF (or 38.6%) from the Bunker Hill Subbasin as of December 2010. Meeks & Daley Water Company was incorporated on September 1, 1885, and is the successor company to three Mutual Water Companies - Meeks & Daley Water Company, Agua Mansa Water Company, and the Alta Mesa Water Company. Meeks & Daley Water Company provides water to the stockholders for agricultural purposes. To fund operating expenses, the company assesses all shareholders twice per year based on the number of shares owed on the date of the assessment.

The company owns water rights in the Bunker Hill Subbasin and pumps water from a series of wells located within the basin, transporting this water through the Riverside and Gage Canals. At the end of the canal systems, Meeks & Daley Water Company operates a pipeline and pump station to deliver irrigation water to users in the southern portion of the City of Corona.

With the construction of additional delivery facilities in 1996, Meeks & Daley Water Company began delivering water to the Orange County Water District under the Orange County Water Transfer Project, with water delivered to the SAR for storage behind Prado Dam and subsequent release and groundwater recharge downstream. Riverside owns 59% of the Gage Canal Company stock. This company owns surface water rights to the SAR.

Other Water Purveyors in the Region

Other water purveyors in the IRWM Region include:

- South Mesa Water Company, which serves water to part of the City of Calimesa
- Terrace Water Company services, which is an area located between the service areas of Colton Public Utilities and West Valley
- Western Heights Mutual Water Company, which serves the southeast portion of the City of Redlands and a portion of the City of Yucaipa
- Eastwood Farms Community Water Users Association, which provides water to a small portion of the City of Highland
- Arroyo Verde Mutual Water District, which provides water to a small portion of the City of Highland
- Victoria Farms Mutual Water Company, which serves a population of approximately 1,000
- Inland Valley Development Agency, a joint powers authority comprised of San Bernardino County and the Cities of San Bernardino, Colton, and Loma Linda
- Devore Mutual Water Company, which serves an area near the intersection of Interstate 15 and Interstate 215
- Running Springs Water District, which serves the community of Running Springs
- Arrowhead Park County Water District, which serves an area adjacent to the Running Springs Water District

2.3.2 Flood Control Agencies

San Bernardino County Flood Control District

SBCFCD was formed as a special district in April 1939 after the 1938 floods in the County of San Bernardino. SBCFCD's functions include flood protection from major streams, flood control planning, storm drain management, debris removal programs, right-of-way acquisition, flood hazard investigations, and flood operations. SBCFCD has numerous Master Plans of Drainage for various areas within the county. A Master Plan of Drainage is a coordinated plan of flood control improvements for an area based on its future planned development that identifies existing flood control facilities that are inadequate to convey the 100-year peak storm flows, including needed improvements to existing facilities and new facilities that need to be constructed to provide an adequate level of flood protection. Since its inception, SBCFCD has worked with United States Army Corps of Engineers (USACE) to develop federally funded major flood control facilities in the county. SBCFCD manages its activities through six physical flood control zones. The budget projections are also determined for each zone through an annual budget study with most of the zones also having a 10-year plan. SBCFCD is also participating with Inland Empire Utilities Agency and Chino Basin Water Conservation District on the Chino Basin Recharge Improvement Project.

2.3.3 Other Water Related Entities

Water Resources Institute/California State University, San Bernardino

The Water Resources Institute/California State University San Bernardino (WRI-CSUSB) was established by the faculty senate in 1999. The senate and the university administration recognized that water is one of the most precious resources in its service area (San Bernardino and Riverside Counties) and set out to make water an area of distinction at this campus.

The WRI-CSUSB operates an extensive water resource archive that includes maps; aerial photographs; newspaper articles; water and environmental reference books; and federal, State, and local government documents, studies, and reports. This archive is gradually being digitized to make it more accessible to users. It also includes water and environmental data and metadata, thus expanding the concept of an archive beyond the original concept of hard copies of old documents.

The WRI-CSUSB is an interdisciplinary center for research, policy analysis, and education. The full-time staff is engaged in a variety of partnerships providing technical assistance to public and private water stakeholders. The WRI-CSUSB specializes in integrated watershed projects promoting land use practices that minimize the impact of development on watershed functions. The WRI-CSUSB manages the Alluvial Fan Task Force for DWR by working with stakeholders in the watershed on resource-efficient guidelines for developing on alluvial fan floodplains. The WRI-CSUSB assists the Local Government Commission with presenting the Ahwahnee Water Principles for Resource Efficient Land Use[1] to elected officials and developers on the connection between land use and water. The WRI-CSUSB partners with California Resources Connection, Inc. on the Inland Empire Sustainable Watershed Program developing Green Building Practices and Model Ordinances to overcome obstacles in resource-efficient land use.

Regents of the University of California

The Regents have rights to water from the SBBA, which is used by the University of California Riverside (UCR). The water is delivered to UCR by the Riverside Public Utilities Department.

[1] The Ahwahnee Water Principles for Resource-Efficiency Land Use are a set of stewardship actions that cities and counties can take that reduce costs and improve the reliability and quality of water resources.

2.4 Surface Hydrology

Surface hydrology of the IRWM Region is comprised of the SAR and its tributaries. A number of surface reservoirs in the Region are operated primarily for agricultural and urban water use, but are also regulated for instream flows and recharge of groundwater basins. The following sections describe the surface hydrology of the Region.

2.4.1 Natural Runoff

Runoff records provide information on the characteristics of flow in the SAR and its tributaries. Such records are available for a number of stream gaging stations located on the mainstem of the SAR and throughout the SAR watershed. The SAR runoff records demonstrate the highly variable nature of river flow, with large floods and long periods of extremely low flow. Three gaging stations provide streamflow data for the USARW. Mentone Gage (USGS record 11051500) is representative of SAR flow near Seven Oaks Dam. There are two other USGS gaging stations located downstream of Seven Oaks Dam, but within the USARW basin—the "E" Street Gage (USGS Gage 11059300) located in the City of San Bernardino at river mile (RM) 57.69 and the Metropolitan Water District Crossing Gage (Metropolitan Crossing) (USGS Gage 11066460) located at RM 45.7 near Riverside Narrows. Table 2-1 provides the annual median, maximum, and minimum streamflow recorded at the Mentone, "E" Street, and Metropolitan Crossing gages (see Figure 1-1 for gage locations).

Table 2-1 : Upper SAR Median, Maximum, and Minimum Annual Flow (in AF)

Gage	Median Annual Flow	Maximum Annual Flow	Minimum Annual Flow
Mentone[a]	10,913	204,812	9
"E" Street[b]	24,040	316,302	567
Metropolitan Crossing[c]	77,600	355,000	21,000

Source: USGS gage data.

[a] USGS Gage 11051500. Period of record is WY 1911-12 through WY 2011-12.

[b] USGS Gage 11059300. Period of record is WY 1938-39 through WY 1945-46, WY 1947-48 through 1953-54, WY 1966-67 through WY 2011-12.

[c] USGS Gage 11066460. Period of record is WY 1969-70 through WY 2011-12.

As exhibited in Table 2-1, flow in the SAR is highly variable from year to year. Flow in the SAR increases downstream due to inflows from tributaries, rising water[2], and treated water from wastewater treatment plants (WWTPs). SAR flows at the "E" Street Gage include flows from Mill Creek and San Timoteo Creek, but not from Lytle and Warm Creeks, which enter the SAR below the "E" Street Gage. SAR flows at the Metropolitan Crossing include inflows from Lytle and Warm Creeks, two large public WWTPs, and rising water.

Flows in excess of about 70,000 AFY have a frequency of occurrence of only 13% at the River Only Mentone Gage, whereas this same flow has a frequency of occurrence of 62% at the Metropolitan Crossing Gage. Additionally, in the upstream areas, minimum annual streamflows are generally much smaller than minimum annual flows in the downstream areas.

The largest monthly flows typically occurred in February and March, and the lowest monthly flows typically occurred between August and October. Although streamflow increases downstream, the timing of flows (i.e., when the monthly maximums and minimums occur) is similar to the timing of flows observed at the Mentone Gage.

[2] Rising water is used to describe noticeable increases in streamflow in reaches where a subsurface restriction forces groundwater to the surface.

There are numerous tributaries that contribute flow to the mainstem of the SAR in the Region, including Mill Creek, City Creek, Plunge Creek (a tributary of City Creek), Mission Zanja Creek (located upstream of San Timoteo Creek), San Timoteo Creek, East Twin Creek, Warm Creek, and Lytle Creek (Figure 2-3). The flow (under 100-year flood conditions[3]) contributed by each of these tributaries is provided in Table 2-2. As a reference, during a 100-year flood event, Seven Oaks Dam would release up to 5,000 cfs (USACE 1988).

Urbanization taking place in the valley areas of the SAR watershed has resulted in increased responsiveness of the basin to rainfall. The increase in impervious surfaces (such as roofs, roads, parking lots, etc.) and constructed drainages to remove surface water from urban areas has resulted in decreased groundwater infiltration and increased runoff from urban areas. These actions have reduced the lag time between peak rainfall and peak runoff (i.e., constructed drainage systems move water from the urban areas to the river faster than this water would move if the land was not developed).

Table 2-2 : Tributary Flow Contribution to the SAR (100-Year Flood Event Discharge in cfs)

Tributary	Inflow	River Mile
Mill Creek	23,000	68.67
City Creek & Plunge Creek (Combined)	16,460	62.87
Mission Zanja Creek	6,100	59.08
San Timoteo Creek	19,500	58.44
East Twin Creek	18,000	58.14
Lytle Creek & Warm Creek (Combined)	70,000	56.74

Source: USACE 2000 and SBCFCD 2013

Compared to a basin without the influence of urbanization, the same rainfall occurring over an urbanized segment of the basin will result in higher peak discharges, a shorter lag-time to the peak discharge, and an overall larger volume of water entering the local drainage channels. Because the SAR watershed is experiencing rapid growth, increased urbanization of the basin is expected to continue; therefore, this trend in increased discharge and decreased lag times between peak rainfall and peak streamflow is expected to continue in the future.

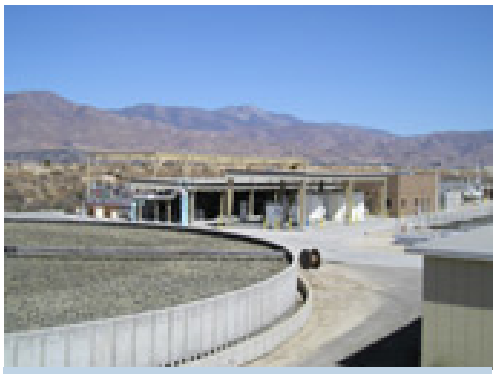
2.4.2 Imported Water

Imported water from the SWP is available to the Region through the IRWM Region's State Water Contractors: Valley District, San Gorgonio Pass Water Agency, and Metropolitan Water District of Southern California. Valley District is the fifth largest State Water Contractor, with an annual entitlement of 102,600 AF. Valley District lies on the East Branch of the California Aqueduct and takes delivery of SWP water at the Devil Canyon Power Plant. From this location, Valley District can deliver water to the west via the San Gabriel Valley Municipal Water District Pipeline (Valley District owns capacity in this pipeline) or to the east through the East Branch Extension of the SWP. San Gorgonio Pass Water Agency is downstream of Valley District on the East Branch of the California Aqueduct.

[3] A flood as defined under the Standard Flood Insurance Policy is a general and temporary condition of partial or complete inundation of normally dry land areas from overflow of inland or tidal waters or from the unusual and rapid accumulation of runoff of surface waters from any source. A 100-year flood refers to a flood level with a 1 in 100 percent chance of being equaled or exceeded in any given year.

Water availability through the SWP is intermittent and subject to frequent shortages. As a result, Valley District's "Rules for Service" require that all of its customers have a 100% backup for any amount of water they order from the SWP.

2.4.3 Wastewater



Redlands Wastewater Treatment Plant

There are 14 publicly owned WWTPs located within the Region. Nine of these plants contribute to surface flow of the SAR. Between 1970 and 2012, the total volume of treated wastewater contributions to SAR flows increased from 44,000 AFY to 121,000 AFY, with a peak of 188,000 AF in 2004-2005 (SAR Watermaster 2013).

Three wastewater treatment plants (Redlands, Beaumont, and Yucaipa) discharge to the SAR and its tributaries upstream of the City of San Bernardino, but these discharges generally do not flow continuously to the SAR at "E" Street (SAR Watermaster 2013). Two plants, the Rapid Infiltration and Extraction (RIX)[4] WWTP in the City of Colton and the Rialto WWTP in the City of Rialto, discharge directly to the SAR via a discharge channel at RM 53.46. Wastewater discharges from these plants have hydraulic continuity to the SAR above Riverside Narrows. Combined wastewater discharge from these two plants has risen from around 22,700 AFY in water year 1970-1971 to 44,745 AFY in water year 2011-2021 (SAR Watermaster 2013). The maximum wastewater discharge from these two plants occurred in water year 2000-2001 with 57,753 AF. The combined wastewater discharge is expected to increase to about 59,000 AFY, with both facilities operating at their respective design capacities (Table 2-3).

[4] The RIX WWTP went into operation in 1996 and provides tertiary treatment to all of the effluent from the Colton and San Bernardino Water Reclamation Plants. Prior to 1996, effluent from these plants entered the SAR just above and just below "E" Street, respectively.

Figure 2-3: Creeks and Rivers in the IRWM Region

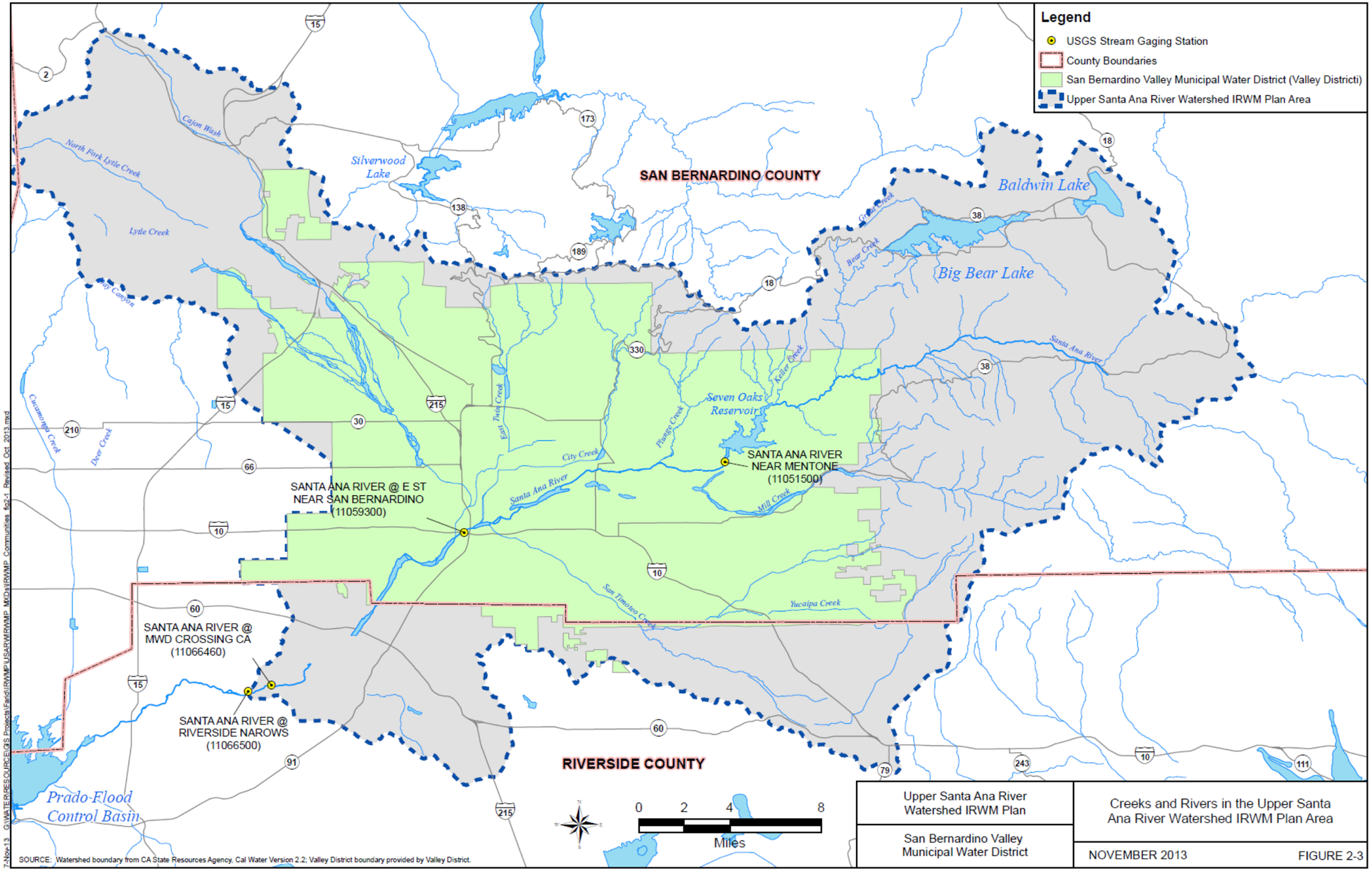


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Table 2-3: Treated Wastewater Discharged Directly to the SAR above Riverside Narrows

Facility	Current Discharge (AFY)	Potential Future Discharge (AFY)
RIX WWTP	37,966[a]	44,900
Rialto WWTP	6,703[a]	14,200
Total Discharges Directly to the SAR in the Region	**44,669**	**59,000**

[a] Based on 2011/2012 water year data reported in the Thirty-Second Annual Report of the SAR Watermaster (SAR Watermaster 2013).

Despite the likelihood that WWTP discharges will increase in the future, not all of the treated water may enter the SAR. Several cities and utilities are in the process of developing plans to recycle water for non-potable uses, which could decrease discharges to the river. For example, the City of San Bernardino is currently evaluating a program to sell approximately 10,000 AFY of tertiary effluent and use 15,000 AFY for recharge in the SBBA (of a total potential discharge of approximately 44,900 AFY) from the RIX facility. Valley District contracted with the City of San Bernardino to ensure that the RIX facility continues to release quantities of treated effluent to the SAR adequate to fulfill Valley District's obligations to provide 15,250 AF of baseflow each year at the Riverside Narrows as called for in the Orange County Judgment.

A number of other agencies have plans to improve recycled water production capacity and implement projects to use recycled water for non-potable uses in the future. Table 2-4 summarizes the proposed water recycling programs in the IRWM Region.

Several agencies have constructed recycled water distribution systems, or are in the process of planning and constructing recycled water distribution systems. These systems are discussed below.

Recycled Water Use in Beaumont-Cherry Valley Water District

The Beaumont-Cherry Valley Water District has constructed a recycled water distribution system throughout its service area which is nearly complete. This distribution system is plumbed to supply recycled water to parkways, medians, parks, schools, and the like. The City and the Beaumont-Cherry Valley Water District are negotiating an agreement in which the City would share its treated wastewater with the Beaumont-Cherry Valley Water District to use for non-potable purposes. In addition, the Beaumont-Cherry Valley Water District is negotiating with YVWD to purchase desalted recycled water for distribution for non-potable purposes.

It is anticipated that the Beaumont-Cherry Valley Water District will come to agreement with one of these entities in the near future and that recycled water will be available in the near future in its service area, freeing up more potable water to meet current and projected demands.

Table 2-4: Upper Santa Ana River Water Agencies Recycling Water Programs

Water Agency	Recycling Plant	Production Capacity	Description
Beaumont-Cherry Valley Water District	City of Beaumont WWTP	4 MGD	Expansion will upgrade production to 8 mgd.
Fontana Water Company	IEUA Regional treatment Plant 4	5.4 MGD	Fontana Water Company is currently constructing infrastructure to deliver recycled water in its service area.
City of Redlands Municipal Utilities and Engineering Department	City of Redlands WWTP	7.2 MGD	Recycled water used for basin recharge, irrigation and industrial purposes.
Rialto, City of & West Valley	City of Rialto Water Treatment Plant	12.0 MGD	Recycled water used for landscape irrigation on the I-10. City plans to expand use of recycled water.
Riverside Public Utilities	Riverside Regional Water Quality Control Plant	40 MGD	Applied for a change in permit to recycle up to 41,400 AFY.
SBMWD	San Bernardino Water Reclamation Plant	0.75 MGD	Construction of a tertiary plant at the existing San Bernardino Water Reclamation Plant to recycle water for landscape irrigation.
Yucaipa Valley Water District	Henry N. Wochholz WWTP	6.7 MGD	New plant at Oak Valley will increase total recycled water availability to 12,000 AFY.
SBMWD, City of Colton, City of Loma Linda, County of San Bernardino, and East Valley Water District	RIX	40 MGD	All the water from the RIX is currently released into the Santa Ana River. The City of San Bernardino is exploring selling part of its portion of the recycled water.

Recycled Water Use in City of Big Bear Lake Department of Water and Power and Big Bear City Community Services District

The BBARWA investigated the feasibility of using advanced treated recycled water from its treatment plant as a supplemental source of artificial surface recharge to the aquifers in the Baldwin and Big Bear Lakes area of western San Bernardino County. BBARWA undertook the investigation to ensure that an adequate supply of safe water would exist to supplement the current potable supplies for the residents and visitors of the Big Bear Valley. This is important because the primary water supply is groundwater, which can be depleted when extraction exceeds natural recharge. Multiple options are being considered that would supply between 500 AFY and 2,000 AFY of recycled water for groundwater recharge. Currently, approximately 2,200 AFY of secondarily treated (recycled) water from th e plant is being exported out of the Big Bear basins to Lucerne Valley via a pipeline. This recycled water has been identified as a potential supplemental supply to artificially recharge the ground water resources in the area. The water would be applied to spreading basins within the Baldwin and Big Bear Lakes area and, thus, would be a benefit by providing an assured supplemental recharge to the aquifers within the basins.

During February 2006, BBARWA certified the Final Environmental Impact Report Prepared for the Recycled Water Master Plan Project and received and filed the Recycled Water Master Plan (Resolution No. R.01-2006). However it should be noted the BBARWA did not file a Notice of Intent following the Certification. Additional work/efforts will be dependent upon the local water agencies identifying a need for the recharge effort.

Recycled Water Use for Fontana Water Company

Fontana Water Company is working cooperatively with the City of Fontana to design and construct the first phase of a recycled water program. Once recycled water becomes available and the necessary infrastructure is constructed, Fontana Water Company will be the purveyor of recycled water to those customers within its service area who can make use of such water. In the first phase of the recycled water program, Fontana Water Company will provide approximately 1,700 AF of recycled water to schools, parks, commercial customers, and Community Facilities Districts' landscape irrigation locations in the southern portion of the City of Fontana. Ultimate build-out in Fontana Water Company's service area will enable Fontana Water Company to provide approximately 6,000 AF of recycled water. Fontana Water Company supports the use of recycled water where its use is appropriate and where recycled water is available.

Recycled Water Use for City of Redlands Municipal Utilities and Engineering Department

Beginning in 2005, most effluent from the City of Redland's WWTP has met Title 22 standards for recycled water. In 2005, approximately 60% of the recycled water was used for industrial purposes, with the remainder used for groundwater recharge. The City of Redlands requires some new commercial development to provide dual plumbing for irrigation systems and to accommodate the use of recycled water as it becomes available. Through the use of financial incentives, the city expects industrial recycled water use to reach 3,000 AFY by 2020.

Recycled Water Use for City of Rialto and West Valley Water District

The City of Rialto is investigating the expansion of its existing tertiary treatment plant and reclaimed water system as a way to supplement the city's water supply. The existing tertiary treatment plant wastewater flows are approximately 7.5 mgd (9,000 AFY). The city currently discharges the majority of its flows to the SAR, but is under no obligation to continue this practice.

The City of Rialto has constructed facilities to provide the California Department of Transportation (Caltrans) with recycled water for 42,000 feet of landscape irrigation for Interstate-10. Caltrans has been using 1.0 mgd of recycled water during the summer months and 0.5 mgd during the winter for an annual total of 850 AF. Currently, there are no other users of the recycled water.

Rialto recently prepared a Wastewater Master Plan that investigated recycled water systems as a way to supplement the city's water supply and reduce the need to purchase water. The plan analyzed the feasibility of converting a currently unused water main that extends several miles up Riverside Avenue and identified potential landscape irrigation customers (San Bernardino Park, Convalescent Hospital, the Senior Center, a baseball field, and a recreation center). A Proposition 50 grant funded the construction of recycled water lines that tie into the unused water main. The city is also investigating the use of package plants in the north end of the city and has identified potential users of recycled water that could result in approximately 2,250 AFY.

All of the wastewater collection and treatment within the West Valley is handled by the City of Rialto. West Valley utilizes non-potable raw SWP water and decanted backwash water from the Oliver P. Roemer Water Filtration Facility to supply the El Rancho Verde Golf Course. Records show that the golf course consumed 1,357 AF in 2003. West Valley identified other additional potential

users of recycled water that could result in approximately 3,700 AF of annual demand. Most of these new users are currently supplied with potable water.

Recycled Water Use for City of Riverside

The City of Riverside Public Works Department operates and maintains the Riverside Regional Water Quality Control Plant (RRWQCP). The daily average wastewater inflow to the RRWQCP is 34 mgd. Construction for an upgrade is currently underway to increase treatment plant capacity to 46 mgd, with the final plant capacity to reach 52 mgd by 2024. The service area of the RRWQCP extends beyond the Riverside Public Utilities service area to include the areas served by Jurupa, Rubidoux, and Edgemont Community Services District. Tertiary-treated effluent (recycled water) is discharged into the SAR.

The SWRCB approved Order WR 2008-0024 in May 2008, in which RRWQCP is required to discharge 25,000 AFY, compared to previous minimum discharge requirements of 15,250 AFY per the 1968 Prado Settlement. This order changed the place of use and purpose of use of a portion of the treated wastewater discharged into the SAR requested through Wastewater Change Petition WW-0045 as follows:

- Change of Place of Use: The Order expanded the place of use to include areas within the City's limits, the City's water service area boundary, and within the boundary of the Jurupa Area Plan to reflect diversion of treated wastewater to recycled water use sites. The point of discharge to the SAR remained the same.
- Change of Purpose of Use: The Order modified the purpose of recycled water use to include municipal, industrial, and agricultural purposes.

Recycled Water Use for San Bernardino Municipal Water Department

The SBMWD operates the San Bernardino Water Reclamation Plant (WRP) serving the cities of San Bernardino, Highland, and Loma Linda, property that was formerly Norton Air Force Base, East Valley, Patton State Hospital, and portions of the unincorporated areas of San Bernardino County. All the wastewater at the San Bernardino WRP is treated to the secondary level. The secondary-treated effluent is sent to the RIX Facility and treated to tertiary levels, then released into the SAR. In mid-2006, the San Bernardino WRP re-activated its tertiary treatment facility and diverts approximately 0.75 mgd or 840 AFY of water from the influent stream to RIX for treatment to Title 22 standards for landscaping applications at the City of San Bernardino Municipal Golf Course and Caltrans located adjacent to Interstate 215. SBMWD estimates that in the future, the reclamation plant's service area will be able to potentially recycle an additional 2.25 mgd or 2,519 AFY of water for use within its service area (SBMWD 2005). Valley District and SBMWD are initiating a master plan study to evaluate the treatment of more secondary effluent at the existing WRP, reducing flows to the RIX.

Recycled Water Use for Yucaipa Valley Water District

YVWD treats recycled water meeting Title 22 requirements through its Henry N. Wochholz Wastewater Treatment Facility. Currently, treated effluent is conveyed through a land outfall and discharged to San Timoteo Creek. Three customers along the existing land outfall are receiving recycled water for irrigation purposes. Dual plumbing is being installed in new developments. Delivery amounts are expected to grow to about 6,700 AF by 2020 or about 24 percent of total agency water demands. Ultimately, YVWD expects to deliver about 8,000 AFY of recycled water (YVWD 2005).

In addition, a new WRP is planned to serve the Oak Valley development. This WRP will provide both wastewater treatment and a source of recycled water for the Oak Valley area. The Yucaipa

Wastewater Master Plan identifies the capacity of the new WRP at 4 mgd required to serve the needs of Oak Valley and other areas of the district from where wastewater could flow by gravity to the new WRP. Based on the projected capacities contained in the Yucaipa Wastewater Master Plan for both treatment plants, there are approximately 11 mgd of wastewater available for recycling (YVWD 2005).

2.4.4 Surface Water Quality

The IRWM Region is within the boundaries of the Santa Ana Regional Water Quality Control Board (SARWQCB). The SARWQCB has divided the mainstem of the SAR into six reaches. Reaches 1 through 6 have reach numbers beginning at the Pacific Ocean and increasing upstream. Reaches 3 through 6 are located in the Upper SAR watershed. These reaches are described in more detail below, from upstream to downstream.

Reach 6 (River Mile (RM) 70.93 and Above)

This reach includes the river upstream of Seven Oaks Dam where flows consist largely of snowmelt and storm runoff and water tends to be of excellent quality (SARWQCB 1995).

Reach 5 (RM 70.93 to RM 57.68)

This reach extends from Seven Oaks Dam to the Bunker Hill Dike (San Jacinto fault), which marks the downstream edge of the Bunker Hill Subbasin. This reach tends to be dry except during storm flows. The lower end of this reach sometimes has rising groundwater and includes the San Timoteo Creek, which flows on an intermittent basis (SARWQCB 1995).

Reach 4 (RM 57.68 to RM 49.00)

This reach includes the SAR from Bunker Hill Dike downstream to Mission Boulevard Bridge in Riverside. The bridge is the upstream limit of rising groundwater resulting from the constriction at Riverside Narrows. Until about 1985, most water in the reach percolated to the local groundwater leaving the lower part of the reach dry. However, flows in the lower end of this reach may now intermittently contain rising groundwater, RIX and Rialto discharge, and flows from San Timoteo Creek.

Reach 3 (RM 49.00 to RM 30.50)

This reach includes the SAR from Mission Boulevard Bridge in Riverside to Prado Dam. At the Riverside Narrows, rising groundwater feeds several small tributaries including Sunnyslope Channel, Tequesquite Arroyo, and Anza Park Drain (SARWQCB 1995).

Water Quality Issues

Water quality within the Upper SAR watershed is addressed through several plans, regulations and guidelines including the *Water Quality Control Plan for the Santa Ana River Basin* (Basin Plan), which includes beneficial use designations and water quality objectives. Those water bodies not meeting the Basin Plan water quality objectives and determined to have beneficial uses are listed on the State's 303(d) list of impaired water bodies, and require a TMDL to be developed. Table 2-5 shows the water bodies in the Upper SAR watershed that are listed on the State's 303(d) list for water quality impairments.

The SARWQCB states that the quality of the SAR is a function of the quantity and quality of the various components of the flows (SARWQCB 1995). Three components make up the flow of the water in the SAR: (1) storm flows, (2) baseflow, and (3) non-tributary flow. The relative proportion of these components varies throughout the year.

The first component, storm flows, results directly from rainfall, usually occurring between the months of December and April. Much of the rainfall and surface water runoff from the storms is captured and percolated into the groundwater basins. The quality of storm flow water is highly variable.

Table 2-5: 303(d) Listed Water Bodies in the Upper SAR

Water Body	Impairments
Big Bear Lake	Mercury, Noxious Aquatic Plants, Nutrients, PCBs
Grout Creek	Nutrients
Knickerbocker Creek	Pathogens
Lytle Creek	Pathogens
Mill Creek, Reach 1	Pathogens
Mill Creek, Reach 2	Pathogens
Mountain Home Creek	Pathogens
Mountain Home Creek, East Fork	Pathogens
Rathbone (Rathbun) Creek	Cadmium, Copper, Nutrients, Sediment/ Siltation
Santa Ana River, Reach 6	Cadmium, Copper, Lead
Santa Ana River, Reach 4	Pathogens
Santa Ana River, Reach 3	Copper (wet weather only), Lead, Pathogens
Summit Creek	Nutrients

Two TMDLs have been adopted to address the above impairments in the Upper SAR.

- TMDLs for Bacterial Indicators in the Middle Santa Ana River Watershed (February 3, 2005): Addresses pathogens in the Santa Ana River, Reach 3.
- Nutrient TMDL for Dry Hydrological Conditions for Big Bear Lake (April 21, 2006): Addresses nutrients in Big Bear Lake.

Baseflow makes up the second component of water flow in the SAR, a large portion coming from the discharge of treated wastewater into the river in addition to rising groundwater in the basin. This baseflow includes the non-point source discharges as well as the uncontrolled and unregulated agricultural and urban runoff. Water quality objectives are set in relation to the baseflow in the river, not to the total flow in the river (see Table 2-6). The intent of these objectives is to protect the river's groundwater recharge beneficial use. Compliance with these objectives is verified by annual measurement of the baseflow quality.

The quantity and quality of baseflow is most consistent during the month of August. At that time of year, the influence of storm flows and non-tributary flows is at a minimum and volumes of rising water and non-point source discharges tend to be low. The major component of baseflow in August is municipal wastewater. For these reasons, this period has been selected by the SARWQCB as the time when baseflow will be measured and its quality determined. To determine whether the water quality and quantity objectives for baseflow in Reach 3 of the SAR are being met, the SARWQCB collects a series of grab and composite samples during August of each year. The results are compared with the continuous monitoring data collected by USGS and data from other sources.

Table 2-6: SAR Basin Surface Water Quality Objectives (WQO)[a]

Inland Surface Streams Upper SAR Basin	Water Quality Objectives milligrams per liter (mg/L)						
	Total Dissolved Solids (TDS)	Hardness ($CaCO_3$)	Sodium (Na)	Chloride (Cl)	Total Inorganic Nitrogen (TIN)[b]	Sulfate (SO_4)	Chemical Oxygen Demand (COD)
Reach 2 - 17th Street in Santa Ana to Prado Dam	650[c]	---	---	---	---	---	---
Reach 3 - Prado Dam to Mission Blvd. - Baseflow	700	350	110	140	10[2]	150	30
Reach 4 - Mission Blvd. in Riverside to San Jacinto Fault	550	---	---	---	10	---	30
Reach 5 - San Jacinto Fault in San Bernardino to Seven Oaks Dam	300	190	30	20	5	60	25
Reach 6 - Seven Oaks Dam to Headwaters	200	100	30	10	1	20	5

Source: SARWQCB 1995

[a] A number of amendments to the WQOs of the Basin Plan have been proposed. However, these proposed amendments do not include changes to the WQOs applicable to Reaches 3 through 6 of the SAR (SARWQCB 2004).

[b] Total nitrogen, filtered sample.

[c] Five-year moving average.

The SARWQCB sets discharge requirements on wastewater discharges, the major source of baseflow in the SAR. Waste discharge requirements are developed on the basis of the limited assimilative capacity of the river. Non-point source discharges, generally from urban runoff and agricultural tailwater, are regulated by requiring compliance with Best Management Practices (BMPs), where appropriate.

The third component of flow in the SAR that influences water quality is characterized by the SARWQCB as non-tributary flow. Non-tributary flow is generally imported water released in the upper basin for recharge in the lower basin (SARWQCB 1995).

Streams on the Santa Ana Basin generally have increasing dissolved minerals as one goes downstream. This effect is due to the fact that water is used, recycled, and used again. The magnitude or amount of TDS concentration rises with each use of water. Groundwater also enters basin streams in some reaches, and their sampling indicated that some of the highest TDS (and in some cases nitrates) may occur at sites on the valley floor that are dominated by rising groundwater (USGS 2006). Nitrate concentrations are higher in Santa Ana Basin streams receiving treated wastewater than in streams without treated wastewater. The principal source of nitrate is fertilizer from historic agricultural operations.

Table 2-7 provides a summary of the available historical surface water quality data for TDS and nitrogen at points along the SAR (USGS 2007).

Table 2-7: Average Historic Surface Water Quality for Locations on the SAR (1990-2001)

Water Quality Constituent	Metropolitan Crossing Gage (Reach 3)[a]	RIX-Rialto Effluent Outfall (Reach 4)[a]	Mentone Gage (Reach 5)[a]
TDS	560[b]	520[c]	230[b]
TDS Basin Plan Objective by Reach	700	550	300
Total Inorganic Nitrogen (TIN)	7.3[b]	8.5[c]	0.3[b]
TIN Basin Plan Objective by Reach	10[d]	10	5

Source: USGS gage data. Data for River Only Mentone Gage begins in October 1998. Data for Riverside Narrows Gage begins in August 1997.

[a] Proposed amendments to the Basin Plan do not include changes to the water quality objectives in Reaches 3 through 6 of the SAR (SARWQCB 2004).

[b] USGS 2004.

[c] The TDS and TIN values assigned for RIX-Rialto are the maximum values that occurred during 2001-2002 as reported in Table 4.4-9 of the SBMWD RIX Facility Recycled Water Sales Program Preliminary Environmental Impact Report (PEIR), March 2003.

[d] Total nitrogen, filtered sample.

Imported Water Quality

Water is imported to the IRWM Region from the Colorado River via the Colorado River Aqueduct (CRA), owned and operated by Metropolitan, and from Northern California via SWP facilities. The TDS level in the CRA water averages approximately 700 mg/L and, during drought years, can increase to above 900 mg/L (Metropolitan and USBR 1999). Salinity projections for wet year conditions show TDS values between 650 and 800 mg/L (Metropolitan and USBR 1999). SWP water is suitable for most beneficial uses due to its low TDS levels of 200 to 300 mg/L (DWR 2003a). However, TDS levels of SWP water can vary due to drought conditions, flood events, reservoir management practices, and salt input from local streams.

In order to protect water quality impacts from imported water, the "Cooperative Agreement to Protect Water Quality and Encourage the Conjunctive Uses of Imported Water in the Santa Ana River Basin" was signed in 2007 by the SARWQCB, and the City of Corona, City of Riverside, Eastern Metropolitan Water District, Elsinore Valley Metropolitan Water District, Orange County Water District, Valley District, San Gorgonio Pass Water Agency, and Western (Recharge Parties).

This order states that long-term conjunctive use of groundwater in the Region requires that the quality of water in groundwater basins in the region be managed to meet the water quality objectives for nitrogen and TDS (collectively, the Salinity Objectives) adopted by the SARWQCB in the 1995 Water Quality Control Plan for the Santa Ana River Basin, as amended in 2004 by R8-2004-0001 (Basin Plan).

The parties that recharge imported water within the Santa Ana Region (Recharging Parties) agree to collect, compile, and analyze the total inorganic nitrogen (TIN) and TDS water quality data necessary to determine whether the intentional recharge of imported water in the region may have a significant adverse impact on compliance with the Salinity Objectives within the Region.

This agreement provides a framework for groundwater recharge of imported water and will facilitate conjunctive management in the region while protecting water quality. A copy of the agreement is presented in Appendix B.

2.5 Groundwater Systems and Management

The IRWM Region lies on the south slope of the Transverse Ranges Geologic Province. The Transverse Ranges are an east-west trending series of steep mountain ranges and valleys. The east-west structure of the Transverse Ranges is oblique to the normal northwest trend of coastal California, hence the name Transverse. The province extends offshore to include San Miguel, Santa Rosa, and Santa Cruz Islands. Its eastern extension, the San Bernardino Mountains, has been displaced to the south along the San Andreas Fault. Intense north-south compression is squeezing the Transverse Ranges. As a result, this is one of the most rapidly rising regions on Earth.

2.5.1 Groundwater Basin Descriptions

DWR Bulletin 118 maps four groundwater basins within the IRWM Region. These basins include the Upper Santa Ana Valley, Bear Valley, Big Meadows Valley, and Seven Oaks Valley groundwater basins. The last three basins are small, with a combined storage capacity of approximately 66,000 AF. The Upper Santa Ana Valley Groundwater Basin consists of eight subbasins:

1. Bunker Hill,
2. Rialto-Colton,
3. Riverside-Arlington,
4. San Timoteo,
5. San Jacinto, Cajon,
6. Yucaipa,
7. Chino, and
8. Cucamonga.

Cucamonga subbasin is entirely outside this Region and will not be discussed in the plan. Very small portions of the Chino and San Jacinto Subbasins are within the Region. Because of the small contribution of these two subbasins in overall groundwater management of the Region, they are not discussed in the IRWM Plan. Portions of the San Timoteo and Riverside-Arlington Subbasins are within the Region, while Bunker Hill, Rialto-Colton, Yucaipa, and Cajon Subbasins are entirely within the Region. Bunker Hill Subbasin along with the locally recognized Lytle Creek Subbasin (shown as overlapping Bunker Hill Subbasin and Rialto-Colton Subbasin in Figure 2-4), form the San Bernardino Basin Area (SBBA). The SBBA is the focus of this IRWM Plan and plays a central role in the water supply for communities within the Region. Brief descriptions of the groundwater basins and subbasins in the Upper SAR watershed are presented below. The storage capacities of the basins and subbasins are listed in Table 2-8 and the locations are shown in Figure 2-4.

Table 2-8: Groundwater Basins in USARW IRWM Region

Bulletin 118-Defined Groundwater Basin	DWR Groundwater Basin Number	Surface Area (acres)	Groundwater Storage Capacity (thousand AF)
Upper Santa Ana Valley:	8-02		
Bunker Hill Subbasin	8-02.06	89,600	5,976
Cajon Subbasin	8-02.05	23,200	—
Rialto-Colton Subbasin	8-02.04	30,100	2,517
Riverside-Arlington Subbasin	8-02.03	58,600	243
San Timoteo Subbasin	8-02.08	73,100	2,010
Yucaipa Subbasin	8-02.07	25,300	808
Bear Valley	8-09	19,600	42
Big Meadows Valley	8-07	14,200	10
Seven Oaks Valley	8-08	4,080	14

In some cases, the locally defined groundwater basins boundaries are different than those described in Bulletin 118, as shown in Figure 2-4. The remainder of the groundwater discussion will be focused on locally recognized basin boundaries.

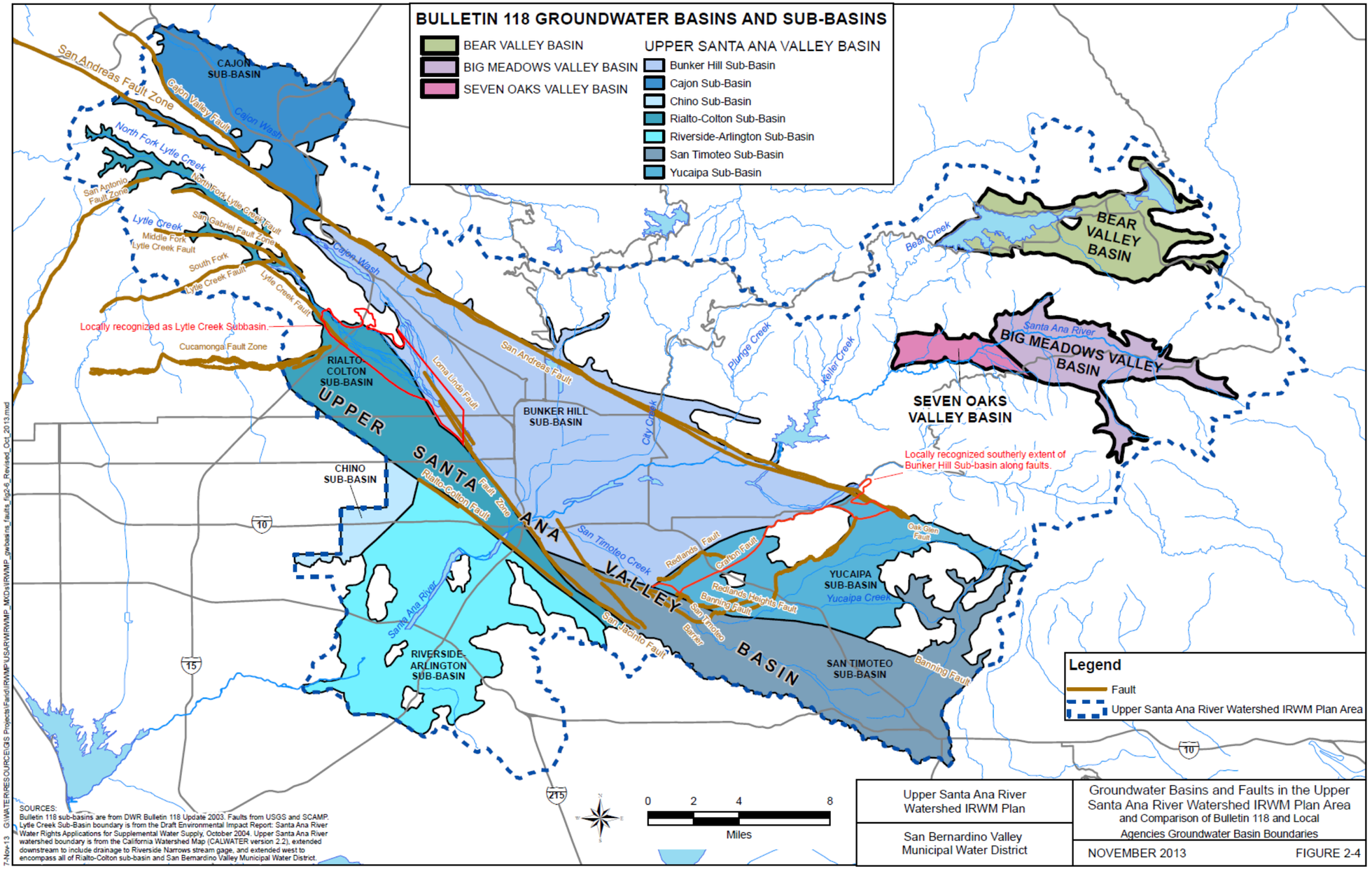
San Bernardino Basin Area

The 1969 Western-San Bernardino Judgment defines an area known as the SBBA. This area is defined as the "…area above Bunker Hill Dike [San Jacinto fault], but excluding certain mountainous regions and the Yucaipa, San Timoteo, Oak Glen and Beaumont Basins" (Figure 2-5). The SBBA traditionally refers to two groundwater subbasins – Bunker Hill and Lytle Creek.

Bunker Hill Subbasin is the largest subbasin in the Upper SAR watershed. The basin is bordered on the northwest by the San Gabriel Mountains and Cucamonga fault zone; on the northeast by the San Bernardino Mountains and San Andreas Fault zone; on the east by the Banning fault and Crafton Hills; and on the south by a low, east-facing escarpment of the San Jacinto fault and the San Timoteo Badlands.

Lytle Creek Subbasin is not mapped in DWR Bulletin 118; however, the subbasin is an integral part of the Upper Santa Ana Valley Groundwater Basin and a major recharge area for both the Bunker Hill and Rialto-Colton subbasins. The Lytle Creek Subbasin is adjoined on the west by the Rialto-Colton subbasin along the Lytle Creek fault, and on the east and southeast by the Bunker Hill subbasin along the Loma Linda fault and Barrier G. The northwestern border of the subbasin is delineated by the San Gabriel Mountains, and runoff from the mountains flows south/southeast through Lytle and Cajon Creeks into the basin. Historically, local agencies have recognized Lytle Creek Subbasin as a distinct groundwater subbasin. Fontana Water Company and Fontana Union assert that the water rights in Lytle Creek are set forth in long-standing court judgments governing the rights of the parties in that basin. The validity and the extent of Fontana Water Company's and Fontana Union's water rights in Lytle Creek Subbasin are disputed and are the subject of a lawsuit currently pending in the Superior Court for the County of San Bernardino entitled San Bernardino Valley Municipal Water District et al. v. San Gabriel Valley Water Co. et al., Case No. CVDS1311085.

Figure 2-4: Groundwater Basins in the IRWM Region



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The Lytle Creek Subbasin contains Lytle Creek, with extensive headwaters in the adjacent mountain areas and a river channel comprised of deep, porous alluvial deposits. Sediments within the Lytle subbasin are, for the most part, highly permeable, and the aquifer has a high specific yield. Water levels in the Lytle Creek subbasin have fluctuated in excess of 200 feet over relatively short periods (less than 5 years) and in select wells (e.g., City of Rialto's City No. 1 well).

The entire SBBA has a surface area of approximately 141 square miles or 90,000 acres and lies between the San Andreas and San Jacinto faults. The numerous faults surrounding the SBBA impede the movement of groundwater and produce springs and a high water table in several areas. The SBBA is uniquely constrained by shallow groundwater levels when the basin is too full, and causes a liquefaction hazard. The Pressure Zone, which is within the SBBA, is described in more detail in this chapter because of high groundwater levels that historically have been of concern in the IRWM Region.

Estimates of the change in groundwater volume, or storage, in the SBBA are made annually by both Valley District and the SBVWCD. The SBBA has an estimated storage capacity of 5,976,000 AF. In general, the far eastern and northwestern portions of the Bunker Hill subbasin show the largest decreases in groundwater elevation, while the rest of the subbasin shows mostly stable or increasing elevations.

Groundwater in the Bunker Hill Subbasin generally flows in a southwesterly direction from the San Bernardino Mountains to the Colton Narrows. The San Jacinto fault generally runs perpendicular to the groundwater flow and acts as a partial barrier resulting in water level differences across the fault. This phenomenon also contributes to the high groundwater located within the City of San Bernardino, commonly referred to as the Pressure Zone (Figure 2-6). In the past, water levels in the Pressure Zone were raised high enough to cause artesian conditions.[5]

For the basin as a whole, there can be wide fluctuations in the average depth to groundwater from year to year, with annual changes as great as almost 40 feet. However, for the most part, annual changes register less than 20 feet (+ or -), with only six years exceeding this range. There are, however, noticeable variations in water movement across subbasins.

Recharge to the Bunker Hill Subbasin historically has resulted from infiltration of runoff from the San Gabriel and San Bernardino Mountains in areas where the upper confining member is absent or from the forebay area north of the pressure zone. The SAR, Mill Creek, and Lytle Creek contribute more than 60% of the total recharge to the groundwater system (USGS 1989). Lesser contributors include Cajon Creek, San Timoteo Creek, and most of the creeks flowing southward out of the San Bernardino Mountains. The subbasin is also replenished by deep percolation of water from precipitation and resulting runoff, percolation from delivered water, and water spread in streambeds and spreading grounds.

Percolation from streams is the major source of recharge in the SBBA. Recharge occurs both in the stream channels and in nearby artificial recharge basins. As a result of the highly permeable river channel deposits and the artificial recharge operations, nearly all of the flow in the smaller streams is recharged to the upper and middle aquifers close to the mountain front.

During floods, the major streams transmit large volumes of water over a short period, resulting in some surface water exiting the basin without contributing to groundwater recharge. Recharge to the SBBA also results from underflow (subsurface inflow), direct infiltration of precipitation, return flow, infiltration from underground sanitary sewer lines and storm drains, and artificial recharge of imported water. Total underflow for 1945 to 1998 averaged about 5,000 AFY (Danskin et. al. 2006). Annual inflow values have declined from a maximum of about 7,000 AF in 1945 to about 4,000 AF

[5] Conditions where groundwater levels rise above the land surface in confined aquifers.

in 1998, predominately as a result of declining water levels in the Yucaipa subbasin. With the exception of unusually wet years, recharge from direct precipitation on the valley floor is minimal. An additional source of recharge is that derived from return flow of water pumped from and used locally within the SBBA, estimated at 30% (Hardt and Hutchinson 1980).

Groundwater discharge from the SBBA occurs from (1) rising water, (2) subsurface outflow, and (3) groundwater extractions. Rising water primarily occurs in the lower reaches of Warm Creek, when groundwater rises above the level of the ground surface or channel bottom and contributes to surface flows. The quantity of groundwater discharge into the creek for the period 1945 to 1992 was determined to be highly variable, with a maximum discharge exceeding 40,000 AFY and a minimum discharge of zero for 16 consecutive years, from 1963 to 1978 (Danskin et al).

Subsurface outflow occurs in the vicinity of the SAR at the Colton Narrows and where Lytle Creek emerges from the San Gabriel Mountains. In the vicinity of the SAR at the Colton Narrows, subsurface outflow was estimated to range from 14,300 to 23,700 AFY for the period 1936 to 1949. Subsurface outflow north of Barrier J was estimated to be between 2,700 and 4,200 AFY during water years 1935 to 1960 (DWR 1970b; Dutcher and Garrett 1963).

While streamflow and subsurface outflow contribute to basin discharge, groundwater extraction is the primary discharge of groundwater from storage. Extracted water is used for agricultural, municipal, and industrial purposes. Most pumping is located near major streams, including the SAR, Lytle Creek, Warm Creek, and East Twin Creek. As the area has become urbanized, the quantity of agricultural pumping has declined considerably, presently accounting for less than 20% of the gross pumping (Danskin et al. n.d.). However, overall pumping has increased in the basin due to increased pumping for municipal and industrial purposes. Prior to 1940, gross pumping in the basin was less than 110,000 AFY, while current pumping has reached as high as about 209,500 AFY (Western-San Bernardino Watermaster 2012).

As the SBBA is the largest groundwater basin in the IRWM Region, a considerable amount of effort has gone into the management of this important resource. The Western-San Bernardino Watermaster provides a careful accounting of the SBBA on an annual basis. If pumping in the area exceeds the safe yield of the basin, then water must be imported to offset the amount exceeding the safe yield. If pumping in the area is below the safe yield, then the basin accrues “credits” in a like amount. The representative entities for the Western Judgment are Valley District and Western. Valley District is solely responsible for providing replenishment of the SBBA if cumulative extractions exceed the cumulative safe yield. The IRWM Plan’s objectives, strategies and projects serve as recommendations that are used by the two Boards of Directors to manage the SBBA.

Figure 2-5: SBBA Basin Area and Faults

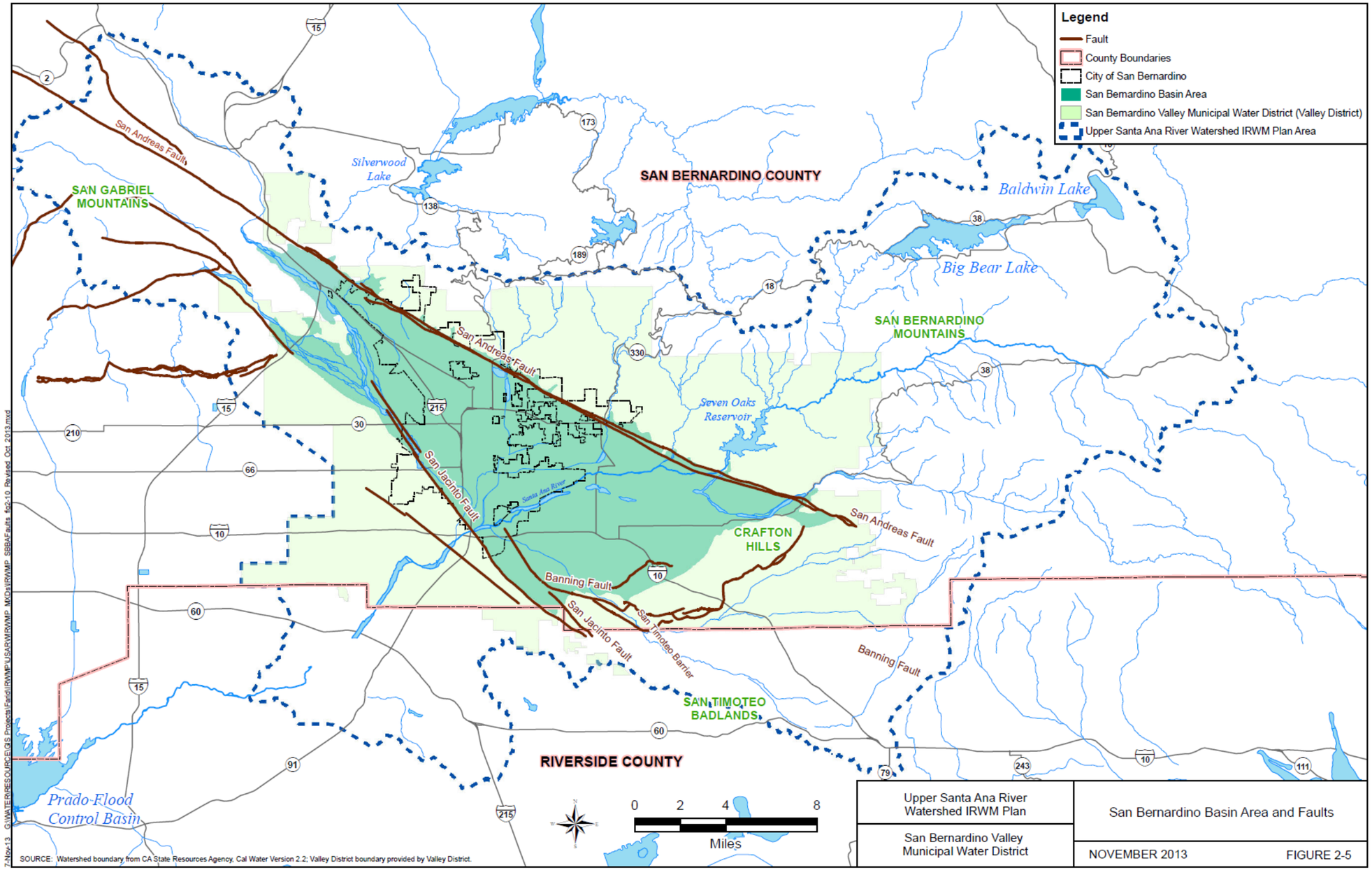
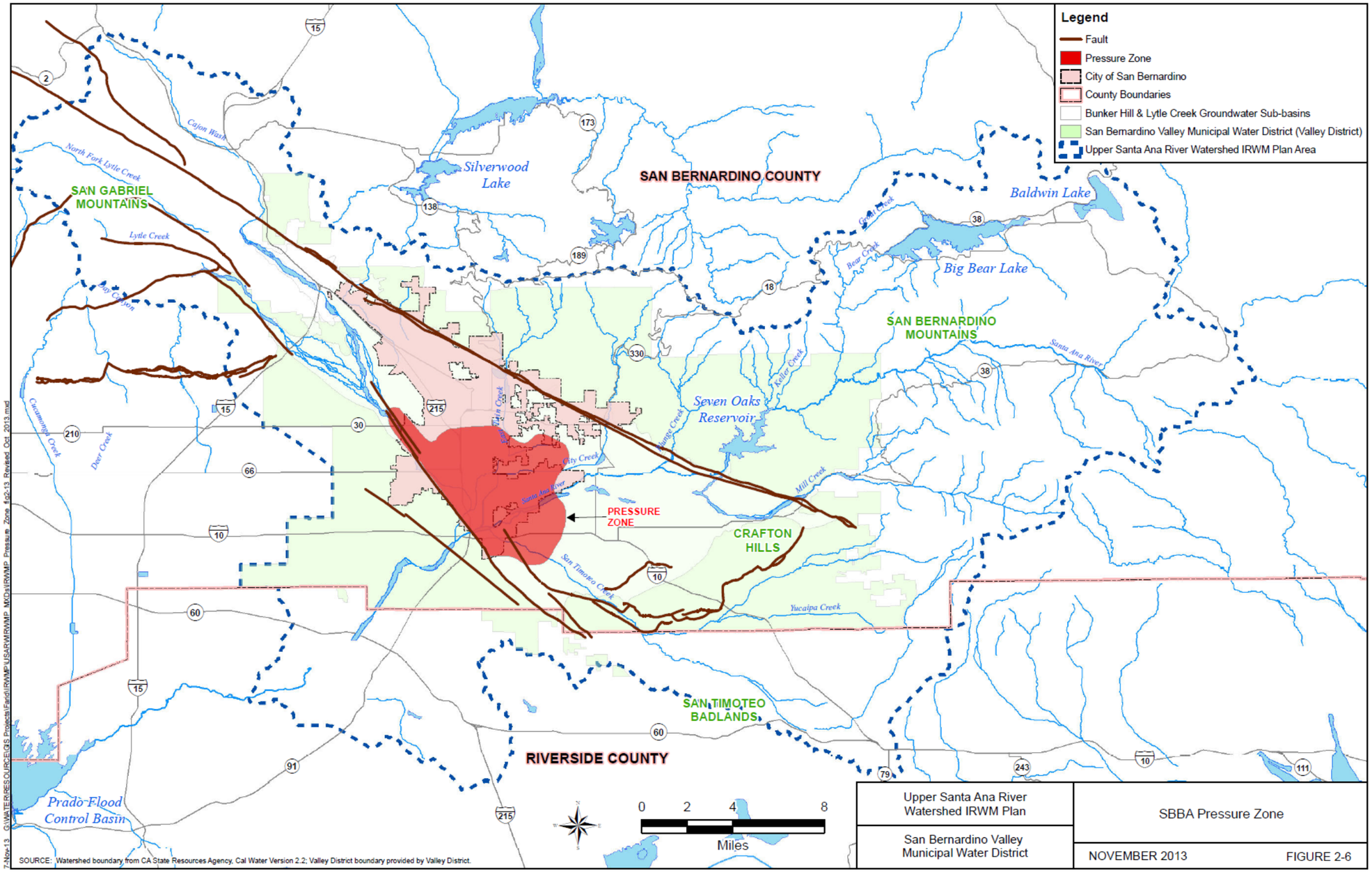


Figure 2-6: SBBA Pressure Zone



Storage of imported water during wet years also helps the Valley District Board of Directors achieve its objective of importing all of Valley District's available SWP entitlement water into southern California. In 2008, the Valley District Board directed its staff to work with the Basin Technical Advisory Committee (BTAC) on a storage program that would store water in wet years for later use during dry years.

A regional water management plan is prepared each year by the BTAC that includes recommendations for basin management and utilization of water resources. This plan is forwarded onto the two agencies that make up the Western-San Bernardino Watermaster for review and approval: Valley District and Western.

Rialto-Colton Subbasin

The Rialto-Colton Subbasin underlies a portion of the upper Santa Ana Valley in southwestern San Bernardino County and northwestern Riverside County. This subbasin is about 10 miles long and varies in width from about 3.5 miles in the northwestern part to about 1.5 miles in the southeastern part. The Rialto-Colton Subbasin is bounded to the north east by Lytle Creek Subbasin. The southwest boundaries of the Rialto-Colton Subbasin are disputed and are the subject of a lawsuit currently pending in the Superior Court for the County of San Bernardino entitled San Bernardino Valley Municipal Water District et al. v. San Gabriel Valley Water Co. et al., Case No. CVDS1311085. The SAR cuts across the southeastern part of the basin in some maps. The subbasin generally drains to the southeast, toward the SAR, the Chino Basin, and the Riverside-Arlington Basin. Warm Creek and Lytle Creek join near the southeastern boundary of the subbasin and flow to meet the SAR near the center of the southeastern part of the subbasin.

The principal recharge areas are Lytle Creek, Reche Canyon in the southeastern part of the subbasin, and the SAR in the south-central part of the subbasin. Lesser amounts of recharge are provided by percolation of precipitation to the valley floor, underflow, and irrigation and septic returns (DWR 1970, Wildermuth 2000). Underflow occurs from fractured basement rock (DWR 1970, Wildermuth 2000) and through the San Jacinto fault in younger SAR deposits at the south end of the subbasin (Dutcher and Garrett 1958) and in the northern reaches of the San Jacinto fault system (Wildermuth 2000). Artificial recharge is also used to maintain basin levels, and will be discussed later in this section.

Cajon Subbasin

The Cajon Subbasin underlies Cajon Valley and Lone Pine Canyon, mostly in Cajon Pass, which is the boundary between the San Gabriel and San Bernardino Mountains. This subbasin is bounded by the Upper Mojave River Valley Groundwater Basin on the north along a surface drainage divide and the Bunker Hill Subbasin of the Upper Santa Ana Valley Groundwater Basin on the south. Cajon and Lone Pine Creeks drain the valley southward as tributaries to the SAR. The San Andreas Fault zone crosses the southern part of the subbasin and cuts up Lone Pine Canyon. Springs are found along the trace of the fault zone indicating it is a barrier to groundwater.

Riverside-Arlington Subbasin

The Riverside-Arlington Subbasin underlies part of the SAR Valley in northwest Riverside County and southwest San Bernardino County. The subbasin includes the Riverside North subbasin which is the portion of the Riverside subbasin in San Bernardino County. The northeast boundary of the Riverside-Arlington Subbasin is formed by the Rialto-Colton fault, and a portion of the northern boundary is a groundwater divide beneath the community of Bloomington. The SAR flows over the northern portion of the subbasin.

The Rialto-Colton fault to the northeast separates the Riverside-Arlington subbasin from the Rialto-Colton subbasin. The fault is a barrier to groundwater flow along its length, especially in its northern reaches (Wildermuth 2000). A groundwater divide in the alluvium separates the Riverside portion from the Arlington portion of the subbasin (DPW 1934). The Riverside-Arlington Subbasin is replenished by infiltration from SAR flow, underflow past the Rialto-Colton fault, intermittent underflow from the Chino subbasin, return irrigation flow, wastewater discharge, and deep percolation of precipitation (DPW 1934, Wildermuth 2000).

San Timoteo Subbasin

The San Timoteo Subbasin underlies Cherry Valley and the City of Beaumont in southwestern San Bernardino and northwestern Riverside Counties. The surface is drained by Little San Gorgonio Creek and San Timoteo Canyon to the SAR. Groundwater is replenished by subsurface inflow and percolation of precipitation, runoff, wastewater discharge, and imported water. Runoff and imported water are delivered to streambeds and spreading grounds for percolation (DWR 1967a, 1970). The San Timoteo Subbasin is not adjudicated, and reliable estimates of total groundwater extractions are not available. However, because water table elevations within the San Timoteo Subbasin have not declined, it's assumed that long-term pumping within the basin is less than long-term average recharge.

Yucaipa Subbasin

The Yucaipa Subbasin underlies the southeast part of San Bernardino Valley. The average annual precipitation ranges from 12 to 28 inches. This part of the San Bernardino Valley is drained by Oak Glen, Wilson, and Yucaipa Creeks south and west into San Timoteo Wash, a tributary to the SAR.

Dominant recharge to the subbasin is from percolation of precipitation and infiltration within the channels of overlying streams, particularly Yucaipa and Oak Glen Creeks; underflow from the fractures within the surrounding bedrock beneath the subbasin; and artificial recharge at spreading grounds. Four artificial recharge facilities with a total capacity of about 56,500 AFY were noted in 1967 (DWR 1967b). By increasing the spreading acreage along Oak Glen Creek by 25 to 50 acres, the capability exists to spread 7,000 to 14,000 AF of surface water annually to recharge the Yucaipa Subbasin (YVWD 2000a).

The Yucaipa Subbasin is not adjudicated; however, a groundwater management plan (AB 3030 Plan) is underway to proscribe collective management of the subbasin. With ample storage, ability to recharge the basin by spreading surface waters and apparent flexibility in managing groundwater levels without subsidence problems, the Yucaipa subbasin could be conjunctively managed both to meet normal annual demands and to meet water resource needs in the event of a drought and curtailment or loss of inconsistent surface water supplies, resulting in a highly reliable water supply. Current goals are to secure agreements to not pump beyond the safe yield of the basin, supplementing supplies with imported surface water.

Bear Valley Groundwater Basin

Bear Valley Groundwater Basin underlies Bear Valley and is bound by the San Bernardino Mountains in southern San Bernardino County. Big Bear Lake, which lies in the western portion of the valley, receives runoff from Grout Creek to the northwest, Van Dusen Canyon to the northeast, Sawmill Canyon and Sand Canyon to the southeast, Knickerbocker and Metcalf Creek to the south, and North Creek to the southwest. Baldwin Lake, which is typically dry, lies in the northeast portion of the valley and receives occasional runoff from Van Dusen Canyon to the northwest and Shay Creek to the south (Geoscience 2001).

A groundwater divide exists between Big Bear Lake and Baldwin Lake in the vicinity of the Big Bear Airport (Geoscience 1999). Faults are mapped, but it is not known if these are barriers to groundwater movement. Recharge of this basin is likely from percolation of precipitation and runoff and underflow from fractured crystalline rocks.

Bear Valley Groundwater Basin is not currently adjudicated, and is not currently in overdraft.

Big Meadows Valley Groundwater Basin

Big Meadows Valley Groundwater Basin underlies a mountain valley in the upper reach of the SAR. The basin is bounded on the west by Seven Oaks Valley Groundwater Basin along the Slide Peak fault (Rogers 1967) and elsewhere by the San Bernardino Mountains. The valley is drained by the SAR. The Slide Peak, Santa Ana, and San Gorgonio faults are mapped as cutting through basin materials (Rogers 1967); however, it is not known whether these faults impede groundwater movement. The Big Meadows Valley Basin Groundwater Basin is not currently adjudicated.

Seven Oaks Valley Groundwater Basin

Seven Oaks Valley Groundwater Basin underlies a mountain valley in the upper reaches of the SAR. The basin is bounded on the east by Big Meadows Valley Groundwater Basin along the Slide Peak fault (Rogers 1967) and elsewhere by the San Bernardino Mountains. The Slide Peak and Santa Ana faults are mapped as cutting through basin materials (Rogers 1967); however, it is not known whether these faults impede groundwater movement. It's assumed that recharge is derived principally from percolation of precipitation and stream flow in the SAR. The Seven Oaks Valley Groundwater Basin is not currently adjudicated.

2.5.2 Recharge Area Programs

Conjunctive use of surface water and groundwater is a long-standing practice in the IRWM Region. Part of the potable water used in the Region is imported from sources in the Sierra and Northern California through the SWP. Several reservoirs are operated primarily for the purposes of storing surface water for domestic and irrigation use, but groundwater basins are also recharged from the outflow of some reservoirs. The concept is to maintain streamflow over a longer period of time than would occur without regulated flow and thus provide for increased recharge of groundwater basins. Most of the larger basins in this Region are managed with many conjunctive use projects being developed to optimize and manage water supply. Numerous groundwater spreading grounds have been developed to recharge the groundwater basins when adequate surface water supply is available. Management of the water level in the SBBA, in general, and the Pressure Zone (see Figure 2-6), in particular, is a focus of the groundwater management of the Region.

Storage Program

Storage of imported water during wet years helps Valley District achieve the objective of importing all of Valley District's available SWP entitlement water into southern California. In 2008, the Valley District Board directed its staff to work with the BTAC on a storage program that would store water in wet years for later use during dry years.

The primary recommended storage location is local groundwater basins. Local groundwater basins are preferable due to the proximity to end users, the significant investment in wells that can be used to extract the water, and the reduction in evaporation associated with storing the water underground. To meet future demands in the Region, groundwater modeling results indicate that Valley District will need to import an average of about 62,000 AFY. During wet years, over 37,000 AF of this water would be stored. In dry years, 50,000 AF would be pumped from storage thereby reducing the Valley District service area's dry year need from the State Water Project (SWP) to 12,000 AF (see Table 3-4 in Chapter 3).

The *2011 State Water Project Final Delivery Reliability Report* predicts that the SWP may deliver as low as 11% of its maximum delivery capability during a future drought. Most recently, the 2014 drought has resulted in deliveries of five percent of SWP allocations. Valley District's ultimate direct delivery need is about 30%, leaving a 19%, or 19,000 AF, deficit in dry years. A storage program is currently being developed that would store enough water be upstream of the Valley District service to make up for this deficit during dry years.

Spreading Grounds



Numerous groundwater spreading grounds have been developed to recharge the groundwater basins.

Artificial recharge in the IRWM Region's groundwater basins has been occurring as early as 1912. Because of the extremely permeable sand and gravel deposits in the Region's groundwater basins, maximum instantaneous recharge rates are high. Based on a recharge efficiency rate of 95%, the total quantity of artificial recharge in the basin averaged about 7,400 AFY from 1972 to 1992. Because of the size of several of the recharge basins and exceptionally permeable material, a larger quantity of water could be imported and recharged along the base of the San Bernardino Mountains, if necessary (i.e., recharge basin capacity and infiltration rates are not currently limiting the amount of imported water that is recharged). Any additional recharge and extraction should be carefully planned and implemented to avoid liquefaction and unacceptable decreases in groundwater levels in the basins.

Numerous existing groundwater recharge facilities (spreading grounds or spreading basins) are located in the SBBA, Rialto-Colton, and Yucaipa Subbasins. The locations of these facilities are shown in Figure 2-7, and selected characteristics are summarized in Table 2-9. Existing turnouts serve each recharge facility, with the exception of the Cactus Spreading and Flood Control Basins, which would be served by the Cactus Basins Pipeline proposed by Valley District.

Table 2-9: Recharge Facilities

Facility Name	Owner or Operator	Conveyance Used to Serve Facility: Turnout Name & Capacity (cfs)	Recharge Facility Characteristics[1]: Active Recharge Facility Area[2] (acres)	Percolation Rate[3] (feet/day)	Monthly Capacity (AF)	Groundwater Basin (and Subbasin) Recharged[4]
SAR Spreading Grounds	SBVWCD	Foothill Pipeline Santa Ana Low Flow (288) Santa Ana Intake (200 Max)	64[4]	3	12,000	SBBA (Bunker Hill)
Devil Canyon and Sweetwater Basins	SBCFCD[5]	Foothill Pipeline Sweetwater (37)	30	1.5	1,350	SBBA (Bunker Hill)
Lytle Basins	Lytle Creek Water Conservation Association	Fontana Power Plant Constructed drainage channel	Variable	1.5	Variable	SBBA (Lytle Creek)
City Creek Spreading Grounds	SBCFCD	Foothill Pipeline City Creek (60)	75	1.5	3,375	SBBA (Bunker Hill)
Patton Basins	SBCFCD	Foothill Pipeline Patton (12)	3	0.3	27	SBBA (Bunker Hill)
Waterman Basins	SBCFCD	Foothill Pipeline Waterman (135)	120	0.5	1800	SBBA (Bunker Hill)
East Twin Creek Spreading Grounds	SBCFCD	Foothill Pipeline Waterman (135)	32	1.5	1440	SBBA (Bunker Hill)
Badger Basins	SBCFCD	Foothill Pipeline Sweetwater (22)	15	0.5	225	SBBA (Bunker Hill)
Mill Creek	SBVWCD	Greenspot Pipeline Mill Creek Spreading (50) Mill Creek Intake (110)	66	3	6,000	SBBA (Bunker Hill)

Facility Name	Owner or Operator	Conveyance Used to Serve Facility Turnout Name & Capacity (cfs)	Recharge Facility Characteristics[1] Active Recharge Facility Area[2] (acres)	Percolation Rate[3] (feet/day)	Monthly Capacity (AF)	Groundwater Basin (and Subbasin) Recharged[4]
Cactus Spreading and Flood Control Basins	SBCFCD	San Gabriel Valley MWD Lytle Pipeline Lower Lytle Creek (55)	46	1.5	2,070	Rialto-Colton
Wilson Basins	SBCFCD	East Branch Extension Wilson Basins (30)	12	1	360	Yucaipa subbasin
Garden Air Creek	Valley District	East Branch Extension Garden Air Creek (16)0	n/a	n/a	n/a	San Timoteo subbasin

[1] Values are from tabulation on map contained in Water Right Application by Valley District and Western to appropriate water from the SAR or by engineering evaluation of spreading grounds.

[2] Recharge facility area is the geographical extent of each basin that can be inundated for recharge.

[3] Estimated percolation rate. This is the estimated rate at which water can percolate into the ground through the basin, expressed in feet per day. The values used have generally been computed from the annual recharge capacity. These rates are typically about one-half of the percolation rates presented by the USGS (1972). The use of the small percolation rates is reasonable in that it would involve longer-term percolation rates that are typically smaller than short-term rates.

[4] Note that there may be flow out of the subbasin or basin identified. For example, a report by Geoscience Support Services, Inc. (1992) estimated that only 36 percent of the water recharged in the upper Lytle Creek area remains in the Lytle Creek subbasin, while most of it flows to the Rialto-Colton subbasin.

[5]Recharge facility area based upon 4/11/03, SBVWCD Report: "SBVWCD Basin Storage Capacity for SAR and MC." Or by estimating using GIS.

2.5.3 Groundwater Quality

Groundwater quality varies among the Region's groundwater basins, particularly in the subbasins of the Upper SAR due to geology and faulting patterns and recharge points, and from anthropogenic sources of contamination.

San Bernardino Basin Area

Groundwater in the SBBA is generally a calcium-bicarbonate type, containing equal amounts (on an equivalent basis) of sodium and calcium in water near the land surface and an increasing predominance of sodium in water from deeper parts of the valley-fill aquifer. A TDS range of 150 to 550 mg/L, with an average of 324 mg/L, is found in public supply wells (DWR 2003). Electrical conductivity (EC) is a measure of total dissolved ionic constituents. EC has been measured within a range of 95 to 2,920 microMhos (µMhos) with an average of 523 µMhos.

Figure 2-7: Spreading Grounds in the IRWM Region

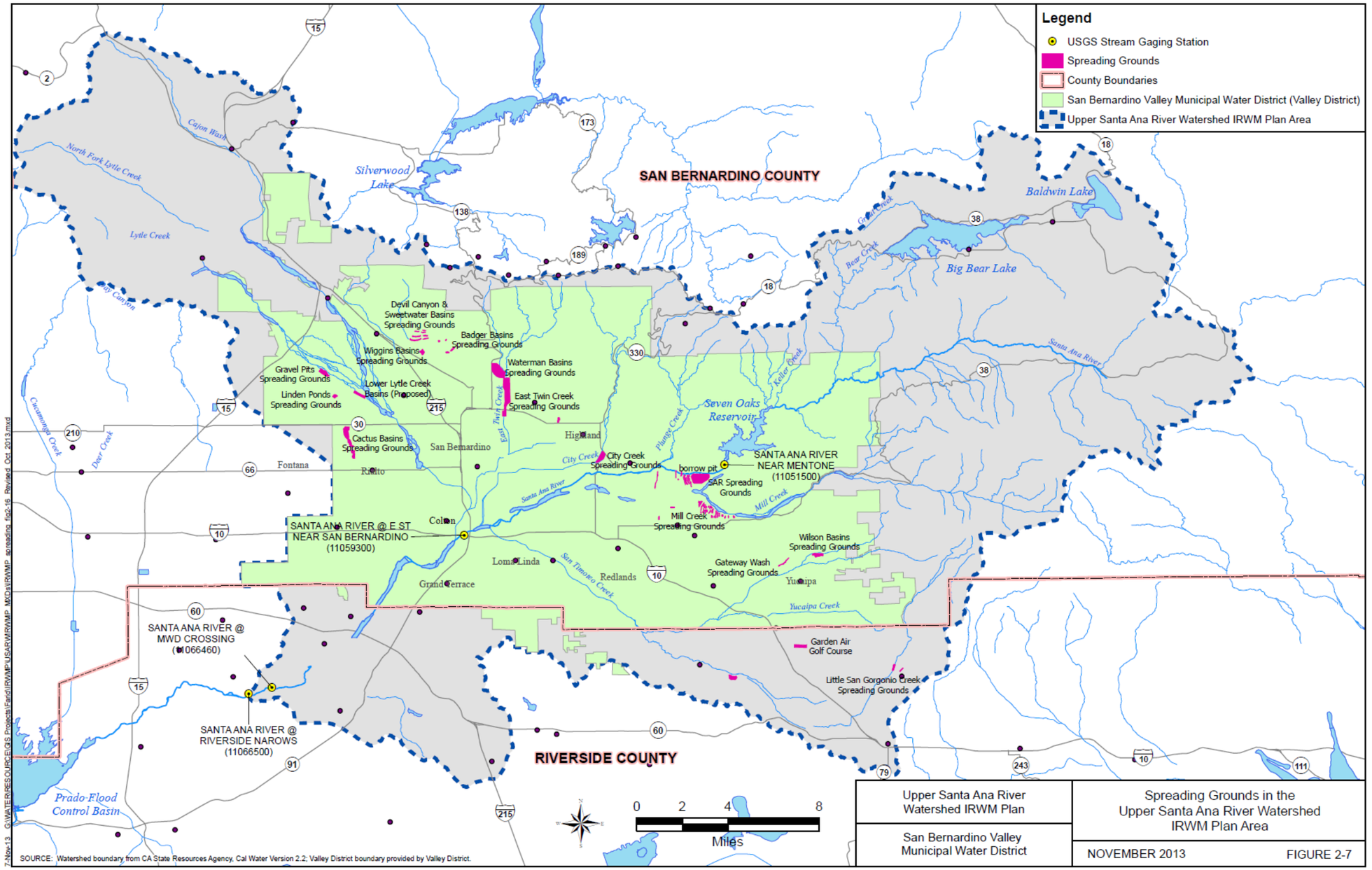
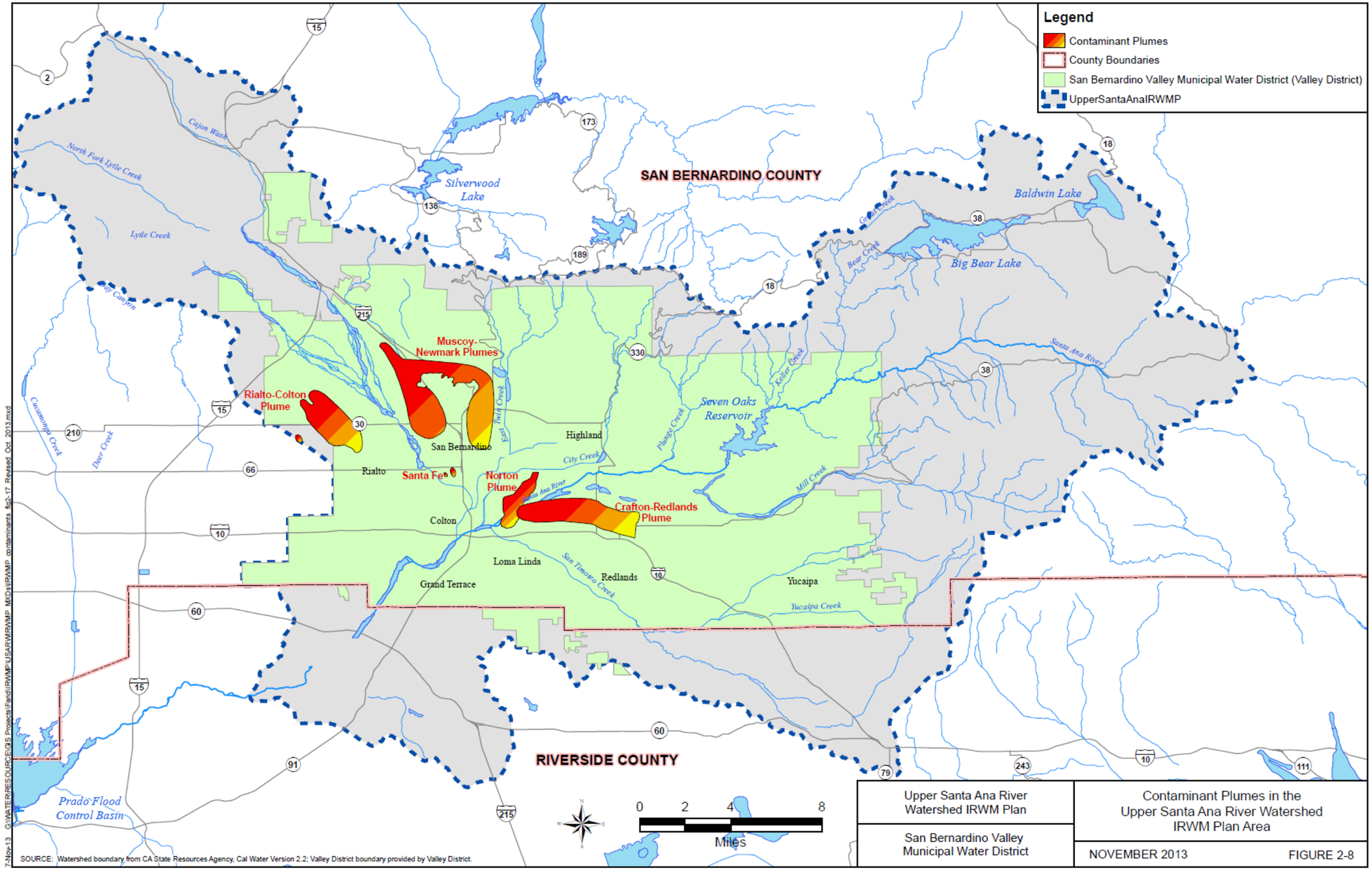


Figure 2-8: Contaminant Plumes in the IRWM Region



The inorganic composition of the groundwater may be affected by geothermal water emanating from faults and fractures in the bedrock surface underlying the aquifer. For example, concentrations of fluoride that exceed the public drinking water standard have limited the use of groundwater extracted near some faults and from deeper parts of the aquifer.

In some public supply well locations in the SBBA, some inorganic compounds (primary and secondary), radiological constituents, nitrates, pesticides, Volatile Organic Compounds (VOCs), Synthetic Organic Compounds (SOCs), and perchlorate were found above the maximum contaminant level (MCL) (see Table 2-10).

Table 2-10: Contaminants in SBBA Wells

Constituent	No. Wells Sampled	No. of Wells with a Concentration Above MCL
Inorganics (primary)	212	13
Radiological	207	34
Nitrates	214	34
Pesticides	211	20
VOCs and SOCs	211	32
Inorganics (secondary)	212	25
Perchlorate	369	156[1]

Source: DWR 2003. and Geoscience

[1] The MCL for Perchlorate is 6ug/l, while the "action level" is 4ug/l.

The SBBA is affected by five major groundwater contaminant plumes (Figure 2-8). Plumes in the basin include (1) the Crafton-Redlands plume, with trichloroethylene (TCE) and lower levels of perchloroethylene (PCE), debromochloropropane (DBCP) and perchlorate; (2) the Norton Air Force Base TCE and PCE plume, stretching 2.5 miles from its source and contaminating 100,000 AF of groundwater; (3 and 4) the Muscoy and Newmark plumes near the Shandon Hills, which are Superfund sites with TCE and PCE; and (5) the Santa Fe plume with PCE, TCE, and 1,2 dichloroethylene (1,2-DCE) contamination.

Within the City of San Bernardino, the Newmark plume and the Muscoy plume consist primarily of PCE. The plumes have impacted San Bernardino water supply wells. Under the federal Superfund Program, the U.S. Environmental Protection Agency (EPA) has implemented cleanup of these plumes, including use of groundwater extraction and treatment using granulated activated carbon. The treated water is then used to supplement the City of San Bernardino's potable water supply. It appears that cleanup efforts will be adequate to protect 32 down-gradient water supply wells (SAWPA 2002). However, groundwater model simulations suggest that containment of the plume will need additional extraction wells that will result in pumping of at least 14,000 AFY (Danskin, et al 2006).

The Norton Air Force Base plume, located just to the southwest of the former installation in the City of San Bernardino, is a major contaminant plume, consisting primarily of TCE and PCE. The plume has impaired 10 wells owned by the City of Riverside and the City of San Bernardino. Cleanup efforts by the Air Force, consisting of soil removal, soil gas extraction, and groundwater treatment, have significantly reduced this plume. The treatment plants now operate in a standby mode (SAWPA 2002).

Two commingled plumes, comprising the Crafton-Redlands plume, have impacted water supply wells for the cities of Riverside, Redlands, and Loma Linda, including Loma Linda University wells.

One plume contains TCE and the other perchlorate; both are in the upper 300 to 400 feet of groundwater. TCE has been measured in water supply wells at over 100 parts per billion (ppb), over 20 times the MCL of 6 ppb. Currently, however, water supply well concentrations are around 7 ppb. Perchlorate is present in water supply wells at concentrations up to 77 ppb.

As required by the SARWQCB, the Lockheed Martin Corporation (Lockheed) has prepared contingency plans to address impacts of the plume on water supply wells. These include blending, treatment, and/or providing alternative water supply sources. The plumes are currently being captured by the City of Riverside's Gage Well Field. Lockheed has installed granular activated carbon treatment units at some of the gage wells to remove TCE and has installed ion exchange units on some of these wells for the removal of perchlorate (SAWPA 2002).

The Santa Fe groundwater plume consists primarily of 1,2-DCE, TCE, and PCE. This plume is currently being monitored (ERM 2001).

Separately from the foregoing remediation efforts, Fontana Water Company currently operates and maintains a groundwater remediation project at its Plant F10 pursuant to a long-term agreement with San Bernardino County, the owner and operator of the Mid Valley Sanitary Landfill and corresponding Clean-Up and Abatement Order issued to San Bernardino County by the RWQCB. The 5,000 gpm treatment plant utilizes liquid phase granular activated carbon to treat for volatile organic compounds including, but not limited to, PCE, TCE, 1,1-DCE, and cis-1,2-DCE. The plant treats and removes those contaminants from groundwater extracted from both the Rialto-Colton and No Man's Land subbasins.

Rialto-Colton Subbasin

In public supply well samples in the Rialto-Colton Subbasin, the average TDS is 264 mg/L, with a range of 163 to 634 mg/L (DWR 2003). Other source samples show an average TDS of 230 mg/L and a range of 201 to 291 mg/L. This is a lower TDS range than the groundwater in the Bunker Hill Subbasin, where TDS levels from 1995 through 1997 ranged as high as 1,000 mg/L along the SAR. The San Jacinto fault markedly affects the groundwater chemistry in the basin. The TDS in groundwater downstream from the San Jacinto fault is greater than that in the surface water found in the Bunker Hill outflow area.

Of 38 public supply wells sampled, two were over the MCL for nitrates, and in three wells, secondary inorganics, VOCs, and SOCs exceeded the MCL (Table 2-11). Most reported nitrate concentrations are less than 22.5 mg/L, with a few samples ranging from 45 to 90 mg/L. Most of the wells sampled did not contain constituents over the MCL concentration.

More than 143 water source wells in Riverside and San Bernardino Counties alone now exceed 4 ppb of perchlorate contamination (California Department of Health Services 2003a). In the Valley District service area, the City of Rialto, the City of Colton, West Valley, and Fontana Water Company have shut down or restricted the use of 20 wells due to perchlorate contamination in the Rialto-Colton Subbasin, where concentrations reach above 4 ppb (SARWQCB 2003b).

Table 2-11: Contaminants in Rialto-Colton Subbasin Wells

Constituent	No. Wells Sampled	No. Wells with a Concentration Above an MCL
Inorganics (primary)	38	0
Radiological	40	0
Nitrates	38	2
Pesticides	40	0
VOCs and SOCs	40	3
Inorganics (secondary)	38	3
Perchlorate	38	7[1]

Source: DWR 2003 and Geoscience.
[1] No MCL has been established for Perchlorate. But "action level" is 4 ug/L

Cajon Subbasin

Groundwater within the Cajon Subbasin has an average TDS content of about 130 mg/L, with a range of 99 to 155 mg/L. The TDS range is lower than in the Riverside, Bunker Hill, and Yucaipa Subbasins, and comparable to the Rialto–Colton Subbasin. Only two public supply wells have been sampled. No exceedance of MCL in drinking water has been reported.

Riverside-Arlington Subbasin

The Riverside-Arlington Subbasin contains groundwater that is calcium or sodium bicarbonate dominated. Of the water sampled from 46 wells, TDS ranged from 210 to 889 mg/L, with an average of 463 mg/L (see Table 2-12) (DWR 2003). From other sources, TDS has been found to range from 320 to 756 mg/L. This is a higher TDS range than in the Rialto–Colton and Bunker Hill Subbasins.

In some of the sampled public supply wells, MCLs were exceeded for inorganics (primary and secondary), radiological constituents, nitrates, pesticides, VOCs, and SOCs. Nitrate (as NO_3) concentrations of greater than 20 mg/L were detected as early as the 1940s, probably due to historical land uses, including citrus production. NO_3 was the constituent found most frequently in the sampled wells, followed by pesticides. Only a few wells were found to have concentrations of primary and secondary inorganic compounds.

Table 2-12: Contaminants in Riverside-Arlington Subbasin Wells

Constituent	No. Wells Sampled	No. Wells with a Concentration Above an MCL
Inorganics (primary)	48	2
Radiological	48	11
Nitrates	51	21
Pesticides	50	19
VOCs and SOCs	50	8
Inorganics (secondary)	38	3

Source: DWR 2003

San Timoteo Subbasin

Groundwater beneath San Timoteo Canyon is dominated by sodium bicarbonate and calcium bicarbonate. Water samples from 24 public supply wells have an average TDS content of approximately 253 mg/L, with a range of 170 to 340 mg/L. The TDS range is lower than in the Riverside, Bunker Hill, and Yucaipa Subbasins and comparable to the Rialto–Colton Subbasin. Out of 27 sampled wells, one well contained secondary inorganics above the MCL (Table 2-13). Otherwise, no contaminants were found (DWR 2003).

Table 2-13: Contaminants in San Timoteo Subbasin Wells

Constituent	No. Wells Sampled	No. Wells with a Concentration Above an MCL
Inorganics (primary)	27	0
Radiological	26	0
Nitrates	28	0
Pesticides	27	0
VOCs and SOCs	27	0
Inorganics (secondary)	27	1

Source: DWR 2003

Yucaipa Subbasin

Most of the recent groundwater samples from the Yucaipa Subbasin indicate a calcium bicarbonate-type groundwater, generally meeting drinking water standards, with little variation across the basin. Groundwater has higher mineral concentrations, but otherwise is similar to the surface water in the area. The average TDS from public supply wells is 322 mg/L, with a range of 200 to 630 mg/L. This is similar to average TDS values of 343 mg/L and 334 mg/L estimated from other sources (DWR 2003).

Table 2-14 contains data from wells sampled for various pollutants (DWR 2003). Some samples contained concentrations above the MCL. This was true for one sample with primary inorganics,

VOCs, and SOCs; four samples with pesticides and secondary inorganics; and 12 samples with nitrates. In the Yucaipa Subbasin, nitrates above the MCL were found more frequently than any other constituent in the sample well set.

Table 2-14: Contaminants in Yucaipa Subbasin Wells

Constituent	No. Wells Sampled	No. Wells with a Concentration Above an MCL
Inorganics (primary)	43	1
Radiological	44	1
Nitrates	46	12
Pesticides	43	4
VOCs and SOCs	44	1
Inorganics (secondary)	43	4

Source: DWR 2003

Bear Valley Groundwater Basin

Groundwater in Bear Valley Groundwater Basin is generally good. The eastern part of the basin is characterized by elevated fluoride. Other constituents of concern include manganese, uranium, and arsenic. Table 2-15 contains data from wells sampled for various pollutants (DWR 2003). These constituents are all naturally occurring, and while have at times resulted in the need for blending projects, have not led to groundwater supply disruption.

Table 2-15: Contaminants in Bear Valley Basin Wells

Constituent	No. Wells Sampled	No. Wells with a Concentration Above an MCL
Inorganics (primary)	33	7
Radiological	37	0
Nitrates	32	0
Pesticides	20	0
VOCs and SOCs	31	0
Inorganics (secondary)	33	5

Source: DWR 2003

Big Meadows Valley Basin

Groundwater in Big Meadows Valley Groundwater Basin is considered to be of good quality. Table 2-16 contains data from wells sampled for various pollutants (DWR 2003), and shows that no wells have exceeded MCLs.

Table 2-16: Contaminants in Big Meadows Valley Wells

Constituent	No. Wells Sampled	No. Wells with a Concentration Above an MCL
Inorganics (primary)	4	0
Radiological	3	0
Nitrates	4	0
Pesticides	3	0
VOCs and SOCs	3	0
Inorganics (secondary)	4	0

Source: DWR 2003

Seven Oaks Valley Basin

Information is not available for the quality of Seven Oaks Valley Basin.

2.6 Ecological and Environmental Resources and Management

The IRWM Region contains unique and valuable ecological and environmental resources. The following section will discuss these resources, and the various management plans used to maintain them.

2.6.1 SAR Corridor

The SAR corridor is defined as the area located within the incised channel of the river. Persistent aquatic and riparian habitats are present immediately downstream of the Seven Oaks Dam plunge pool; in oxbows; in fault zones; in areas with manmade or natural water sources, such as a tributary confluence or a storm drain outfall; in areas with perched water tables; and downstream of river mile (RM) 54.5, where groundwater emerges and flows on the surface of the riverbed (USACE 2000). Much of the habitat within the SAR corridor provides optimal foraging opportunities and several areas provide adequate breeding areas for raptors. Trees found in the riparian woodlands provide perches for foraging over the scrub and grassland.

Except during the winter months of December through March, surface flows in the SAR between Seven Oaks Dam and the San Bernardino International Airport are generally absent, and the riverbed is a braided, dry channel. Riparian habitat from Cuttle Weir to the airport is uncommon and limited to a few patches.

Downstream from the airport, surface flows are more prevalent and large areas of contiguous, well-developed riparian habitat as well as giant reed (*Arundo donax*) infestations along the banks of the SAR are common. Just downstream of the region are Prado Flood Control Basin and Prado Dam. Approximately 2,150 acres of land upstream of Prado Dam are owned by Orange County Water District, the local sponsor for Prado Dam. Within this area are approximately 465 acres of constructed wetlands as well as large areas of mature riparian habitat, naturally occurring wetlands, and deep water habitats.

The vegetation communities discussed above provide wildlife habitat throughout most of the SAR corridor. In general, wildlife within the area is extremely diverse and abundant due to the amount of natural open space and diversity of habitat types from the active river channels to the uppermost flood terraces. While a few wildlife species depend entirely on a single habitat type, the mosaic of all

the vegetative communities within the Region and adjoining areas constitutes a functional ecosystem for a variety of wildlife species.

The SAR contains a variety of riverine conditions and habitat types that support a number of fish species throughout nearly the entire river when winter and spring flows are present. Portions of the SAR, such as the segment that traverses the alluvial fan, are dry during most of the year and, consequently, offer only temporary habitat for fish.

The scrub, woodland, and riparian habitats in the SAR corridor provide foraging and cover habitat for song birds including year-round residents, seasonal residents, and migrating individuals. The overall condition of these communities in the corridor is good and mostly undisturbed. In addition, portions of the SAR and its tributaries provide a perennial water source for birds.

The SAR wash is a state-designated Significant Natural Area. Approximately 27 sensitive plant and animal species are known to occur in the wash. About 760 acres of land belonging to the U.S. Bureau of Land Management (BLM) land within the Upper SAR wash area downstream from the Greenspot Bridge have been designated by BLM as an Area of Critical Environmental Concern (ACEC) because of the presence of the federally listed species, SAR wooly-star, and the San Bernardino kangaroo rat (U.S. Fish and Wildlife Service (USFWS) 1988).

Wildlife corridors link areas of suitable habitat that are separated by unsuitable habitat such as rugged terrain, development, or changes in vegetation. Riverbeds often provide a favorable passageway for wildlife movement to otherwise disconnected areas. Historically, the SAR bed was likely to have supported substantial regional wildlife movement. In addition, the SAR floodplain may have acted as a hub for wildlife movement with many major tributaries converging in a relatively short section of the river. In recent years, however, loss of habitat due to development on the floodplain and surrounding lowlands, as well as construction of Seven Oaks Dam, are likely to have greatly reduced the amount of regional movement through the corridor.

2.6.2 San Bernardino National Forest

The U.S. Forest Service (USFS) has jurisdiction over land uses in the San Bernardino National Forest, which is about 1/3 of the land within the Region. The *San Bernardino National Forest Land and Resource Management Plan of 1988* (USDA Forest Service 1988) directs the management of the forest. Its goal is to provide a management program that reflects a mix of activities that allows both the use and protection of forest resources; fulfills legislative requirements; and addresses local, regional, and national issues.

The San Bernardino National Forest is divided into 15 management areas based on (1) combinations of watersheds that have similar characteristics, (2) wilderness areas, and (3) potential wilderness areas. The Seven Oaks Dam and adjacent areas are located in the Central Section of the San Gorgonio District of the Santa Ana Management Area. Much of the area in this district is classified as the Santa Ana Recreation Area, a designation designed to provide continued protection of the recreation values for which it was established.

The management for this area emphasizes (1) fire management, (2) recreation (dispersed recreation opportunities in the lower SAR area), and (3) other integrated activities (including wildlife management and non-motorized recreation).

San Bernardino National Forest Watershed Management Planning

The upper reaches of the SAR watershed are located in the San Bernardino National Forest. The San Bernardino National Forest is one of 18 national forests in California, collectively referred to as Region 5 of the USFS. In 1981, Region 5 entered into a Management Area Agreement with the

SWRCB pursuant to Clean Water Act Section 208. This agreement designates Region 5 as the Water Quality Management Agency (WQMA) for the San Bernardino National Forest.

As the WQMA, Region 5 is responsible for the proper installation, operation, and maintenance of State- and EPA-approved BMPs in the San Bernardino National Forest. Region 5 is tasked with the responsibility of (1) correcting water quality problems in National Forests; (2) perpetually implementing BMPs; and (3) carrying out identified processes for improving or developing BMPs. In the Upper SAR watershed, the San Bernardino National Forest works conjunctively with the RWQCB on water quality issues such as TMDLs.

Currently, Region 5 is working with the State and RWQCBs to re-certify the Management Area Agreements pursuant to recent changes in State law, such as the new Nonpoint Source Implementation and Enforcement Policy. The process of revising the WQMP and Management Area Agreements will be a joint SWRCB and Region 5 effort. This will be a collaborative effort to develop a plan that identifies, prioritizes, and annually updates site-specific issues. In addition to re-certification of the Management Area Agreements, the San Bernardino National Forest will be implementing its 2006 Forest Plan. The Forest Plan describes the strategic direction at the broad program-level for managing the San Bernardino National Forest, including watershed management initiatives over the next 10 to 15 years. More recently, the United States Forest Service, San Bernardino National Forest completed an invasive species removal National Environmental Policy Act (NEPA) decision for the Mill Creek drainage (2014). Implementation of the decision is moving forward with various partners including Santa Ana Watershed Association (SAWA) and Southern California Edison (SCE). Additional partnerships and funding opportunities are being pursued to reduce the seed source that ultimately works against forest management.

Hazardous Tree Removal Program

It's estimated that approximately 90% of the precipitation in the Region falls on the San Bernardino National Forest. Presently, the forest has approximately 10 times more trees than can be supported by local precipitation. These "extra" trees are the result of development within the forest and the accompanying suppression of wildfire, which naturally thins the forest. These extra trees consume extra water and make the forest more susceptible to fire. When fire does occur, the resulting debris flows down the mountains and fills the SBCFCD debris basins, making them ineffective. Proactively thinning the forest costs a fraction of cleaning up the debris following a wildfire. As a result, Flood Control has begun participating in tree removal in the forest.

The SBCFCD Hazardous Tree Removal Operations Division (HTROD) is given responsibility for the development and contract administration of tree removal and fuels reduction projects on private lands in the vicinity of the San Bernardino National Forest. Tree removal/fuel reduction projects include the felling, removal and disposal of dead, dying, and diseased trees, and any vegetation which creates a hazardous fuel for fires. In addition, the placement and/or installation of products and materials are required as needed, to prevent erosion and/or displacement of sediment.

2.6.3 U.S. Bureau of Land Management Area of Critical Environmental Concern

The BLM designated an ACEC in the SAR in 1994. The purpose of the ACEC designation is to protect and enhance the habitat of federally listed species occurring in the area while providing for the administration of valid existing rights (BLM 1996). The species of concern in the SAR area include the SAR wooly-star, the Slender-Horned spineflower, and the San Bernardino kangaroo rat. The BLM manages over 1,100 acres that are part of the ACEC. Although the establishment of the ACEC is important in regard to conservation of sensitive habitats and species in this area, the administration of valid existing rights supersedes BLMs conservation abilities in this area. Existing rights include a withdrawal of federal lands in this area for water conservation through an act of

Congress, February 20, 1909 (Pub. L. 248). The entire ACEC is included in this withdrawn land and may be available for water conservation measures such as the construction of percolation basins, subject to compliance with the act.

2.6.4 U.S. Army Corps of Engineers Wooly-Star Preserve Area

To protect significant populations of the SAR wooly-star (a federally protected plant species), lands within the corridor of the SAR and portions of the alluvial fan terraces were set aside as a conservation area. The Wooly-Star Preserve Area (WSPA) is a 764-acre area located west of the Greenspot Bridge that crosses the SAR. The WSPA was established by mitigation in the 1990s by the USACE and local sponsors to address impacts related to the construction of Seven Oaks Dam.



The San Bernardino Kangaroo rat is a species of concern in the SAR area. (Photo, courtesy of NPS).

2.6.5 Western Riverside County Multi-Species Habitat Conservation Plan

The Multi-Species Habitat Conservation Plan (MSHCP) is a comprehensive, multi-jurisdictional plan that focuses on the conservation of species and their habitats in western Riverside County. The plan area includes all unincorporated land in Riverside County west of the crest of the San Jacinto Mountains to the Orange County line, as well as the jurisdictional areas of a number of cities. The MSHCP established a conservation area of more than 500,000 acres and focuses on the conservation of 146 species.

2.6.6 Upper Santa Ana River Habitat Conservation Plan

Water agencies, SBCFCD and other stakeholders have begun the process of developing an Upper Santa Ana River Habitat Conservation Plan (HCP) for purposes of acquiring an incidental take permit under Section 10 of the US Endangered Species Act (ESA). It is anticipated that the HCP will also provide the necessary elements for allowing other and similar permits under applicable California Endangered Species Act provisions and will address coordination efforts with California Fish and Wildlife. The area covered by the HCP is anticipated to be the USARW down to Riverside Narrows and will consist of three phases: Phase 1 is scoping, Phase 2 is HCP document development, and Phase 3 is permit processing and plan adoption. When complete, the wildlife agencies will issue permits that will allow the projects in the HCP to proceed.

2.6.7 Wash Plan Habitat Conservation Plan

In 1993, representatives of numerous agencies - including water, mining, flood control, wildlife, and municipal interests - formed a Wash Committee to address mining issues local to the upper SAR wash area. The role of the Committee was subsequently expanded, and it began meeting in 1997 to determine how this area might accommodate all of the important functions represented by the participating agencies.

The Wash Committee seeks to disregard land ownership lines in favor of a "best use" strategy for land use planning. It is anticipated, for example, that significantly disturbed areas are more favorable for mining while undisturbed lands are more favorable for wildlife. This project is expected to produce a Land Management and Habitat Conservation Plan for the wash planning area, covering 4,500 acres ranging from the mouth of the SAR canyon to Alabama Street in the Santa Ana River wash. When complete, the wildlife agencies will issue permits that will allow mining, stormwater capture and other projects to proceed.

2.6.8 Unarmored Threespine Stickleback Shay Pond Fish Refugium

The Unarmored Threespine Stickleback fish is a federally endangered species occurring in the eastern end of Big Bear Valley. The refugium was developed to mitigate probable impacts of groundwater development on public and private lands, and to preserve USFS Special Use Permits issued to water and sewer agencies in Big Bear Valley. Collaboration between the Big Bear City CSD, City of Big Bear Lake Department of Water and Power and the Big Bear Area Regional Wastewater Agency purchased 2.25 acres of private land surrounding a surviving population of the fish, and continually supplies up to 65 acre-feet of water annually to keep the pond filled. The agencies also supply equipment and operators to clean out the pond in order to maintain habitable area for the fish as directed by the U.S. Fish and Wildlife Service.

2.7 Land Use and Agricultural Lands Stewardship

Figure 2-9 presents the 2012 land use within the IRWM Region. The total area of the Region is 552,785 acres, of which 303,790 acres, or about 55%, are covered by the national forest located in the easterly and northerly areas of the Region. Thirty-six percent of agriculture acreage is being replaced by urban areas from 27,780 acres in 2007 to 17,890 acres in 2012. Currently, agriculture only represents a little over 3% of the land use of the Region. Urban areas are about 22% of the Region. The large areas of agricultural land use are south of the SAR.

A number of local land use agencies have approved general plans and specific plans in the Region. These plans are relevant to this IRWM Plan. These local land use planning agencies play a major role in zoning and land use decisions in the Region. The California Government Code contains statutes addressing the subject of the applicability of local land use controls on planning and construction of public water facilities. However, it is generally the practice of Valley District and other local agencies to voluntarily comply with the standards specified in applicable local land use and building code regulations.

2.8 Population

2.8.1 Historic Population and Housing Growth in the Plan Area

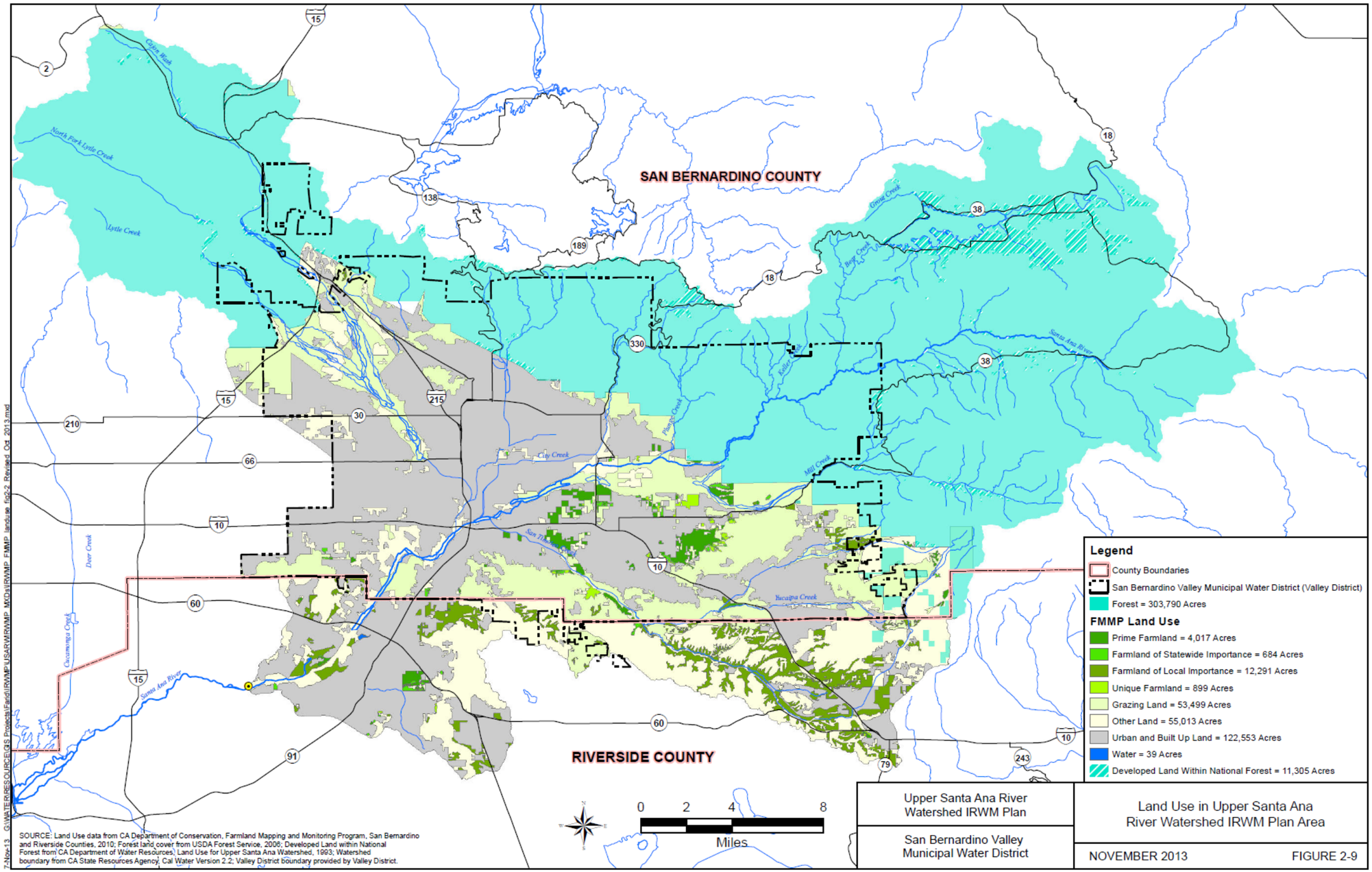
The IRWM Region covers part of the two-county area of San Bernardino and Riverside. Population figures for 2000 and 2010 for Riverside and San Bernardino Counties are presented in Table 2-17. Over the decade of the 2000s, both counties experienced substantial increases in population – 41.9% for Riverside County (with an average rate of 3.6% annually) and over 18.8% for San Bernardino County (1.7% annually). The population of the two-county Region increased by over 973,732 persons or about 29.8% (2.6% annually) during this time period.

Table 2-17: Riverside and San Bernardino County Population, 2000 and 2010

Area	Population		Change: 2000-2010
	2000	2010	Average Annual Percent Increase
Riverside County	1,551,943	2,202,361	3.6%
San Bernardino County	1,718,312	2,041,626	1.7%

Source: U.S. Census 2000 and 2010

Figure 2-9: Land Use in the IRWM Region



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The number of housing units contained in the two counties grew from about 1,186,000 in 2000 to 1,509,205 in 2010. This increase of 27.3% took place at an average annual rate of 2.4%. Population of the Valley District's service area, which covers a majority of the Region, between 2005 and 2010 grew by 16,500 or 2.6 percent, which is about a 0.51% growth annually. Population of the Region increased by 21,200 from 2005 to 2010.

2.8.2 Future Population Growth in the IRWM Region

The Southern California Association of Governments (SCAG) adopted the *2012 Growth Forecast for the Regional Transportation Plan* in April 2012 that includes population projections for 2020 and 2035 for various geographic areas (SCAG data). Table 2-18 presents these data for Riverside and San Bernardino Counties. The counties are projected to experience average annual growth rates of 1.7% and 1.3%, respectively, between 2020 and 2035.

Table 2-18: SCAG County Population Projections, 2020-2035

Area	Population			Change: 2020-2035		
	2008	2020	2035	Number	Total Increase	Average Annual Increase
Riverside	2,128,000	2,592,000	3,324,000	732,000	+28%	+1.7%
San Bernardino	2,016,000	2,268,000	2,750,000	482,000	+21%	+1.3%

Estimates of future populations were developed for this plan using U.S. Census 2010 block-level data. The service area boundaries were overlaid digitally on census maps using a Geographic Information System (GIS). Where census blocks were split by service area boundaries, the proportion of the census block contained in the service area was calculated and used to prorate the population of the particular census block to the respective service area.

Based on 2010 Census data, the current population in the Region is estimated to be 955,866. A population growth rate for the Region was defined based on SCAG's projected populations for 2008, 2020, and 2035 contained in the 2012 Integrated Growth Forecast.

Over the period 2000 to 2025, and using SCAG county-level population projections, the number of residents in the Region is projected to increase by approximately 409,800 (Table 2-19).

Table 2-19: Current and Projected Population for the Region (2010 to 2035)

Service Area	2010[1]	2015	2020	2025	2035
Region[2]	955,866	983,048	1,077,400	1,178,400	1,271,700

[1] Based on 2010 U.S. Census information for the service area populations as of April 2000.

[2] Region includes the San Gorgonio Pass Water Agency.

2.9 Economic Condition and Social and Cultural Composition of the Region

Like most communities in Southern California, the USARW IRWM Region has seen a continued increase in population and change in the economic base as agricultural and vacant land is replaced with residential housing, leading to urban and service sector jobs.



Food preparation and service, healthcare, and distribution and transportation are the fastest growing employment opportunities in the Region.

Much of the population growth of the Region since the 1970s is linked with the economies of Los Angeles and Orange Counties because they are within commuter range, and the housing prices in the Region are more affordable. Also, population growth over the past three decades is attributed to a marked increase in immigration from Mexico, Latin America, and the Pacific Rim.

In spite of the economic recession, which led to a net loss of 118,200 jobs from 2006 to 2012 in the Inland Empire, the last two years have shown signs of economic recovery. Data from 2012 and 2013 shows that 23,025 and 28,300 jobs have been created, respectively. The three major recovering economic sectors in the area include food preparation and service (7,267 jobs), distribution and transportation (5,833 jobs), and health care (4,100 jobs). Other sectors such as management, professional, technical and scientific firms, and amusement services also contributed modestly to job creation. Employment growth in the Inland Empire reached 2.4% in 2012 compared to the State growth of 2.1%, which represent 8.3% of the jobs created in the state.

2.9.1 Disadvantaged Communities

An economically disadvantaged community (DAC) is defined by the State as a community with a median annual household income (MHI) of 80% or less than the State median annual household income. In 2010, the State's annual MHI was $61,632.

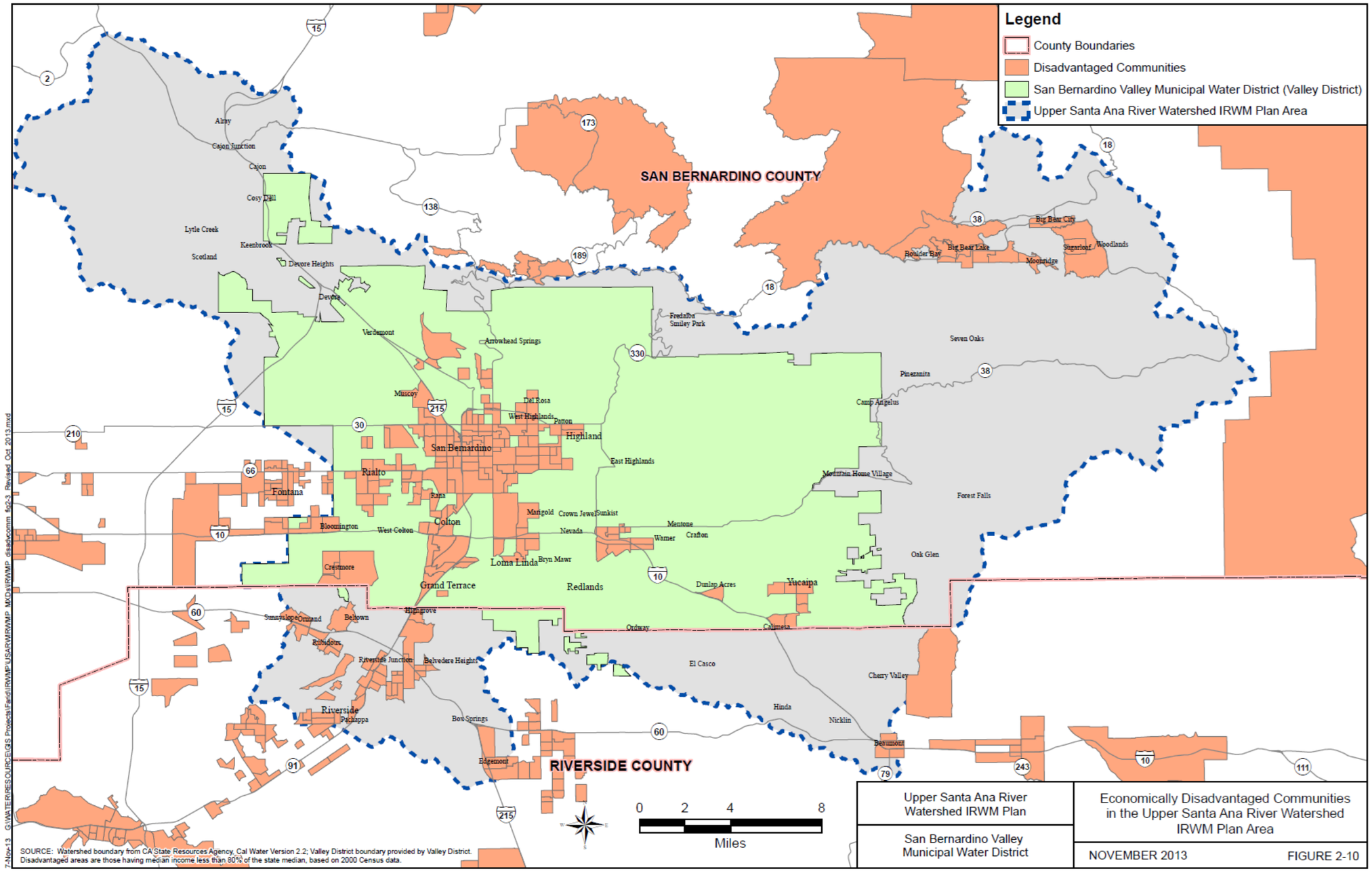
DAC and severely disadvantaged community (SDAC) areas were identified and characterized for the IRWM Region. The analysis used to identify DACs is discussed in more detail in Appendix C. In accordance with DWR guidance, the 2012 IRWM Guidelines[6] state that if household income was below 80% of the MHI for California, equivalent to $48,706, the community is considered a DAC. Additionally, if household income is below $33,325, the tract is mapped and shown as a SDAC based on CDPH guidance website[7]. Population and other demographic data were used from the same source. Figure 2-3 shows the DACs in the Region.

A large number of census tracts in the Region are classified as DAC or SDAC. Nine cluster areas were identified in the Region (see Figure 2-10), while a central area for DACs and SDACs occurs between the east side of the City of San Bernardino and west side of the City of Highland. From this central area, DACs and SDACs are somewhat scattered outward towards Colton, Fontana and Riverside.

The vast majority of DACs and SDACs receive water supplies that meet all state and federal standards for water quality from the utility which serves the area they live in. Areas with the largest concentrations of DAC and SDAC residents have developed programs to assist the DAC members in paying their water related bills while still ensuring their water and wastewater service are meeting all applicable state and federal regulations.

[6] California Department of Water Resources. 2012 Proposition 84 and 1E IRWM Guidelines. 2012 IRWM Guidelines. http://www.water.ca.gov/irwm/grants/guidelines.cfm
[7] California Department of Public Health. http://www.cdph.ca.gov/Pages/Default.aspx

Figure 2-10: DACs in the IRWM Region



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In these areas affordability can be a challenge which providers have special programs to assist residents and special grants may be available to households near the poverty level.

2.9.2 Native American Tribes

Various tribes of Native Americans inhabited the Region in the past. Today, the San Manuel Band of Mission Indians and Morongo Band of Mission Indians are present in the region.

2.10 Climate

2.10.1 Existing Climate

Climate in the IRWM Region is characterized by relatively hot, dry summers and cool winters with intermittent precipitation. The largest portion (73%) of average annual precipitation occurs during December through March and rainless periods of several months are common in the summer. Precipitation is nearly always in the form of rain in the lower elevations and mostly in the form of snow above about 6,000 feet mean sea level (msl) in the San Bernardino Mountains. Mean annual precipitation ranges from about 12 inches in the vicinity of Riverside, to about 20 inches at the base of the San Bernardino Mountains, to more than 35 inches along the crest of the mountains.

The historical record indicates that a period of above-average or below-average precipitation can last more than 30 years, such as the recent dry period that extended from 1947 to 1977. The Region has been experiencing an ongoing drought since 2005.

Three types of storms produce precipitation in the SAR watershed: general winter storms, local storms, and general summer storms. General winter storms usually occur from December through March. They originate over the Pacific Ocean as a result of the interaction between polar Pacific and tropical Pacific air masses and move eastward over the basin. These storms, which often last for several days, reflect orographic (i.e., land elevation) influences and are accompanied by widespread precipitation in the form of rain and, at higher elevations, snow. Local storms cover small areas, but can result in high intensity precipitation for durations of approximately six hours. These storms can occur any time of the year, either as isolated events or as part of a general storm, and those occurring during the winter are generally associated with frontal systems (a "front" is the interface between air masses of different temperatures or densities). General summer storms can occur in the late summer and early fall months in the San Bernardino area, although they are infrequent.



The Region has an annual precipitation that ranges from 12 inches in low areas to 40 inches along the crest of the mountains.

2.10.2 Impacts and Effects of Climate Change

Recent climate change modeling for the SAR watershed (see Appendix E) suggests that a changing climate will have multiple effects on the Region. Adaptation and mitigation measures will be necessary to account for these effects.

Predicted Impacts and Effects of Climate Change

The IRWM Region's currently consistent climate with hot summers and cool winters with mild precipitation, and rain in low elevations with snow in higher elevations would change as temperatures increase, resulting in less precipitation as snow which would affect the snow pack. Increased precipitation as rain would make it more difficult to capture storm flows and store them for drier periods.

The Intergovernmental Panel on Climate Change has vetted and approved 112 climate models based on projections in greenhouse gas emissions and associated changes in precipitation and temperature. These models make use of various greenhouse gas emissions scenarios based on population growth and economic activity. Global climate models used in the study were scaled down to 12 kilometer grids to make them relevant for regional analysis. The down-scaled global climate model projections are produced by internationally recognized climate modeling centers around the world and make use of greenhouse gas emissions scenarios, which include assumptions of projected population growth and economic activity. Projected climate variables, including daily precipitation, minimum temperature, maximum temperature and wind speed were included, as well as historical model simulations over the period from 1950 to 1999. Final products included data sets at key locations for precipitation, temperature, evapotranspiration, April 1st Snow Water Equivalent, and stream flow.

The models show that in the future the number of days over 95°F will increase in multiple locations. The Region chose two cities with different temperature ranges to compare the increase across the entire watershed. The cities of Riverside, and Big Bear were used to see the projections of the number of days that would be above 95°F and the results are shown in Table 2-20.

Table 2-20: Days per Year Exceeding 95°F

City	Historical (°F)	2020 (°F)	2050 (°F)	2070 (°F)
Riverside	43	58	72	82
Big Bear	0	0	2	4

The numbers of high temperature days in Riverside are believed to double between the present and 2070. Similar increases in temperature can be anticipated throughout the inland valleys. These increased temperature levels will increase water demands across the watershed mainly for agricultural and irrigation purposes. The higher temperature days in Big Bear have the potential to affect the forest ecosystem and the snow related recreational activities in the area.

The forest ecosystems in the San Bernardino National Forest are currently on the decline. Alpine and subalpine forests are anticipated to decrease in area by fifty to seventy percent by 2100. It is believed that the increased greenhouse gas emissions calculated above are a primary factor contributing to the decline of these fragile ecosystems.

While high elevation ecosystems decrease, the severity of future floods is likely to increase. The likelihood of a 200 year storm event or longer is anticipated to be significantly higher in 2070. This increases the potential for negative impacts on nearby infrastructure. Furthermore, storms are expected to be more severe but less frequent. Despite these assumptions, the aftermath of a severe storm is highly variable. It is known that there are significant variability's in the results of storm severity.

In addition to changes in ecosystems and storm severity, warmer temperatures may also decrease the annual amount of snow fall and increase the instance of rain in higher elevations. This alteration of precipitation type is likely to cause negative impacts for snow related recreational activities characteristic of the area's ski resorts. From a local standpoint, Big Bear and Snow Valley both lie below 3000 m and are anticipated to experience a decline in snowpack by 2070. Furthermore, it is projected that there will be a decrease in overall winter precipitation of the area by 2070. On a larger scale, the increased temperatures could affect the Sierras in a similar way, threatening the reliability of the SWP.

Addressing Climate Change

Climate change can be addressed in two ways, mitigation and adaptation. Mitigation focuses on reducing the carbon emissions for water treatment and transportation. Decreasing carbon emissions for water treatment and transportation may also result in reduced energy costs for water purveyors. These measures will also help in compliance of the California Global Warming Solutions Act (Assembly Bill 32 or AB 32).

Adaptation addresses operational changes that need to be made in order to accommodate the increasing temperatures, the increased possibility for severe flooding and the decreasing precipitation as snow predicted by the climate models.

Plans for greenhouse gas mitigation focus on the relationship between water and energy. This relationship can be quantified and projections for future trends can be developed. The California Global Warming Solutions Act requires greenhouse gas levels to be reduced to the 1990 level by the year 2020. A Greenhouse Gas Emissions Calculator was used to calculate the current emissions levels and this spreadsheet tool will be used to create predictions for future emissions levels.

The Greenhouse Gas Emissions Calculator was developed as part of a Basin Study of the Santa Ana River in a partnership between SAWPA and Reclamation. The calculator showed that for the Upper SAR watershed, the most appropriate ways to effectively reduce the volume of carbon emissions related to water treatment and meet AB 32 goals would be to reduce imported water usage, and increase local supply usage and water use efficiency.

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3 Water Budget

The water budget for the IRWM Plan compares the supply and demand for the IRWM Region. The water supply and water demand data that comprise the water budget are used in the development of integrated water management strategies that will be used to manage both supplies and demands into the future. The data presented are based upon water demand figures provided by each water agency in the Region. Actual demand figures for each agency may be different based upon the water agency's water right(s) recognized by the State of California.

3.1 Data Sources

The IRWM Plan water budget relies primarily on the 2010 UWMPs for each water supplier within the IRWM Region. Table 3-1 provides a list of the water agencies within the Region and the UWMPs that were used in this analysis. Not all water agencies have completed the 2010 update of their UWMPs, and not all agencies are required to publish a UWMP (agencies that provide water to less than 3,000 connections and less than 3,000 AFY are not required to publish a UWMP). For these agencies, the necessary data for the water budget were obtained from the Western-San Bernardino Watermaster Report. For the purpose of preparing the water demands and supplies, the Region's water agencies were divided into four groups:

1) Non-Plaintiffs (water agencies in San Bernardino County of the Western Judgment (Western Municipal Water District of Riverside County v. East San Bernardino County Water District, Case No. 78426)
2) Plaintiffs of the Western Judgment (water agencies in Riverside County)
3) Water agencies outside the Western Judgment and located in the San Gorgonio Pass Water Agency service area
4) Water agencies outside the Western Judgment and located in the San Bernardino Mountains area

Table 3-1: Data Utilized in the Water Budget

Water Agency	2010 UWMP	Other Documents
Non-Plaintiffs of the Western Judgment		
Colton, City of	✓	
East Valley Water District	✓	
Fontana Water Company	✓	
Loma Linda, City of	✓	
Marygold		Watermaster, 2007 IRWM Plan
Muscoy		Watermaster, 2007 IRWM Plan
Redlands, City of – Municipal Utilities and Engineering Department	✓	
Rialto, City of	✓	
SBMWD	✓	
Terrace Water Company		Watermaster, 2007 IRWM Plan
West Valley	✓	
YVWD[1]	✓	
Other/Private[2]		Watermaster
Plaintiffs of the Western Judgment		
Meeks & Daley Water Company		Watermaster
Riverside Highland Water Company	✓	Watermaster
Riverside Public Utilities	✓	Watermaster
San Gorgonio Pass Water Agency		
Beaumont-Cherry Valley Water District	✓	
Banning, City of[3]	✓	
Cabazon Water District[3]	✓	
South Mesa Water Company	✓	
YVWD[1]	✓	
San Bernardino Mountains Area		
Big Bear City Community Services District		2010 Water Master Plan
City of Big Bear Lake Department of Water and Power	✓	
Big Bear Municipal		2007 IRWM Plan

[1] YVWD overlies the San Gorgonio Pass Water Agency and the Valley District. YVWD includes Western Heights Water Company and Oak Valley.
[2] Includes Devore Water Company, Crafton Water Company, Inland Valley Development Company, Mount Vernon Water Company, Pioneer Mutual Water Company, Pharaoh-Powell Mutual Water Company, Redlands Water Company, Tennessee Water Company, California Portland Cement Company, Corridor Land Company, El Rivino Country Club, and Elsinore Valley Metropolitan Water District.
[3] Agencies outside of the SAR Watershed but inside the San Gorgonio Pass Water Agency service area.

3.2 Applied Water Demands

The applied water demands developed for the water budget are based on the demand projections provided by each individual agency. If demand projections were unavailable, water demand was calculated based on historical demand trends using historical data compiled by the Watermaster. Currently, there are no environmental demands or downstream flow requirements in the IRWM Region. The applied water demands from 2015 to 2035 are summarized in Table 3-2.

Figure 3-1 displays the total projected water demands in the Region, which are expected to increase by about 27% from 392,881 AF in 2015 to 497,606 AF in 2035 (Table 3-2).

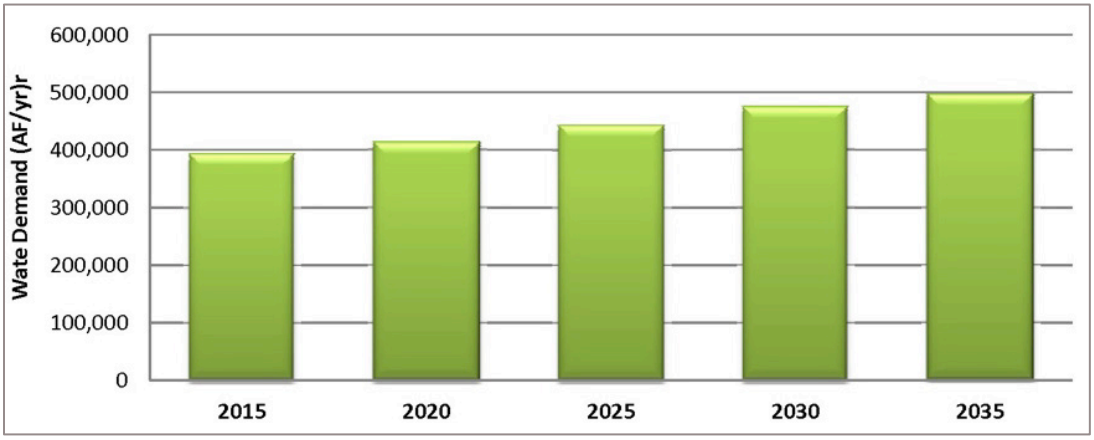
Table 3-2: Future Applied Water Demands in the Region (AFY)

Water Agency	2015	2020	2025	2030	2035
Non-Plaintiffs of the Western Judgment					
Colton, City of	13,010	12,608	13,000	13,770	14,853
East Valley Water District	22,925	24,721	29,235	33,814	38,461
Fontana Water Company[1]	37,519	39,613	42,572	45,532	48,741
Loma Linda, City of	5,811	5,478	5,819	6,181	6,565
Marygold[2]	1,500	1,500	1,500	1,500	1,500
Muscoy[2]	2,100	2,100	2,100	2,100	2,100
Redlands, City of – Municipal Utilities and Engineering Department	30,208	33,030	36,925	39,005	39,005
Rialto, City of	11,676	10,964	10,964	10,964	10,964
SBMWD	51,928	48,839	50,591	52,409	54,296
Terrace Water Company[2]	900	900	900	900	900
West Valley	23,964	27,526	32,143	34,646	38,109
YVWD[3]	18,749	16,699	16,553	19,078	19,152
Other/Private[4]	19,900	19,600	19,300	19,000	19,000
Subtotal	**240,190**	**243,577**	**261,602**	**278,899**	**293,646**
Plaintiffs of the Western Judgment[5]					
Meeks & Daley Water Company	7,800	7,800	7,800	7,800	7,800
Riverside Highland Water Company	5,100	5,945	7,210	7,950	7,950
Riverside Public Utilities	98,050	107,400	111,800	116,600	119,800
Regents of California	500	500	500	500	500
Subtotal	**111,450**	**121,645**	**127,310**	**132,850**	**136,050**
San Gorgonio Pass Area					
Beaumont-Cherry Valley Water District	12,453	13,492	14,947	16,526	18,417
Banning, City of	10,376	10,183	11,243	12,413	13,705
Cabazon Water District[6]	4,000	8,000	12,000	16,000	16,000
South Mesa Water Company	2,740	3,200	3,560	3,900	4,300
YVWD[3]	1,582	1,952	2,552	3,382	4,743
Subtotal	**31,151**	**36,827**	**44,302**	**52,221**	**57,165**

Water Agency	2015	2020	2025	2030	2035
San Bernardino Mountains Area					
Big Bear City Community Services District	1,307	1,464	1,620	1,620	1,620
City of Big Bear Lake Department of Water and Power	2,283	2,364	2,448	2,535	2,625
Big Bear Municipal	6,500	6,500	6,500	6,500	6,500
Subtotal	**10,090**	**10,328**	**10,568**	**10,655**	**10,745**
TOTAL	**392,881**	**412,377**	**443,782**	**474,625**	**497,606**

[1] The demands shown for Fontana Water Company are their projected total demand minus 5,000 AFY of imported water supplies from Inland Empire Utilities Agency. Portions of the supplies will be delivered outside the Region.
[2] Utilized future demand projections from 2007 IRWM Plan.
[3] Includes Western Heights Water Company and Oak Valley and overlies both the San Gorgonio Pass Water Agency and Valley District.
[4] Includes Bear Valley Mutual Water Company, Devore Water Company, Crafton Water Company, Inland Valley Development Company, Mount Vernon Water Company, Pioneer Mutual Water Company, Pharaoh-Powell Mutual Water Company, Redlands Municipal Utilities and Engineering Department, Tennessee Water Company, California Portland Cement Company, Corridor Land Company, El Rivino Country Club, Elsinore Valley Metropolitan Water District, San Gabriel Valley Water Company, and Reche Canyon Mutual Water Company.
5 The demands for the Plaintiffs are their adjusted rights to the SBBA, except for Riverside Public Utilities and Riverside Highland Water Company. Future demand projections for Riverside Public Utilities obtained from 2010 UWMP and include wholesale deliveries.
[6] The demands shown for the Cabazon Water District were obtained from a 2006 letter report to LAFCO. Actual demands are projected to be reduced from those shown based on current demands.

Figure 3-1: Total Water Demands within the Region



3.2.1 Increase in Water Demand in Dry Years

During drought periods, water demands increase due to the increased irrigation demands for agriculture and landscaping. The demands outlined in Table 3-2 and Figure 3-1 represent the average water demands projected by the water agencies. For the purposes of the modeling of the SBBA analysis, water demands were assumed to increase in "critically dry" years by 4% (DWR Bulletin 160-93). Critically dry years were defined to be the driest 20% of years using the SAR annual flows near Mentone from 1962 to 2000. Table 3-3 shows the results of the projected water demands for the SBBA for an average year, multi-year drought, and single-year drought.

Table 3-3: Region-wide Demands for Average and Drought Conditions

	2015	2020	2025	2030	2035
Average Year	392,881	412,377	443,782	474,625	497,606
Multi-Year Drought	408,596	428,873	461,533	493,610	517,510
Single-Year Drought	408,596	428,873	461,533	493,610	517,510

3.2.2 Reduced Demand Due to Conservation

Conservation reduces water demand in ways that are not easily measured. Demand is reduced through changed consumer behaviors and more water-efficient fixtures like ultra-low-flow toilets and showerheads. These savings happen gradually over time as non-conserving fixtures are replaced with newer water-efficient models. The agencies within the IRWM Region implement a prescribed set of urban water conservation BMPs according to the Urban Water Management Planning Act. The current water demands reflect the effect of water conservation projects that are implemented by the purveyors. Demand projections in the UWMPs include estimates of conservation due to the implementation of future water conservation programs.

3.3 Water Supplies

The following sections provide a description of each water supply within the IRWM Region, the projected demands for each supply, and an estimate of the available water supply based on data presented in UWMPs and the Western-San Bernardino Watermaster report. The majority of groundwater basins in the Region are adjudicated, and therefore have pumping restrictions that limit demands. The projected demands on each water supply were based on the UWMPs. The projected water supplies of water purveyors were scaled to meet the projected demand, which was necessary to make a realistic projection of demand on shared water supplies within the Region.

3.3.1 Groundwater and Local Surface Water

San Bernardino Basin Area

The SBBA was adjudicated by the Western Judgment in 1969. The judgment established the natural safe yield of the SBBA to be a total of 232,100 AFY for surface water diversions and groundwater extractions. Surface water is diverted from Mill Creek, Lytle Creek, and the SAR. The average surface water diversions in the SBBA for direct use from 1968 to 2000 were 39,000 AFY. It was determined in the Western Judgment that the Plaintiffs have a 64,862 AFY share of the safe yield, which equates to 27.95% of the safe yield. The Plaintiffs include the City of Riverside (the successor to the Riverside Water Company and the Gage Canal Company), Riverside Highland Water Company, Meeks & Daley Water Company, and Regents of the University of California.

The Non-Plaintiffs' (agencies within San Bernardino County) rights are 167,238 AF, which equates to 72.05% of the safe yield. If the Non-Plaintiff extractions exceed the safe yield of the SBBA, Valley District is obligated to import and recharge a like amount of water into the SBBA. The Western-San Bernardino Watermaster produces an annual report calculating the total extractions and comparing it to the safe yield. If the total extractions are less than the safe yield, there is a groundwater "credit" in the basin. If the total extractions are more than the safe yield, there is a replenishment obligation. Table 3-4 and Figure 3-2 outline the projected increase in demands for the local surface water and groundwater in the SBBA and provide an estimate of how much replenishment will be needed in the future. According to the 2012 Annual Western-San Bernardino

Watermaster Report, Valley District has 114,369 AF of credit accumulated in the SBBA through 2011.

To meet future demands in the IRWM Region, groundwater modeling results indicate that Valley District will need to import an average of about 62,000 AF of water each year. During wet years, over 37,000 acre-feet of this water would be stored. In dry years, 50,000 AF would be pumped from storage thereby reducing the Valley District service area's dry year need from the SWP to 12,000 AF (see Table 3-9 and Table 3-10).

The *2011 State Water Project Final Delivery Reliability Report* predicts that the SWP may deliver as low as 11% of its maximum delivery capability during a future drought, and most recently was reduced to 5% during the 2014 drought. Valley District's ultimate direct delivery need is about 30%, leaving a 19% or 19,000 AF deficit in dry years. A storage program is currently being developed that would store enough water upstream of the Valley District service area to make up for this deficit during dry years.

The SBBA is forecasted to supply over 50% of the future water demand within the Region. Computer models were used to help determine whether the available surface water (local surface water and imported water) and groundwater supplies would meet ultimate demands (2035). Based on the modeling results, if the SWP is as reliable as DWR estimated in 2011 (60%), the SBBA storage can be maintained to meet the 2035 demands (See Section 3.3.2. below for additional information on SWP reliability).

Table 3-4: Projected SBBA Local Surface Water Diversions and Groundwater Extractions (AFY)

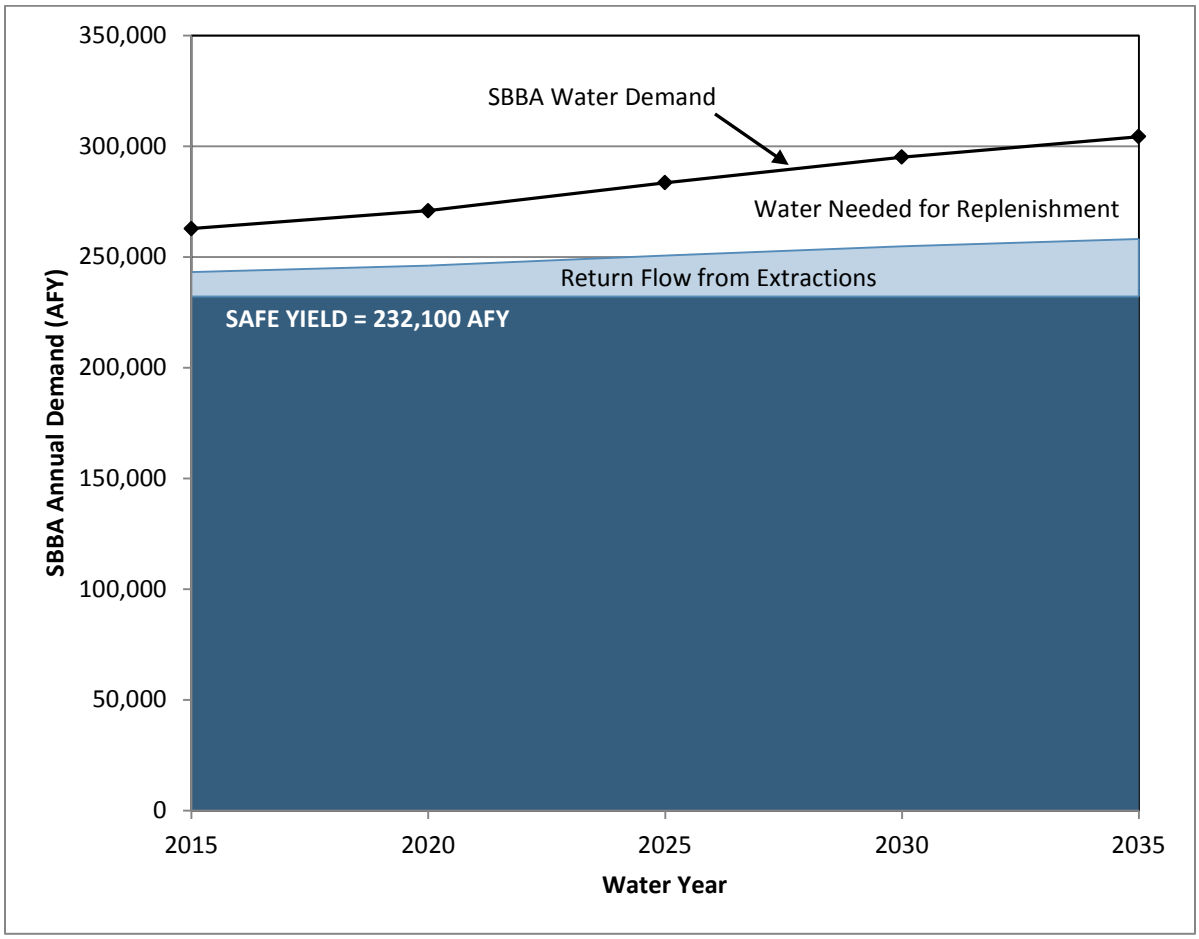
Water Agency	2015	2020	2025	2030	2035
Non-Plaintiffs					
Colton, City of	7,000	6,783	6,994	7,408	7,991
East Valley Water District	26,786	28,312	32,150	36,042	39,992
Fontana Water Company	15,100	15,100	15,100	15,100	15,100
Loma Linda, City of	6,814	6,418	6,814	7,236	7,683
Marygold	1,500	1,500	1,500	1,500	1,500
Muscoy	2,100	2,100	2,100	2,100	2,100
Redlands, City of – Municipal Utilities and Engineering Department	33,209	32,109	33,266	34,549	34,549
Rialto, City of	8,700	8,000	8,000	8,000	8,000
SBMWD	50,233	52,671	54,730	56,866	59,082
Terrace Water Company	900	900	900	900	900
West Valley	17,500	20,500	25,500	28,500	30,500
Other/Private	19,900	19,600	19,300	19,000	19,000
Subtotal	**189,742**	**194,993**	**206,354**	**217,201**	**226,397**
Plaintiffs					
Meeks & Daley Water Company	7,800	7,800	7,800	7,800	7,800
Riverside Highland Water Company	5,100	5,945	7,210	7,950	7,950
Riverside Public Utilities[1]	59,626	61,626	61,626	61,626	61,626
Regents of California	500	500	500	500	500
Subtotal	**73,026**	**75,871**	**77,136**	**77,876**	**77,876**
Total Groundwater and Surface Water Demand	**262,768**	**270,864**	**283,490**	**295,077**	**304,273**
Safe Yield	**232,100**	**232,100**	**232,100**	**232,100**	**232,100**
Extractions above Safe Yield	**30,668**	**38,764**	**51,390**	**62,977**	**72,173**
Return Flow from Extractions above the Safe Yield[2]	**11,040**	**13,955**	**18,500**	**22,672**	**25,982**
Replenishment Obligation[3]	**19,628**	**24,809**	**32,890**	**40,305**	**46,191**

[1] In 2015, the Riverside Public Utilities plans to recharge 2,000 AF of water in the Bunker Hill Basin and by 2020 they plan to recharge 4,000 AF through the Seven Oaks Dam Conservation Project. Production from the Bunker Hill Basin includes 4,200 AF of water owned by Western.

[2]The Western Watermaster assumes a 36 percent return flow from extractions above the safe yield.

[3]The Replenishment Obligation is the Extractions above the Safe Yield minus the Return Flow from the extractions above the Safe Yield.

Figure 3-2: SBBA Water Budget



Rialto-Colton Subbasin

The groundwater extractions in the Rialto-Colton Subbasin are governed by the Rialto Basin Decree and the Western Judgment. The Western Judgment refers to this subbasin as the "Colton Basin Area". Fontana Water Company, City of Rialto, City of Colton, and West Valley Water District are subject to the Rialto Basin Decree, entered on December 22, 1961, by the Superior Court for the County of San Bernardino. Entitlement extractions for any given water year (October 1 to September 30) are affected by groundwater elevations between March and May for three specific "index" wells (Duncan Well, Willow Street Well, and Boyd Well). Under specified conditions, groundwater extractions may be limited. The scope of the limitation is disputed and is the subject of a lawsuit currently pending in the Superior Court for the County of San Bernardino entitle San Bernardino Valley Municipal Water District et al. v. San Gabriel Valley Water Co. et al., Case No. CVDS1311085.

The Western Judgment requires Valley District to maintain the average lowest static water levels in three index wells in the Colton Basin Area and Riverside North Subbasins at 822.04 feet above mean sea level (msl). If the water levels fall below 822.04 feet above msl, Valley District is obligated to recharge the basin with imported water or reduce extractions. Extractions for use in Riverside County are limited to 3,381 AFY.

The safe yield for the Rialto-Colton Subbasin was not defined by the Western Judgment or the Rialto Basin decree. Extractions during the five-year base period of the Western Judgment, 1959 to 1963,

were, on average, 11,731 AFY. Extractions have averaged 18,771 AFY from 1996 to 2011. Since 1971, when the Watermaster reports began, the water levels in the three index wells have never fallen below 822.04 feet. In 2012, the average lowest static level was 835.89 feet above msl for the three index wells. Projected extractions in the Rialto-Colton Subbasin are found in Table 3-5Table 3-4.

Since the safe yield has not been determined for the Rialto-Colton Subbasin, the average extraction from 1996-2005 of 17,300 AFY was used as the available supply from the Rialto-Colton Subbasin in the water budget summary.

Table 3-5: Projected Extractions in the Rialto-Colton Subbasin (AFY)[1]

Water Agencies	2015	2020	2025	2030	2035
Colton, City of	4,515	4,375	4,511	4,778	5,154
Fontana Water Company	7,600	7,600	7,600	7,600	7,600
Rialto, City of	2,000	2,000	2,000	2,000	2,000
Riverside Public Utilities	2,700	2,700	2,700	2,700	2,700
West Valley	4,000	6,000	6,000	6,000	6,000
Reche Canyon Mutual Water Company[2]	72	72	72	72	72
Total	**20,887**	**22,747**	**22,883**	**23,150**	**23,526**
Historical Average (1996-2005)	17,300	17,300	17,300	17,300	17,300

[1] Extractions from the area referred to as "No Man's Land" are not included in the table. However, whether the area referred to as "No Man's Land" is part of the Rialto-Colton Subbasin is disputed and is the subject of a lawsuit currently pending in the Superior Court for the County of San Bernardino entitled San Bernardino Valley Municipal Water District et al. v. San Gabriel Valley Water Co. et al., Case No. CVDS1311085.

[2] Projected extraction by Reche Canyon Mutual Water Company is assumed to equal the average extraction from 1996-2005.

Riverside North Subbasin

The Riverside North Subbasin is the portion of the Riverside Basin in San Bernardino County (part of the larger Riverside-Arlington Subbasin of the Upper Santa Ana Valley). Groundwater extractions in the Riverside North Subbasin are governed by the Western Judgment. Extractions for use in San Bernardino County are unlimited, provided that water levels at three index wells in the Rialto-Colton and Riverside North Subbasins stay above 822.04 feet above msl. Extractions from the Riverside North Subbasin for use in Riverside County are limited to 21,085 AFY.

Total extractions during the five-year base period of the Western Judgment, 1959 to 1963, were, on average, 33,729 AFY. Historically, average static low measurements have never been below 822.04 feet and in 2012 were 835.89 feet above msl. Because the safe yield of the Riverside North Subbasin has not been determined, the average historical extraction from 1996 to 2005 of 30,100 AFY was used as the available supply of the Riverside North Subbasin. Table 3-6 lists the projected demands on the Riverside North Subbasin. If increased production causes the water levels to drop, water agencies would have to either restrict use or Valley District would need to recharge the basin with imported water.

Table 3-6: Projected Extractions in the Riverside North Subbasin (AFY)

Water Agencies	2015	2020	2025	2030	2035
Colton, City of	1,496	1,450	1,495	1,584	1,708
Rialto, City of	1,000	1,000	1,000	1,000	1,000
Riverside Public Utilities	17,000	17,000	17,000	17,000	17,000
West Valley	2,000	2,000	2,500	3,000	4,000
Agencies in Riverside County[1]	4,100	4,100	4,100	4,100	4,100
SBMWD – RIX Overextraction[2]	7,900	7,900	7,900	7,900	7,900
Other/Private[3]	6,000	6,000	6,000	6,000	6,000
TOTAL	**39,496**	**39,450**	**39,995**	**40,584**	**41,708**
Historical Average (1996-2005)	30,100	30,100	30,100	30,100	30,100
Riverside North Aquifer Storage and Recovery Project	3,500	3,500	3,500	3,500	3,500
TOTAL	**33,600**	**33,600**	**33,600**	**33,600**	**33,600**

[1]Agencies in Riverside County have the adjusted right of 21,085 AF in the Riverside North Basin.
[2]The RIX facility overlies the Riverside North Basin. In order to ensure that the secondary effluent applied to ground does not percolate to the groundwater and it is fully recovered, it is necessary that extractions exceed the amount of water applied. At present, this water is discharged from the RIX outfall into the SAR. In the long-term, the over-extractions rates will be approximately 10 percent more than that recharged (Watermaster 2003 pg. 14). Number used is based on the five year average from 2007-2011.
[3]Includes California Portland Cement Company, Corridor Land Company, El Rivino Country Club, and Elsinore Valley Metropolitan Water District.

Yucaipa Subbasin

YVWD estimates the safe yield of the Yucaipa Subbasin to be 10,000 AFY (YVWD 2005 UWMP, pgs. 2-6). YVWD accounts for the majority of the demand on the Yucaipa Subbasin. The City of Redlands Municipal Utilities and Engineering Department and South Mesa Water Company also extract water from the Yucaipa Subbasin to a lesser extent. YVWD demands are projected to increase from 20,331 AF in 2015 to 23,895 AF by 2035. In order to meet demands above the groundwater safe yield, YVWD plans to recycle water and import surface water from Mill Creek, SAR, and the SWP through transfer and exchange agreements with the City of Redlands and Valley District. YVWD's new water treatment plant became operational in 2007. There is potential to increase spreading of water in the Wilson Creek spreading grounds and also to utilize the Oak Glen Creek stream channel for additional recharge. By maximizing the existing spreading grounds and expanding spreading acreage along Oak Glen Creek (25 to 50 acres), the capability exists to spread from 7,000 to 14,000 AF of surface water annually into the Yucaipa Basin. Table 3-7 lists the projected demands on the Yucaipa Subbasin.

Table 3-7: Projected Extractions in the Yucaipa Subbasin (AFY)

Water Agencies	2015	2020	2025	2030	2035
Redlands, City of – Municipal Utilities and Engineering Department	256	248	265	281	281
South Mesa Water Company	1,720	1,720	1,927	1,672	1,816
YVWD	5,829	5,829	5,829	5,829	5,829
TOTAL	**7,805**	**7,797**	**8,021**	**7,782**	**7,926**
Safe Yield	**10,000**	**10,000**	**10,000**	**10,000**	**10,000**

San Gorgonio Pass Area Groundwater Basins

The supplies available in the San Gorgonio Pass Area Groundwater Basins are based on the San Gorgonio Pass Water Agency 2010 UWMP, the City of Banning 2010 UWMP, and the Beaumont-Cherry Valley Water District 2013 UWMP Update. The San Gorgonio Pass Water Agency report concluded that the agency will have to identify, procure, and import additional supplemental water supplies between 2020 and 2025. However, local groundwater supplies will be sufficient until that time, so long as the San Gorgonio Pass Water Agency continues importing water from the SWP as projected in their UWMP. The available groundwater supplies in the San Gorgonio Pass region are found in Table 3-8.

Bear Valley Groundwater Basin

Big Bear Community Services District supplies all its water from groundwater in Big Bear Valley. The City of Big Bear Lake Department of Water and Power also produces groundwater from the Bear Valley groundwater basin. The projected extractions from Bear Valley groundwater basin are found in Table 3-8.

Big Bear Lake

Big Bear Municipal has a contract with Bear Mountain/Snow Summit to sell water from Big Bear Lake for snowmaking. The contract allows the sale of up to 1,300 AFY and no more than 11,000 AF for any 10-year period. Currently, the sales of water for snowmaking have not exceeded 1,000 AFY. The projected extractions from Big Bear Lake are found in Table 3-8.



Water from Big Bear Lake is used for snowmaking at local ski resorts. Most of the melted snow from the resorts flows back into the lake.

No Man's Land

Fontana Water Company and City of Rialto currently and intend to continue to extract water from an area known as "No Man's Land" in the quantities shown in Table 3-8. Water rights in the area, the hydrogeologic nature of this area, as well as the quantities of water produced in this area, are the subject of a lawsuit currently pending in the Superior Court for the County of San Bernardino entitled San Bernardino Valley Municipal Water District et al. v. San Gabriel Valley Water Co. et al., Case No. CVDS1311085.

Riverside South Basin

Riverside Public Utilities extracts water from the Riverside South Basin, which is adjudicated under the Western-San Bernardino Judgment and is located in Riverside County. Riverside Public Utilities plans to extract 15,074 AFY from the basin in 2015, and increase to 32,674 AFY in 2035.

Chino Basin

Fontana Water Company and West Valley extract water from Chino Basin, an adjudicated basin managed by the Chino Basin Watermaster. Fontana Water Company relies on Chino Basin as its primary groundwater source, and plans to extract 5,319 AFY from the basin in 2015, increasing to 12,041 AFY in 2035. West Valley doesn't plan to extract groundwater from the basin until 2020 when it will extract 900 AFY.

Table 3-8: Projected Extractions of Other Groundwater and Surface Water Supplies (AFY)

Water Agencies	2015	2020	2025	2030	2035
San Gorgonio Pass Area Groundwater Basins					
Edgar Canyon Basin	1,867	2,260	2,260	2,260	2,260
Beaumont Basin	5,566	6,561	6,626	6,446	6,367
Banning Storage Unit	1,130	1,130	1,130	1,130	1,130
Banning Canyon	4,070	4,070	4,070	4,070	4,070
Cabazon Storage Unit	4,585	5,805	5,248	4,716	5,012
San Timoteo Groundwater Basin	230	230	230	230	230
Singleton Basin	600	600	600	600	600
Surface Runoff from Edgar Canyon	2,000	3,000	3,000	3,000	3,000
Return Flows	**429**	**438**	**448**	**458**	**468**
Sub-Total	**22,437**	**26,054**	**25,572**	**24,870**	**25,097**
Bear Valley Groundwater Basin					
City of Big Bear Lake Department of Water and Power	2,228	2,307	2,389	2,474	2,562
Big Bear City Community Services District	1,307	1,464	1,620	1,620	1,620
Sub-Total	**3,535**	**3,771**	**4,009**	**4,094**	**4,182**
Big Bear Lake					
Big Bear Municipal[1]	1,000	1,000	1,000	1,000	1,000
No Man's Land					
Fontana Water Company	6,000	6,000	6,000	6,000	6,000
Rialto, City of	1,000	1,000	1,000	1,000	1,000
Sub-Total	**7,000**	**7,000**	**7,000**	**7,000**	**7,000**
Riverside South					
Riverside Public Utilities[2]	15,074	20,274	24,674	29,474	32,674
Chino Basin					
Fontana Water Company	5,319	6,413	8,372	10,332	12,041
West Valley	0	900	900	900	900
Sub-Total	**5,319**	**7,313**	**9,272**	**11,232**	**12,941**
TOTAL PROJECTED SUPPLIES	**54,365**	**65,412**	**71,527**	**77,670**	**82,894**

[1] Surface water from Big Bear Lake used for snow making.

[2] Riverside Public Utilities plans to augment groundwater supplies from Riverside South by constructing a recharge facility at Pellissier Ranch. The Pellissier Ranch Aquifer Storage and Recovery project includes 6,000 AFY of groundwater and stormwater recharge, and 4,000 AFY of recycled water recharge.

3.3.2 Imported Water

SWP water is delivered from Northern California to Valley District; the amount of water that is entitled to each State Water Contractor is listed in Table A of the SWP's water supply contracts, which is commonly referred to as "Table A" allotments. Valley District has the fifth largest SWP contract out of all State Water Contractors, with a maximum Table A amount of 102,600 AFY through 2035. To help assess the reliability of SWP supplies, DWR publishes a biannual State Water Project Delivery Reliability Report. In this report, various hydrologic studies are conducted on the expected deliveries (expressed as percentage of entitlement) that would be available during different hydrologic years from 1922 to 2003. The *2011 State Water Project Delivery Reliability Report* contains many of the same operational challenges as the 2009 report, including pumping restrictions as outlined in the 2008 and 2009 federal biological opinions and the effects of climate

change on supplies. The estimates in the 2011 report for water deliveries for Table A water supply deliveries are not significantly different from projections in the 2009 report, but have decreased since the 2005 report. The 2011 report estimated that, on average, 61% of the Table A SWP amounts would be delivered based on 2011 existing conditions and 60% based on 2031 future conditions. Therefore, Valley District's Table A amount of 102,600 AF is estimated to be 60% reliable, or, on average, Valley District could receive 61,440 AFY of the Table A amount in the future.

The water agencies in the Valley District service area forecast approximately 30,622 AFY for SWP deliveries in 2035, outlined in Table 3-9, based upon UWMP projections. This includes direct deliveries to Valley District's retail agencies, and an average of 6,500 AFY (65,000 AF in any ten year period) that is sold to Big Bear Municipal for distribution to Bear Valley Mutual "in-lieu" of releases from Big Bear Lake.

Valley District is estimated to need approximately 46,191 AFY to meet the replenishment obligations in the SBBA with the projected demands in 2035 (Table 3-4). Replenishment may also be required for the Colton Basin Area and the Riverside North Basins depending on the future water levels. Valley District would have 30,818 AFY of available SWP water to use for replenishment from its Table A amount after the SWP deliveries in 2035.

The other primary state water contractor in the IRWM Region is the San Gorgonio Pass Water Agency. The San Gorgonio Pass Water Agency has a contracted Table A amount of 17,300 AFY, but is currently limited to importing approximately 11,000 AFY until the next phase of the East Branch Extension is completed. The need for SWP water in the San Gorgonio Pass to meet the projected demands is higher than the current San Gorgonio Pass Water Agency Table A amount. Table 3-9 summarizes the forecasted demand for SWP water in the San Gorgonio Pass area and Table 3-10 is the available SWP supplies to the Region based on State Water Contractors' Table A amounts. Crestline-Lake Arrowhead Water Agency is outside of the Region but provides approximately 60 AFY water to the City of Big Bear Lake Department of Water and Power.

Table 3-9: Projected Deliveries of State Water Project (AFY) to the Region

Water Agencies	2015	2020	2025	2030	2035
SBVMWD					
Direct Deliveries[1]	21,683	20,079	20,749	24,055	24,122
Big Bear Municipal[2]	6,500	6,500	6,500	6,500	6,500
Subtotal	**28,183**	**26,579**	**27,249**	**30,555**	**30,622**
Water for Recharge/Groundwater Pumping[3]	34,281	35,885	35,215	30,885	30,818
SWP Deliveries	**62,464**	**62,464**	**62,464**	**61,440**	**61,440**
San Gorgonio Pass Water Agency					
SWP Deliveries	**10,553**	**10,553**	**10,553**	**10,380**	**10,380**
Crestline-Lake Arrowhead Water Agency					
SWP Deliveries	**55**	**57**	**59**	**61**	**63**
Total Deliveries	**73,017**	**73,017**	**73,017**	**71,940**	**71,940**

[1] Demands for imported water for East Valley Water District, City of Redlands Municipal Utilities and Engineering Department, City of San Bernardino, West Valley, and YVWD provided as part of the 2010 Regional UWMP. Demands for Fontana Water Company estimated from 2010 Fontana Water Company UWMP. Demands for Crestline-Lake Arrowhead Water Company from 2007 IRWM Plan.
[2]Distributed to Bear Valley Mutual "in-lieu" of releases from Big Bear Lake.
[3] Imported water not used for direct deliveries or deliveries to Big Bear Municipal will be recharged to support groundwater pumping. The anticipated imported water demands include direct delivery, local water banking and sustainability program.

Table 3-10: Available State Water Supplies Based on Table A Amounts (AFY)

Water Agencies	Table A Amount	Average Reliability (60%)	Multi-Year Drought Reliability (33%)	Single-Year Drought Reliability (11%)
Valley District	102,400	61,440	33,792	11,264
San Gorgonio Pass Water Agency [1]	17,300	10,380	5,709	1,903
Crestline-Lake Arrowhead Water Agency[2]	100	60	33	11
Total	**119,800**	**71,880**	**39,534**	**13,178**

[1] San Gorgonio Pass Water Agency plans to acquire additional SPW for the City of Banning and the Beaumont-Cherry Valley Water District.
[2] Crestline-Lake Arrowhead Water Agency supplies approximately 60 AFY to the City of Big Bear Lake Department of Water and Power for use in Rimforest.

3.3.3 Recycled Water

The Colton/San Bernardino Rapid Infiltration and Extraction (RIX) Tertiary Treatment Facility, owned and operated by the City of San Bernardino, treats secondary-treated wastewater from the City of Colton's and San Bernardino MWD's water reclamation plants to tertiary levels for release into the SAR. The RIX facility was designed as a 40-mgd plant, but currently operates at 27 mgd. The Orange County Judgment (Orange County Water District v. City of Chino, et al., Case No. 117628) stipulated that Valley District shall be responsible for the delivery of an average annual supply of 15,250 AF of "base flow" at the Riverside Narrows. Per the terms of an agreement between SBMWD and Valley District, SBMWD releases at least 16,000 AFY of treated wastewater to the SAR to meet Valley District's downstream obligations under the Orange County Judgment.

In 2003, SBMWD released a Programmatic Environmental Impact Report evaluating the sale of excess effluent to potential buyers downstream. SBMWD has previously determined that the use of recycled water from the RIX facility to offset water demands within its service area is not feasible at this time. The RIX facility is located at an elevation and distance from SBMWD's service area that makes it economically impractical to utilize recycled water (SBMWD 2005). This could change if the water is not sent to the RIX facility.

The projected use of recycled water is summarized by water agency in Table 3-11. Recycled water use is forecasted to increase from 26,598 AFY in 2015 to 62,429 AFY in 2035.

Table 3-11: Projected Use of Recycled Water (AFY)

Water Agencies	2015	2020	2025	2030	2035
Banning, City of	1,680	1,680	1,680	1,680	1,680
Beaumont-Cherry Valley Water District	5,372	6,216	7,342	8,440	8,843
Fontana Water Company	1,500	2,500	3,500	4,500	6,000
Redlands, City of – Municipal Utilities and Engineering Department [1]	2,214	3,040	3,290	3,290	3,290
Rialto, City of[2]	336	336	336	336	336
Riverside Public Utilities	3,650	5,800	5,800	5,800	5,800
SBMWD	5,600	7,000	13,000	19,600	25,500
South Mesa Water Company	110	145	190	244	244
YVWD	6,136	7,121	8,309	9,572	10,736
Total	**26,598**	**33,838**	**43,447**	**53,462**	**62,429**

[1] The recycled water by the City of Redlands would otherwise percolate into the SBBA. In the water budget summary this was not counted as a new supply. The recycled water that would otherwise discharge into surface streams and flow out of the Region was counted as new supply.

[2] The City of Rialto delivers approximately 0.3 mgd of recycled water for park irrigation. The projected use of recycled wastewater within the City's service area for the next 25 years is uncertain as funding for infrastructural improvements is needed.

3.4 Water Budget Summary

The current balance between supply and applied demand for the USARW IRWM Region is presented as the summary of the water budget in Table 3-12 to Table 3-16 and Figure 3-3. Based on this analysis, the water supplies within the Valley District and San Bernardino Mountains area are adequate to meet the demands through 2035. This is assuming the SWP reliability as published in the *2011 State Water Project Delivery Reliability Report*, and that the infrastructure needed for future projects is in place. This analysis also relies on the 20% by 2020 reduction in demand set forth in Senate Bill X7-7 and the conservation efforts of the agencies as projected in their UWMPs.

In a normal year, SWP water not used for direct deliveries is banked in groundwater storage. Therefore, it is assumed that in any year, Valley District will have its long-term SWP supply available through a combination of SWP deliveries and SWP from storage (2010 RUWMP). Local surface water supplies are based on precipitation patterns in the future similar to those seen in the past.

Table 3-12: Water Budget Summary for Valley District and San Bernardino Mountains (AFY) for an Average Year

Supply or Demand Type	2015	2020	2025	2030	2035
SBBA Surface Water	39,000	39,000	39,000	39,000	39,000
Big Bear Surface Water	1,000	1,000	1,000	1,000	1,000
Seven Oaks Supply[1]	10,800	10,800	10,800	10,800	10,800
Oak Glen	350	350	350	350	350
Sub-Total Local Surface Water	**51,150**	**51,150**	**51,150**	**51,150**	**51,150**
SBBA Groundwater	128,238	128,238	128,238	128,238	128,238
SBBA Return Flows from Extractions above safe yield[2]	11,040	13,955	18,500	22,672	25,982
SBBA return flow from SWP deliveries[3]	7,806	7,228	7,470	8,660	8,684
Rialto-Colton Groundwater	17,300	17,300	17,300	17,300	17,300
Riverside North Groundwater	33,600	33,600	33,600	33,600	33,600
Yucaipa Groundwater	10,000	10,000	10,000	10,000	10,000
Other Groundwater	15,854	18,084	20,281	22,326	24,123
Active Recharge Program	0	28,000	28,000	28,000	28,000
Sub-Total Groundwater	**222,326**	**256,405**	**263,389**	**270,796**	**275,927**
Direct Deliveries SWP Water[4]	**21,683**	**20,079**	**20,749**	**24,055**	**24,122**
Big Bear Municipal SWP Water[4]	**6,500**	**6,500**	**6,500**	**6,500**	**6,500**
SWP Storage	**34,281**	**35,885**	**35,215**	**30,885**	**30,818**
Sub-Total SWP Water	**62,464**	**62,464**	**62,464**	**61,440**	**61,440**
Sub-Total Recycled Water	**9,919**	**13,367**	**20,977**	**29,075**	**37,292**
Total Supplies	**347,371**	**383,386**	**397,980**	**412,461**	**425,809**
Total Demands	**250,280**	**253,905**	**272,170**	**289,554**	**304,391**
Surplus	**97,091**	**129,481**	**125,810**	**122,907**	**121,418**

[1] The Plaintiffs portion is 27.95% and the Non-Plaintiffs portion is 72.05% or 10,800 AFY.
[2] The Watermaster estimates 36% return flows from extractions above the safe yield of the SBBA. This is estimated in Table 3-4.
[3] The Watermaster estimates a 36% return from the direct deliveries of SWP in the SBBA.
[4] The amount of water used in the given year is the minimum between (a) the difference between the applied demand and the surface water, groundwater, recycled water, and future Seven Oaks Supply and (b) the available Table A water found in Table 3-10.

Table 3-13: Water Budget Summary for San Gorgonio Pass Water Agency Area

Supply or Demand Type	2015	2020	2025	2030	2035
Surface Runoff (Edgar Canyon)	2,000	3,000	3,000	3,000	3,000
Groundwater	20,437	23,054	22,572	21,870	22,097
Imported Water	10,380	10,380	10,380	10,380	10,380
Recycled Water	7,431	8,532	10,063	11,713	12,933
Total Supplies	**40,248**	**44,966**	**46,015**	**46,963**	**48,410**
Total Demands	**31,151**	**36,827**	**44,302**	**52,221**	**57,165**
Surplus/Deficit	**9,097**	**8,139**	**1,713**	**-5,258**	**-8,755**

Table 3-14: Region-Wide Water Budget Summary for Average Year (AFY)

	2015	2020	2025	2030	2035
Local Surface Water	53,150	54,150	54,150	54,150	54,150
Groundwater	297,640	343,871	356,488	369,336	379,918
Imported Water	71,880	71,880	71,880	71,880	71,880
Recycled Water	26,598	33,838	43,447	53,462	62,429
Total Supplies	**449,268**	**503,739**	**525,965**	**548,828**	**568,377**
Total Demands	**392,881**	**412,377**	**443,782**	**474,625**	**497,606**
Surplus/Deficit	**56,387**	**91,362**	**82,183**	**74,203**	**70,771**

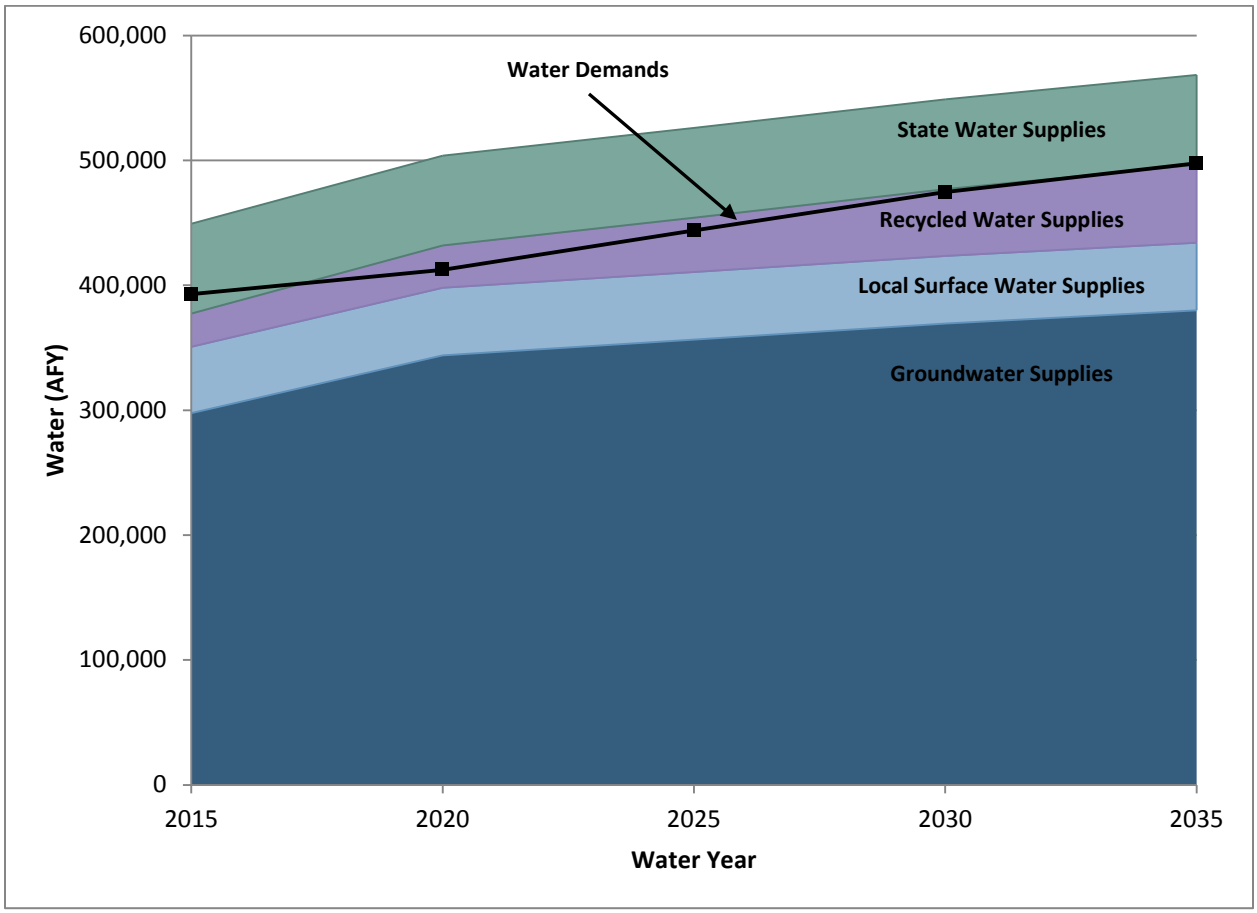
Table 3-15: Region-Wide Water Budget Summary for Multi-Year Drought (AFY)

	2015	2020	2025	2030	2035
Local Surface Water	26,010	26,610	26,610	26,610	26,610
Groundwater	297,640	343,871	356,488	369,336	379,918
Imported Water	39,600	39,600	39,600	39,600	39,600
Imported Water from Storage	18,814	0	0	4,668	9,019
Recycled Water	26,598	33,838	43,447	53,462	62,429
Total Supplies	**408,596**	**443,853**	**466,079**	**493,610**	**517,510**
Total Demands	**408,596**	**428,873**	**461,533**	**493,610**	**517,510**
Surplus/Deficit	**0**	**14,981**	**4,546**	**0**	**0**

Table 3-16: Region-Wide Water Budget Summary for a Single-Dry Year (AFY)

	2015	2020	2025	2030	2035
Local Surface Water	23,843	24,393	24,393	24,393	24,393
Groundwater	297,640	343,871	356,488	369,336	379,918
Imported Water	13,178	13,178	13,178	13,178	13,178
Imported Water from Storage	47,338	13,593	24,028	33,242	37,592
Recycled Water	26,598	33,838	43,447	53,462	62,429
Total Supplies	**408,596**	**428,873**	**461,533**	**493,610**	**517,510**
Total Demands	**408,596**	**428,873**	**461,533**	**493,610**	**517,510**
Surplus/Deficit	**0**	**0**	**0**	**0**	**0**

Figure 3-3 : Region-Wide Water Budget Summary for Average Year



The shortage in supply in

Table 3-13 within the San Gorgonio Pass Water Agency service area will require the acquisition of additional imported water supplies. The San Gorgonio Pass Water Agency 2010 UWMP outlines potential methods for augmenting its future supplemental imported water supply, including short term spot market purchases and long term permanent transfers of water rights.

During multi-year and single-year droughts, the IRWM Region is more reliant upon groundwater. Based on groundwater modeling of the SBBA, during a dry period, agencies typically increase their groundwater extractions to overcome any deficiency in local surface water and imported water supplies. Computer modeling suggests that groundwater extractions in the SBBA will increase to meet the demands in drought years if imported water is captured and stored when it is available in "wet years." The storing of local and SWP water in the SBBA in wet years for later use during dry periods is one of the foundational management strategies in the IRWM Plan. Storage locations up stream of Valley District's service area, along the SWP, is also undertaken to enable the direct delivery to treatment plants during dry years.

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4 Goals and Objectives

4.1 Introduction

The primary purpose of the IRWM Plan is to provide a roadmap for the management of water resources in the area to ensure long-term, reliable water supply availability for the IRWM Region. The first step in developing this roadmap is the formulation of broad water management goals and more specific water management objectives that can help achieve those goals. The goals and objectives described in the sections that follow shape the desired outcome from implementation of the IRWM Plan.

4.2 Water Management Objectives Development Process

A key element of the IRWM planning process is the development of water management objectives that will help address the needs of the IRWM Region, while also speaking to the water management strategies outlined in the *California Water Plan* and *IRWM Proposition 84 and 1E Program Guidelines*. To determine these objectives, the needs of the Region must be identified, as well as goals to address those needs.

4.2.1 Regional Needs Identification

Using the 2007 IRWM Plan, the BTAC discussed the current issues and needs of the Region. Below is a discussion of the issues and needs that were identified.

Reliance on Imported Water

The Region estimates that it will depend on imported water from the SWP for up to one quarter of its water supply. Dependence on imported water creates reliability issues due to vulnerabilities such as:

- Susceptibility to interruption during catastrophic conditions
- Periods of statewide drought
- Environmental protection goals and mandates in the Sacramento-San Joaquin Bay Delta
- Climate change
- Imported water quality
- Imported water cost increases

As the health of the Delta environment has deteriorated and fish populations have declined, state and federal regulations have limited the SWP's ability to pump and convey water to southern California. In addition to environmental challenges, aging Delta levees are also crumbling and not able to withstand the impacts of catastrophic earthquakes, floods and rising sea levels. This growing crisis poses the threat of statewide economic and ecological disaster.

Diversifying water supplies will improve reliability and reduce pressures from population and demand increases.



Groundwater is a major source of water supply for the Upper Santa Ana Region.

Groundwater Management

Precipitation stored as groundwater is a major source of water supply in the IRWM Region. At times, parts of the Region can experience high groundwater levels that must be managed in order to reduce the risk of liquefaction. Additionally, preserving and improving water quality in the groundwater basins is important to maintaining safe drinking water quality.

Due to the significance of groundwater management in the IRWM Region, the following three groundwater management needs were established for the Region:

1. *Maximize Conjunctive Use*: The BTAC has developed Conjunctive Use Guidelines for the SBBA that are intended to optimize the storage potential in this basin. Conjunctive use potential should also be evaluated for the other basins in the Region.
2. *Reduce the Risk of Liquefaction*: A significant portion of the SBBA—generally, the downtown and southern portions of the City of San Bernardino—is an area of historically high groundwater. Groundwater levels in this area have been artesian in the past. When high groundwater is combined with the thick layer of sand in the aquifer it can cause liquefaction in an earthquake.
3. *Protect Groundwater Quality*: Groundwater management is currently influenced by the presence of contamination plumes. Most of these plumes resulted from historic military and industrial operations in the Region.

Because groundwater is such an important supply for the Region, these needs were incorporated into the overall IRWM Objectives.

Water Quality

Groundwater quality in the Upper SAR watershed is generally good, though there are a number of contamination plumes in the upper watershed that are in the process of being remediated. Water quality impacts in the Region are largely due to the presence of the defense industry and agriculture. In the past, the defense industry routinely dumped solvents onto the ground which soaked into the groundwater. Agriculture resulted in an accumulation of salts that are now in the unsaturated soils overlying groundwater basins (now defined in the Basin Plan as groundwater management zones). These salts will degrade groundwater quality over time.

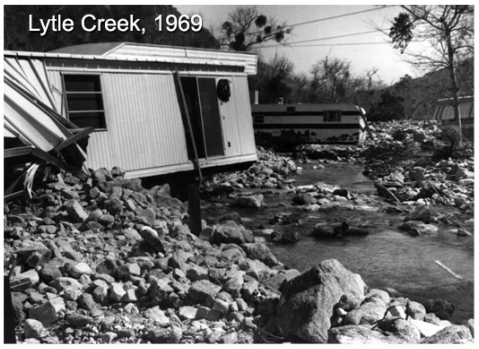
Currently, the primary groundwater quality concerns in the IRWM Region include TDS, nitrogen, PCE, TCE, and perchlorate. Additionally, some surface waters in the Region are on the State's 303(d) list for pathogens, nutrients, metals, sediment, and/or PCBs. Implementing projects that protect and improve water quality in the Region is important to protecting drinking water quality as well as protecting water quality in downstream areas.

Flood Management

The management of storm waters that flow through the San Bernardino Valley has been an ongoing challenge since the SBCFCD was created in 1939. Multiple flooding events, some with the loss of life, have occurred in the intervening years. One of the primary purposes of the SBCFCD is to manage flood waters and natural stream flow for the protection of residents, public and private properties and the utilities that are vital for the communities.

The SAR Wash was historically a natural floodplain and alluvial fan that provided a place to convey frequent devastating flood waters and to deposit sediment. The alluvial deposit provided excellent conditions for establishing settling basins for percolating surface water to the groundwater basin, providing a significant source of water supply for the Upper SAR watershed. Substantial development has occurred in these areas, with additional development planned for the future. Protecting open space areas that can be used for flood protection is critical. Retaining stormwater for recharge is also desirable to help meet future water supply needs.


Cajon Highway, 1938


Lytle Creek, 1969

Habitat and Open Space Preservation

The IRWM Region contains extraordinary natural resources, including the San Bernardino National Forest in its headwaters, and unique habitat types, endangered or threatened species in the San Bernardino Valley. The Region desires to be proactive in working with Federal and State agencies to improve habitat and open space, and increase recreational areas.

Disaster Preparedness

The IRWM Region is located in a seismically active area of Southern California. Four major fault zones are found in the Region, including the San Jacinto Fault, the Chino-Corona segment of the Elsinore Fault, the Cucamonga Fault, and the San Andreas Fault. Numerous other minor faults associated with these larger fault structures may also present substantial hazards.

While not the only cause for a catastrophic water supply interruption, the postulated magnitude 8.0 earthquake on the San Andreas Fault is one of the most likely disasters that could occur in the Region. The effects of a large magnitude earthquake on water supply were estimated based on post-earthquake surveys, earthquake planning reports included in purveyor's UWMPs, and available reports prepared by State and federal agencies. Other catastrophic interruptions caused by regional power failure, terrorist attack, or other man-made or natural catastrophic event could cause similar conditions and issues to water supply systems in the Region.

A conceptual level analysis has been performed to assess possible impacts due to seismic activity. As additional data and information becomes available, a more detailed analysis should be conducted. Appendix F includes the following:

- An earthquake literature search of major earthquake events and what has been learned from such events.
- Evaluation of catastrophic interruption of regional facilities.
- Vulnerabilities of the Region's water supply system to SWP supply interruption.
- Vulnerability of local purveyors' systems to an earthquake.
- Summary of Findings and Recommendations including a Water Shortage Contingency Plan.
- Water Shortage contingency planning.

In addition, the UWMPs within the Region also include water contingency planning information and are updated every 5 years.

Sustainability

The IRWM Region recognizes the need to make water management decisions that ensure resources are maintained for future generations. This includes incorporating economic, social, land use, environmental sustainability into water resource management decisions. DACs are often more vulnerable to water supply, flood, and water quality issues. The Region has made ensuring equivalent services to DACs a priority and intends to maintain these services through the planning horizon of the IRWM Plan.

Climate Change

In order to identify the potential impacts to the IRWM Region's water resources as a result of climate change, the BTAC conducted a vulnerability assessment using the Vulnerability Assessment Checklist available in DWR's *2011 Climate Change Handbook for Regional Planning*. The questions and answers for this checklist are provided in Appendix G. Below is a list of the areas of the Vulnerability Assessment Checklist that should be viewed as a priority within the Region, and should be addressed to protect the Region from potential climate change impacts.

- Processes that require cooling water
- Climate sensitive agriculture
- Reliance on imported water
- Wildfires that effect water quality
- Threatened beneficial uses of water bodies

Based on the checklist above, the following vulnerabilities were identified for the Upper SAR Basin. The vulnerabilities were listed in rank order by the BTAC subcommittee updating the IRWM Plan. In all cases, actions identified in the IRWM address vulnerabilities.

1) *Uncertainty around the Sacramento-San Joaquin Bay Delta, especially given dependence on snow pack for water supplies will make imported supplies less reliable.*

The Region's ability to capture additional stormwater and store it in the large underlying groundwater basins will provide some ability to offset this vulnerability. In addition, the Region plans to maximize the import of water during wet years and store it in the large underlying groundwater basins which will also help offset this vulnerability.

2) *Current groundwater capture facilities are not operationally equipped to capture less frequent, but more intense storm events.*

As much of the Region's water supply ultimately falls on precipitation, either as rain or snow, in the local mountains, the ability to capture more intense storm flows is crucial. As these flows are often intense and of short duration, further development of additional facilities to capture and recharge the tail end of an intense storm becomes crucial in the Region. Plans for these facilities are discussed elsewhere in the IRWM Plan. Additionally, through a partnership between SBVWCD and Valley District, capacity to recharge water from released from the Seven Oaks Dam will be increased. As the dam serves to attenuate flood flows, this project is well suited to increase the Region's capacity to recharge water.

3) *More frequent drought periods will result in more frequent and intense wildfires. Water quality and the ability to capture storm flows will be reduced.*

Wildfires are already a concern in the Region, and have historically caused water quality and flood control issues. Should climate change increase drought periods and result in more frequent and intense wildfires, water quality and flood control will be further impacted.

4) *Increased surface water temperatures will degrade water quality and negatively impact aquatic life, especially in mountain areas.*

High gradient stream systems located in the mountainous areas support a number of species that exist in a narrow geographic range limited by altitude. Some of the more sensitive species, such as the mountain yellow-legged frog, are listed by the U.S. Fish and Wildlife Service and active restoration and recovery programs are underway. Increases in surface water temperature will negatively impact aquatic life as already narrow geographic ranges will be further reduced.

5) *Uncertainty related to managing intense winter storms to protect downstream life and property will make holding water in the flood system for recharge more difficult.*

As seasonal storms become less frequent and more intense, flood management may become more complex. However, collection of water for recharge during intense storm events is difficult and most efforts are focused on "scalping" the tail of a storm flow. The high volume flows move downstream and the tailing, less intense flows can be collected by rubber dams or other structures. These structures are intended to be deflated or moved during high flow events. Planning is underway for a number of these facilities within the watershed.

6) *Increased temperatures will result in increased water demand for landscape irrigation.*

As days with highs over 95 degrees increase in frequency, absent any intervention, landscape irrigation demands would increase. Recent programs by local water retailers, including a popular public-private partnership called Water Saving Garden Friendly, have provided education and resources for homeowners and businesses to reduce irrigation demand through the use of drought tolerant plants in landscaping. A recent partnership with California State University resulted in a drought tolerant demonstration garden where the public can see and better understand the benefits of drought tolerant landscaping. Additionally, like in most parts of California, numerous incentive programs are underway to increase water use efficiency by the homeowner, especially outdoor use. These programs will need to be continued or even expanded to counteract increasing temperatures in the future.

7) *Decreased runoff and subsurface flows from the mountain front areas as the result of more frequent and severe droughts.*

As drought conditions become more frequent, it becomes more important to capture storm flows when they are available. Further development of recharge facilities within the IRWM Region and imports of water during wet years for underground storage allows the Region to store water in the wet years for use during periods of drought. The Bunker Hill Subbasin is a tremendous resource and the cooperative management of the basin has created the structure where more water could be stored in wet years.

As summarized above, most of the IRWM Region's vulnerabilities are addressed by work already occurring in the upper watershed. More active stormwater capture and more active recharge of imported water in wet years will help prepare the Region for changed climatic conditions.

4.2.2 Goals and Objectives Development

Water management goals are the broad statements that drive water management planning in the IRWM Region. Water management objectives are the more specific and measureable ways of achieving these goals. The objectives in this Plan are tailored to the Region's needs and priorities as well as the priorities of the State. Water management strategies are the methods the Region plans to use to achieve its objectives (Figure 4-1). These strategies are described in detail in Chapter 5.

Figure 4-1: Hierarchy of Goals, Objectives and Strategies



Objectives Development Process

The BTAC is responsible for preparing and updating the IRWM Plan, including reviewing and refining the objectives to ensure they remain relevant to current needs of the IRWM Region. The IRWM Plan objectives were originally developed for the 2007 IRWM Plan. Since that time, the water agencies and other stakeholders in the Region have reviewed and commented on the Plan sections. These comments have been incorporated to ensure the issues and priorities of the Region are reflected. The BTAC reviewed the updated water management goals, objectives and strategies at a workshop on September 16, 2014 to incorporate any remaining concerns and adjust the objectives as needed.

Considerations

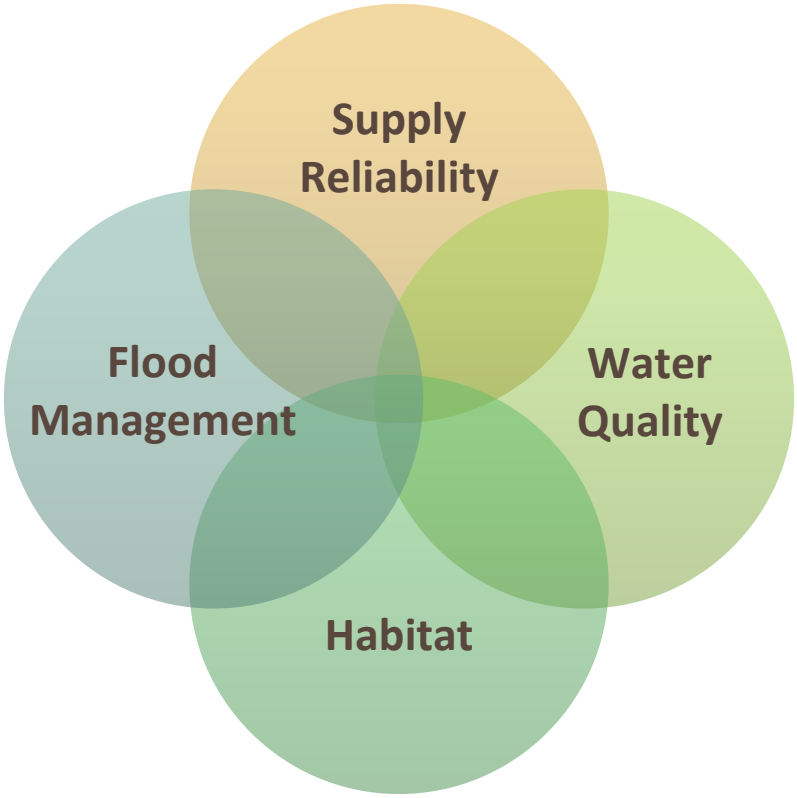
Several policies were considered when developing the water management objectives. Water management in the Region is governed by a complex set of technical constraints, court decisions, judgments, and agreements. Water management objectives for the Region must be consistent with these legal documents. Other considerations included consulting the Basin Plan objectives. Water quality standards found in the Basin Plan were used to identify measurable targets for water quality in the groundwater and surface water bodies. The State's 20x2020 water use efficiency goals set forth in the Water Conservation Act of 2009 were also used to develop measurable objectives for the Region's water supply goal.

4.3 Water Management Goals and Objectives

Using the needs of the IRWM Region described in the previous section, the Region established the following goals, also shown in Figure 4-2:

1. Improve Water Supply Reliability
2. Balance Flood Management and Increase Stormwater Recharge
3. Improve Water Quality
4. Improve Habitat and Open Space

Figure 4-2: Upper SAR Watershed IRWM Regional Goals



The Region agreed that achieving the IRWM goals would require the identification of more specific and measurable objectives that relate to each of the 4 goals. The resulting 15 objectives consider the State's planning guidance in the *2012 IRWM Proposition 84 and 1E Program Guidelines*, as well as the priorities and opportunities unique to the IRWM Region. These objectives are shown in Table 4-1 and described in the sections that follow.

Table 4-1: Upper SAR Watershed IRWM Region Objectives

Goal #1: Improve Water Supply Reliability	1a: Reduce demand 20% by 2020
	1b: Increase utilization of local supplies by 23,000 AFY • Stormwater: 20,000 AFY • Recycled Water: 3,000 AFY
	1c: Increase storage by 10,000 AF
	1d: Prepare for disasters by implementing 2 new interties between water agencies
	1e: Monitor and adaptively manage climate change impacts by implementing 3 projects that reduce energy demands
	1f: Ensure equivalent water supply services for DACs
Goal #2: Balance Flood Management and Increase Stormwater Recharge	2a: Utilize 500 acres of flood control retention/detention basins that are not currently used for recharge
	2b: Reduce FEMA reported flood area
	2c: Ensure equivalent implementation of flood projects in DAC areas and implement at least 1 flood control project in a DAC area
Goal #3: Improve Water Quality	3a: Ensure no violations of drinking water quality standards
	3b: Improve surface and groundwater quality by treating 3,000 AFY of water supply
	3c: Manage total dissolved solids and nitrogen in groundwater
	3d: Ensure equivalent water quality services for DACs
Goal #4: Improve Habitat and Open Space	4a: Improve habitat and open space by 1,200 acres
	4b: Identify "multi-use" opportunities to increase recreation and public access and identify at least 1 multi-use project

4.3.1 Goal #1: Improve Water Supply Reliability

Water supply reliability can generally be improved by reducing demand and/or by increasing supply. Demand reduction is required by the Water Conservation Act of 2009 (SBX7-7), which requires retail water agencies to reduce demands 20% by 2020. Water supply for the Region can be developed by increasing use of supplies such as recycled water, groundwater, and stormwater.

True reliability occurs when there is additional supply over projected demand. This redundancy, or "reliability margin", in supplies allows the Region to adapt to changing conditions. For example, developing additional stormwater capture may overcome a deficit in the amount of precipitation assumed into the future. The IRWM Region has decided to use a reliability margin of 10% in its analysis. This 10% exceedance of supplies over demands will help the Region adapt to unknowns such as future precipitation amounts, future imported water availability, climate change impacts and other unknowns.

Several objectives were identified to improve water supply reliability in the Region. These include managing demands, increasing local supplies, increasing overall water storage, preparing for potential disasters, managing climate change impacts, and ensuring DACs receive equivalent services.

Objective 1a: Reduce demand 20% by 2020.

SBX7-7 requires retail water agencies to reduce demands 10% by 2015 and 20% by 2020. The BTAC is tracking each retail water agencies progress toward these goals on an annual basis and providing the status in its Regional UWMP.

Wholesale water agencies like Valley District and San Gorgonio Pass Water Agency are not held responsible for the demand reductions, but are required to help the retail water agencies within their service areas achieve these goals (Water Code §10608.36). Water conservation programs in the Region have grown over the past several years.

In 1983, the California legislature enacted the Urban Water Management Planning Act (Water Code Sections 10610-10658). The Act states that every retail water supplier providing 3,000 AF of water annually or supplying water to 3,000 customers or more must file a UWMP with DWR. The requirement is designed to ensure thoughtful planning for future water reliability. Water purveyors must submit an updated plan and have that plan deemed complete by DWR every five years. The statute requires quite a detailed assessment, including an analysis of Demand Management Measures (DMMs). DMMs are programs and activities that encourage, regulate or incentivize water conservation. The Urban Water Management Planning Act identities fourteen (14) DMMs, also referred to as BMPs, which are to be evaluated in each UWMP.

By reducing regional water demand 20% by 2020, this objective will help retail water agencies meet their SBX7-7 water use efficiency goals and help alleviate demands on water supplies. Widespread implementation of water use efficiency programs and other BMPs will increase water supply reliability in the Region.

Objective 1b: Increase utilization of local water supplies by 23,000 AFY (stormwater: 20,000 AFY and recycled water: 3,000 AFY)

Increasing the use of local water supplies helps the Region develop a more diverse water supply portfolio that adds resiliency against interruptions in imported water deliveries and increasing imported water costs. Local water supply opportunities include increasing stormwater capture, recycled water, and groundwater use through projects that develop the infrastructure to capture, store, or transport the water supplies locally. In addition, increasing local supply use will help to reduce dependence on the Delta.

Objective 1c: Increase storage by 10,000 AF.

Storing water, primarily in groundwater basins, in wet years for later use during dry periods (conjunctive use) is a foundational strategy to help improve water supply reliability. Through the Valley District Cooperative Recharge Program, retail agencies in the Valley District service area store imported water during wet years so that it is available in dry years. Since 2008, nearly 107,000 AF has been stored under this program. However, the area will need to increase this amount, over time, to help offset increasing demands and other uncertainties. The preferred storage location is in local groundwater basins to reduce evaporative losses and transportation costs, though storage can also occur in upstream locations or the Central Valley. Storing water locally has the advantage of improving reliability by reducing the vulnerabilities associated with transporting the water from other agencies' jurisdictions, but this objective also includes increasing storage outside the Region.



The Cuttle Weir is a concrete and rock diversion structure owned by the San Bernardino Valley Water Conservation District and is used to divert water from the Santa Ana River to the Conservation District's Santa Ana River Spreading Grounds for artificial recharge of the SBBA. The Seven Oaks Dam can be seen in the background.

Objective 1d: Prepare for disasters by implementing two new interties between water agencies.

Implementing storage and intertie projects will improve the Region's resiliency against disasters such as earthquakes and other catastrophic events that could cause damage to water supply systems. Earthquakes can displace pipelines, interrupt power supply to pump stations and treatment facilities, and cause water service outages of local and SWP water. Increasing storage can provide reserves if there is an interruption of SWP water and interties can be used during an emergency to supply water from water systems that are not damaged.

Objective 1e: Monitor and adaptively manage climate change impacts by implementing three projects that reduce energy demands.

Generally, there is great uncertainty in the magnitude, timing, and location of precipitation and runoff changes associated with climate change. However, it is generally agreed that climate change could change runoff patterns. There is also a great level of uncertainty in the reduction, if any, in water supply due to climate change for Southern California and for USARW, in particular. The strategies identified to improve water supply reliability would also be useful in mitigating potential impacts from climate change. Therefore, the Region has decided to continue to implement the various water supply reliability strategies while monitoring actual conditions. When actual conditions warrant, the IRWM Program will adapt, as necessary, by changing its strategies or developing new strategies. Another way the IRWM Region is preparing for climate change is by ensuring supplies exceed demands by at least 10% (reliability margin).

Objective 1f: Ensure equivalent water supply services for DACs

Supporting water supply projects that benefit DACs is an important aspect in maintaining water supply reliability. The Region strives to maintain equitable water supply services for DACs, and will continue to do so in the future.

4.3.2 Goal #2: Balance flood management and increase stormwater recharge

While conveying flood water safely through the IRWM Region is of critical importance, detaining runoff for recharge is also desirable. This goal represents the Region's need to balance the use of flood control basins and channels to reduce flood risk while using of these same flood control facilities to enhance stormwater capture and recharge.

Objective 2a: Utilize 500 acres of flood control retention/detention basins that are not currently used for recharge.

Combined with the dwindling water supplies around the state, the water agencies desire to continue to wisely utilize the natural streams and local groundwater for the benefit of all the residents. Using flood control basins to capture stormwater for recharge will increase groundwater supplies while reducing flood risk. This objective has the additional benefit of improving water quality issues associated with stormwater runoff.

Objective 2b: Reduce FEMA reported flood area.

Preserving flood plains will reduce the risk of flood waters damaging municipal and private property. The Region recognizes the importance of preserving flood plains to decrease flood risk.

Objective 2c: Ensure equivalent implementation of flood projects in DAC areas by implementing at least one flood control project in a DAC area.

The Region recognizes the importance of supporting flood management projects in DACs, and will continue to ensure equivalent implementation of flood projects in DAC areas.

4.3.3 Goal #3: Improve Water Quality

Improving water quality in the IRWM Region is critical for ensuring safe and sustainable surface and groundwater, human health and preserving aquatic species.

Objective 3a: Ensure no violations of drinking water quality standards.

The retail water agencies in the Region must comply with water quality regulations. These regulations require routine sampling of water supplies to ensure compliance. Overall water quality is reported to customers in annual consumer confidence reports. The Region is not recommending any additional water quality monitoring requirements beyond what is already required by state and federal regulations, but does set the objective of ensuring the water quality requirements are met.

Objective 3b: Improve surface and groundwater quality by treating 3,000 AFY of water supply.

Local surface water and groundwater are important water supply sources for the Region, and maintaining and improving the water quality of these supplies ensures safe water for human health and aquatic life. Several contaminant plumes are present throughout the Region, and include the Newmark-Muscoy, Redlands-Crafton, Santa Fe, former Norton Air Force Base, Rialto-Colton Subbasin, and No-Man's Land plumes. Cleanup of the Newmark-Muscoy and former Norton Air Force Base Plumes is progressing under the EPA Superfund Program. In each case, treatment is required to remove the contaminant before the water can be served to customers.

Objective 3c: Manage total dissolved solids and nitrogen in groundwater.

Long-term historic land use practices caused the accumulation of salts and nitrates in the soils overlying the groundwater basins in the Region, and have resulted in TDS and nitrate contamination in the basins. The construction and operation of groundwater desalters to extract and treat poor-quality groundwater has been and continues to be an essential component of salt and nutrient management in the Santa Ana watershed. Such projects will be increasingly important

in the USARW to protect local water supplies and provide supplemental, reliable sources of potable supplies.

Objective 3d: Ensure equivalent water quality services for DACs.

The majority of DACs receive water supplies that meet all state and federal standards for water quality from the utility which services their area. The Region will continue to identify projects that improve upon the water quality services provided to DACs.

4.3.4 Goal #4: Improve Habitat and Open Space

Improving habitat and open space areas has multiple benefits for the IRWM Region including improving water supply, water quality, flood management, ecological resources and recreational opportunities. The Region recognizes the potential to improve water resources management by protecting and improving open space areas.

Objective 4a: Improve habitat and open space by 1,200 acres.

Habitat and open space provide multiple benefits including ecological protection and stewardship; creation of recreational opportunities; protection of water source and quality through promotion of natural recharge, attenuation of runoff and reduction of erosion; and improvement of quality of life. Restoration projects can also protect threatened and endangered species. Restoring and improving habitat through integrated water resources projects and programs will help the Region to maintain and improve habitat benefits.



The San Bernardino National Forest is home to extraordinary natural resources.

Objective 4b: Identify "multi-use" opportunities to increase recreation and public access and identify at least one multi-use project.

The Region recognizes the need to balance between growth of urban areas and the environment to maintain a viable habitat for native plant and wildlife species, and to maintain a high quality of life for watershed residents and visitors. An effective way to establish this balance is the development of open space corridors that allow for multiple species habitat, wetlands, storm flow capture and aquifer recharge, water quality improvements, and passive and active recreational facilities and open spaces.

4.3.5 Prioritization of Objectives

Given that this IRWM Plan is intended to be a truly integrated plan, the IRWM Region elected not to prioritize the IRWM objectives with the understanding that each objective is equally important relative to the others. The Region may prioritize objectives as funding opportunities become available in order to align projects with the goals of each funding program.

4.4 Consistency with Statewide Objectives

As mentioned throughout the IRWM Plan, the IRWM planning process has been developed and implemented taking into consideration DWR's IRWM Guidelines. The IRWM Region's objectives are consistent with the Statewide Priorities laid out in the Guidelines, as shown in Table 4-2.

Table 4-2: Comparison between IRWM Plan Objectives and Statewide Priorities

Upper SAR Watershed IRWM Plan Objectives	Statewide Priorities							
	Drought Preparedness	Use and Reuse Water More Efficiently	Climate Change Response Actions	Expand Environmental Stewardship	Practice Integrated Flood Management	Protect Surface Water and Groundwater Quality	Improve Tribal Water and Natural Resources	Ensure Equitable Distribution of Benefits
1a: Reduce demand 20% by 2020.	●	●	●	○		○	○	○
1b: Increase utilization of local supplies by 23,000 AFY (stormwater: 20,000 AFY and recycled water: 3,000 AFY).	●	●	●	○	○	○	○	○
1c: Increase storage by 10,000 AF.	●	○	●	○		○	○	○
1d: Prepare for disasters by implementing two new interties between water agencies.	●	○	●		○		○	○
1e: Monitor and adaptively manage climate change impacts by implementing three projects that reduce energy demands.	○	○	●	○	○	○	○	○
1f: Ensure equivalent water supply services for DACs	●	○	○	○	○		○	●
2a: Utilize 500 acres of flood control retention/detention basins that are not actively used for recharge.	●	●	○	○	●	○	○	○
2b: Reduce FEMA reported flood area.			○	○	●	○	○	○
2c: Ensure equivalent implementation of flood projects in DAC areas and implement at least one flood project in a DAC area.			○	○		○	○	●
3a: Ensure no violations of drinking water quality standards.			○	○		●	○	○
3b: Improve surface and groundwater quality by treating 3,000 AFY.			○	○		●	○	○
3c: Manage total dissolved solids and nitrogen in groundwater.			○			●	○	○
3d: Ensure equivalent water quality services for DACs.			○	○		●	○	●
4a: Improve habitat and open space by 1,200 acres.			○	●	○	○	○	○
4b: Identify "multi-use" opportunities to increase recreation and public access and identify at least one multi-use project.			○	●	○		○	○

● IRWM Plan objective directly supports the listed Statewide Priority
○ IRWM Plan objective can indirectly support the listed Statewide Priority

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5 Water Management Strategies

This chapter considers the water management strategies the USARW IRWM Region can use to meet the goals and objectives discussed in Chapter 4.

5.1 Consideration of Strategies

The BTAC reviewed the strategies used in the 2007 IRWM Plan and determined that they were still applicable to the Region. In order to be consistent with the California Water Plan (CWP), the IRWM Region adopted the terminology used in the *2013 CWP Update*. The Region considered the RMS in relation to the needs, goals, and objectives (which include climate change related objectives) determined by stakeholders and presented in Chapter 4. The strategies to include in the IRWM Plan were discussed and vetted during a BTAC workshop on September 16, 2014. The RMS included as strategies in the IRWM Plan are those that have synergies with the Region's goals and objectives. Additional water management strategies specific to the Region were developed by stakeholders for the 2007 IRWM Plan and reviewed during the BTAC Workshop on Objectives and Strategies.

The following RMS were not considered feasible or applicable for implementation in the IRWM Region:

- *Precipitation Enhancement*: This strategy was briefly explored in the Upper SAR watershed and determined to be unsuccessful. The stakeholder group decided this strategy is impractical for the Region and will not be considered as a water resource management strategy at this time.
- *Surface Storage – CALFED/State*: Although this strategy could improve water supply reliability for the Region, it is not as cost effective as groundwater storage. Given the abundant groundwater storage opportunities in the IRWM Region, the BTAC decided that surface storage should not be considered as an Upper SAR watershed regional strategy at this time.
- *Other Strategies (crop idling for water transfer, dewvaporization/atmospheric pressure desalination, fog collection, irrigated land retirement, rainfed agriculture, snow fences, and waterbag transport/storage technology)*: Many of these RMS are either infeasible or use relatively new and unproven technologies; therefore, they would not be favored unless all other strategies presented in this chapter have been exhausted. Specific characteristics of the Region that make several of these strategies impractical include low amounts of rain, fog, and agriculture.

In many instances, regional strategies can address multiple IRWM planning objectives and goals. For example, protection of recharge areas could help meet the objectives increase storage, reduce flood risk, improve water quality, and restore and improve habitat and open space. The remainder of this chapter describes the strategies selected for inclusion in the IRWM Plan, shown in Table 5-1, as well as the integration of these strategies.

Table 5-1: Water Resource Management Strategies

Strategies	Goals			
	Improve Water Supply Reliability	Balance Flood Management and Increase Stormwater Recharge	Improve Water Quality	Improve Habitat and Open Space
Continue Basin Management in the San Bernardino Basin Area	✓			
Continue Forest Management and Hazardous Fuels Reduction		✓	✓	✓
Coordinate Land Use Planning and Management with Water Resources Management		✓	✓	✓
Develop Basin Management in Yucaipa Basin	✓			
Develop Desalination	✓			
Develop Watershed Management Projects and Programs			✓	✓
Improve Drinking Water Treatment and Distribution			✓	
Identify Corridors for Species				✓
Identify Projects that Increase Recharge	✓	✓		
Identify Projects that Increase Surface Water and Groundwater Storage Inside and Outside the Region	✓			
Identify Water Transfer Opportunities	✓			
Implement Agricultural Lands Stewardship		✓		
Implement Agricultural Water Use Efficiency	✓			
Implement Pollution Prevention Measures			✓	
Implement System Reoperation	✓			
Implement Urban Water Use Efficiency	✓			
Improve Supply Conveyance – Delta	✓			
Improve Supply Conveyance – Regional/ Local	✓			
Incorporate Environmental Opportunities and Constraints into the Design Process for Facilities				✓
Incorporate Opportunities to Improve Habitat and Increase Recreation and Public Access During the Facilities Design Process				✓
Increase Recycled Water Use	✓			
Increase Stormwater Capture	✓	✓	✓	
Maintain and Improve Water-Dependent Recreation				✓
Manage High Groundwater Potential in the SBBA	✓			
Manage Urban Runoff			✓	
Match Water Quality to Use			✓	
Monitor Consumer Confidence Reports			✓	

Strategies	Goals			
	Improve Water Supply Reliability	Balance Flood Management and Increase Stormwater Recharge	Improve Water Quality	Improve Habitat and Open Space
Operate Existing Facilities to Increase Recharge		✓		
Optimize Wet Year Storage and Dry Year Pumping (Conjunctive Management & Groundwater)	✓			
Participate in the SAWPA Basin Management Task Force			✓	
Protect Recharge Areas	✓	✓	✓	✓
Provide Economic Incentives	✓	✓	✓	✓
Remediate Groundwater Contamination Plumes			✓	
Restore Ecosystems		✓		✓
Review DACs Every 5 Years	✓	✓	✓	✓
Support the Bay Delta Conservation Plan			✓	

5.2 Strategies for Implementing the IRWM Plan

The water management strategies selected for inclusion in the IRWM Plan are discussed in the following sections. These strategies are organized according to the goals discussed in Chapter 4:

1. Improve Water Supply Reliability
2. Balance Flood Management and Increase Stormwater Recharge
3. Improve Water Quality
4. Improve Habitat and Open Space

5.2.1 Strategies to Improve Water Supply Reliability

Implement Urban Water Use Efficiency

Urban Water Use Efficiency (WUE) involves reducing potable water used for municipal, commercial, industrial, irrigation and aesthetic purposes, and is an important element in almost every water purveyor's water resource planning efforts. Such efficiency methods include incentives, public education, and other efficiency-enhancing programs. Significant progress has been made to reduce urban water use in the IRWM Region. The Region plans to continue these programs and work on other strategies such as implementing water rate structures that reduce water waste.

This strategy aligns with the Region's objectives to reduce demand 20% by 2020 and monitor and adaptively manage climate change impacts.

Implement Agricultural Water Use Efficiency

Agricultural WUE includes improvements in technology and management of water, both on-farm and at the water supplier level through the use of incentives, public education, and other programs to achieve reductions in the amount of water used for agricultural irrigation. Future agricultural WUE measures will focus on development of new technologies, and further economic incentives.

Though implementation of this strategy will help the IRWM Region to achieve its goal of improving water supply reliability and adaptively managing climate change impacts, since agriculture is not a

large industry in the IRWM Region, implementing agricultural WUE will provide limited benefit to the IRWM Region.

Increase Stormwater Capture

Water supply reliability in the Region can be increased by capturing local stormwater that historically flowed to the ocean. The Region is working on a variety of projects that would capture more of this local resource. This strategy will help increase storage and utilization of local supplies.

Continue Basin Management in the San Bernardino Basin Area

The SBBA is a major source of groundwater for the IRWM Region. The IRWM Region is currently working to maximize the conjunctive use of this important resource through its Cooperative Recharge Program (storing water in wet years) and Conjunctive Use Project (building extraction facilities for dry years). The BTAC also evaluates liquefaction potential on a monthly basis and has a dewatering plan should additional pumping be required to lower water levels and reduce liquefaction potential.



The SBBA is managed to balance recharge with high groundwater levels.

Manage High Groundwater Potential in the SBBA

The SBBA is uniquely constrained by shallow groundwater levels when the basin is too full. The shallow groundwater conditions have been artesian in the past and occur in an area of South San Bernardino called the Pressure Zone, or Area of Historic High Groundwater. High groundwater levels increase the risk of liquefaction, flood basements and can impact underground utilities. These conditions can also limit opportunities for recharge and/or groundwater banking in the basin.

The management strategy developed for the SBBA has been called the "tilted basin" concept. Management of groundwater levels under the tilted basin concept consists of recharging the basin along the foothills of the San Bernardino Mountains, farther upstream of the area of historic high groundwater (AHHG) Recharging along the foothills increases the "travel time" to the Pressure Zone thereby delaying any possible high groundwater conditions. Part of this strategy also includes installing new wells in the basin through Valley District's Conjunctive Use Project to help prevent the recurrence of high groundwater and the BTAC dewatering plan which can be implemented if water levels are nearing the limit of 50 feet below ground surface.

Develop Basin Management in Yucaipa Subbasin

While the SBBA and Rialto-Colton subbasins are already managed, there is a desire to similarly manage the Yucaipa Subbasin to maintain supply reliability. This strategy will improve management of the Yucaipa Subbasin to both continue the ability of retailers to use groundwater to meet demand, and take advantage of storage capacity in the basin to improve regional water supply reliability.

Identify Projects that Increase Surface Water and Groundwater Storage Inside and Outside the Region

This strategy will improve water supply reliability by increasing storage, increasing utilization of local supplies, and preparing for disasters that could cause an interruption in imported water or failure of regional water conveyance.

Optimize Wet Year Storage and Dry Year Pumping (Conjunctive Management & Groundwater)

Conjunctive use, storing water in wet years for later use during dry years, can help improve the Region's long-term and seasonal water supply reliability. This strategy also helps to maximize the utilization of California's "feast or famine" hydrology which is characterized by wet years and dry years with relatively few years in between. Implementation of this strategy supports the Region's objectives of increasing utilization of local supplies and increasing storage. This strategy also increases water supply reliability by helping meet the objective to prepare for disasters by implementing storage projects and adaptively managing climate change impacts.

Increase Recycled Water Use

Water supply reliability in the Region can be improved by increasing the use of recycled water. Use of recycled water eliminates the need for an equivalent amount of potable water. Recycled water is also extremely reliable since wastewater flows continue independent of whether it is a wet period or a dry period.

Develop Desalination

Desalination is the removal of salts from saline waters, including ocean water and brackish groundwater. Because the IRWM Region is located inland, ocean water desalination is not considered a likely or cost-effective source for this area. However, desalination of recycled water may be necessary and desalination of some groundwater supplies may also be required to allow the Region to access additional supplies. This is particularly true for recovery of high salinity groundwater in the Yucaipa and Beaumont groundwater basins.

Implement System Reoperation

System reoperation allows for better management and movement of existing water supplies, and includes managing surface storage facilities to optimize the availability and quality of stored water supplies. System reoperation could involve balancing supply and delivery forecasts, coordinating and interconnecting reservoir storage, and optimizing depth and timing of withdrawals. This strategy will help the Region improve water supply reliability by helping to meet objectives such as increasing utilization of local supplies and increasing storage.

Improve Supply Conveyance – Delta

The IRWM Region relies on the SWP for imported water supplies. Improvements to the SWP system increase the reliability of this supply source. The Region recognizes the importance of the SWP and, therefore, desires to support the Bay-Delta Conservation Plan which would restore reliability to the SWP while also improving habitat.

Improve Supply Conveyance – Regional/Local

Local and regional water supply conveyance in the IRWM Region can include both natural watercourses and man-made facilities such as pipelines and flood control channels. Infrastructure associated with these conveyance facilities includes pumping plants and diversion structures. The local/regional conveyance strategy seeks to improve existing conveyance systems by upgrading aging distribution systems, as well as to increase system flexibility and reliability through the addition of interconnections among water resource systems. Establishing performance metrics for

quantitative and qualitative indicators, and assuring adequate resources to maintain the condition and capacity of existing constructed and natural conveyance facilities are also aspects of this strategy. Opportunities exist in the Region to improve conveyance, such as those areas identified by Valley District in its Peak Day Demands analysis provided in Appendix I.

Conveyance infrastructure improvements and upgrades can improve the operational flexibility of delivery systems to better accommodate peak demands and emergency water needs, which will help the Region to meet its objective of preparing for disasters. Additional local and regional conveyance can also increase utilization of local supplies and ensure equivalent water supply services for DACs.

Identify Water Transfer Opportunities

Water transfers are temporary or long-term changes in the point of diversion, place of use, or purpose of use by contracting or moving water from one beneficial use to another. Through pipeline interties and other facilities, the IRWM Region has the ability to make a variety of water transfers. These transfers would typically be used in times of shortage caused by drought or emergency, such as an earthquake. The IRWM Region will be identifying additional interties that would increase the opportunity for future water transfers.

Provide Economic Incentives

Economic incentives, in the form of loans, grants, or water pricing support, are important for successful implementation of projects as a lack of adequate funds can prevent a project from moving forward. Incentives can result in lower operation costs or lower local costs of implementing a project.

The economic incentives strategy can be used to help the Region meet all objectives for the improve water supply reliability goal by incentivizing water conservation, and projects that increase storage, improve disaster preparedness, and monitoring climate change impacts.

Protect Recharge Areas

Recharge areas protection focuses on safeguarding of lands that are important locations for groundwater recharge. Natural recharge areas include stream beds and open spaces that allow water to permeate into the ground, while artificial recharge areas can include ponds or basins that collect water and allow it to permeate. These recharge areas can be protected through land use planning, land conservation and habitat protection programs. If recharge areas cease functioning properly, there may not be sufficient groundwater for storage or use.



Protecting natural areas such as stream beds will improve stormwater recharge.

In the IRWM Region, the United States Geological Survey (USGS) determined that most of the natural recharge occurs in the unlined streams and creeks within the San Bernardino Valley. Recharge also occurs in the flood control detention basins along the foothills. Protection of recharge areas include two primary goals: 1) ensuring that the streams, creeks, and flood control detention basins are not lined with concrete; and 2) preventing pollutants from entering groundwater to avoid expensive treatment that may be needed prior to potable, agricultural, or industrial beneficial uses.

Due to the IRWM Region's high utilization of local groundwater basins, recharge areas protection is a key strategy to ensure the sustainability and reliability of the groundwater supply. Protecting recharge areas will help the Region increase utilization of the local water source.

Review DACs Every 5 Years

Equivalent services are provided for DACs in the IRWM Region. To ensure this continues, the Region plans on reviewing the projects and services in DACs every five years when the IRWM Plan is updated.

5.2.2 Strategies to Balance Flood Management and Increase Stormwater Recharge

Continue Forest Management and Hazardous Fuels Reduction in Forest

SBCFCD has a program to proactively thin trees in the forest that would have historically been thinned by wildfire. This practice reduces flood risk by reducing, or eliminating, debris that runs down streams and fills debris/detention basins following wildfire. Because proactively thinning the forest is a fraction of the cost of cleaning debris, the Region should continue to proactively thin the forest to decrease the potential risk of debris basins be inundated after wildfire. Implementation of this strategy will reduce flood risk and improve the functionality of flood control basins so that more stormwater can recharge the groundwater basins.

Operate Existing Facilities to Increase Recharge

Modifications and/or adjustments to SBCFCD facilities may be needed to effectively integrate water recharge concepts. While the primary function of SBCFCD is 'flood control', water conservation is part of the SBCFCD mission. Cooperation between the SBCFCD and water agencies will allow for further adaptation of flood control facilities with the facilities of other local agencies for the preservation of local waters. All basins and SBCFCD storm water conveyance systems in zones 2 and 3 have potential for utilization in groundwater recharge scenarios given the proper study, design concept, and configuration. In addition, avenues for future SBCFCD/local agency agreements can be sought after and planned so as to truly integrate mutual efforts for water conservation.

Identify Projects that Increase Recharge

Flood control projects, such as new detention basins, can be used to increase recharge of local stormwater runoff in addition to reducing flood risk in the IRWM Region. These projects will have the additional benefit of increasing groundwater storage to improve water supply reliability. Secondarily, these projects will improve water quality in surface waters by reducing stormwater runoff volumes.

Implement Agricultural Lands Stewardship

Agricultural lands stewardship protects and promotes agricultural production through integrating positive water resource management strategies into agricultural activities. This includes preserving agricultural land, maintaining and creating wildlife habitat within agricultural land, reducing land erosion and runoff pollution, removing invasive species, and creating riparian buffers.

Since agriculture is not a large industry in the IRWM Region, practicing agricultural lands stewardship will provide limited benefit to the IRWM Region.

Provide Economic Incentives

As mentioned above, economic incentives can be used to help achieve all the Region's objectives. The Region can continue to seek grants to fund stormwater recharge projects that will improve flood management.

Restore Ecosystem

Ecosystem restoration affects the return of selected ecosystems to a condition similar to its state before any disturbance occurred. Some ecosystems within the IRWM Region remain undisturbed; however, much of the low-lying areas are urbanized and therefore highly disturbed. Additionally, fire suppression in the San Bernardino forest has resulted in tree overgrowth that contributes to basins being clogged with debris as mentioned above. Ecosystem restoration, where possible, will indirectly improve stormwater recharge and the preservation of flood plains.

Coordinate Land Use Planning and Management with Water Resources Management

Land use planning and management uses land controls to manage, minimize, or control activities that may negatively affect the quality and availability of groundwater and surface waters, natural resources, or endangered or threatened species. More efficient and effective land use patterns promote integrated regional water management. Integrating land use and water management consists of planning for housing and economic development needs of a growing population while providing for the efficient use of water, water quality, energy, and other resources.

Through the land use planning and management strategy, the IRWM Region intends to work more closely with land use planning agencies to ensure that they considering and implementing low impact development policies and other BMPs that improve stormwater infiltration and reduce runoff flows.

Protect Recharge Areas

The recharge areas protection strategy, described above, will help the Region improve reduce flood risk and improve stormwater recharge, as well as improve supply, by protecting natural areas such as stream beds to improve stormwater recharge.

Review DACs Every 5 Years

The IRWM Region offers equivalent services for DACs. To ensure equivalent services continue to be provided, the Region plans on reviewing the projects and services conducted in DACs every five years when the Plan is updated.

5.2.3 Strategies to Improve Water Quality

Monitor Consumer Confidence Reports

Retail water agencies in the Region must comply with water quality regulations, including routine sampling of water supplies to ensure compliance. Overall water quality is reported to customers in annual consumer confidence reports. The IRWM Region plans to use these reports as a strategy to ensure drinking water quality standards are met.

Remediate Groundwater Contamination Plumes

Groundwater management is currently influenced by the presence of contamination plumes. Avoiding any impacts to and from the plumes, and removing the contaminants when possible is a Basin Management Objective for the Region and is also consistent with the Groundwater Management Act, Sections 10750-10756 of the California Water Code (AB3030).

Support Bay Delta Conservation Plan

The Bay Delta Conservation Plan (BDCP) is intended to improve habitat in the Delta while improving supply reliability for the SWP. The BDCP will also result in improved water quality for the SWP, primarily in dry years. In dry years, there is less fresh water to keep salt water from flowing into the Delta. The freshwater increases in salts as it passes through the Delta. The BDCP

will move the SWP intakes to the north and bypass the Delta, limiting the increase in salinity during dry years and thereby improving the quality of water delivered through the SWP to the IRWM Region and the rest of Southern California.

Participate in SAWPA Basin Management Task Force

The SAWPA Basin Management Task Force compiles and collects monitoring data to evaluate water quality in the SAR and the groundwater basins. Participation in the Task Force contributes to understanding and reacting to surface and groundwater quality issues in the Region. This strategy will help the Region meet the objective to improve surface and groundwater quality, and manage TDS and nitrate in the Region.

Continue Forest Management and Hazardous Fuels Reduction

This strategy has multiple benefits including the improvement of water quality. As mentioned above, SBCFCD has a tree removal program that proactively cuts trees that would have historically been thinned by wildfire. This program improves water quality by reducing the flow of debris into detention basins following wildfire. The IRWM Region will continue this proactive strategy.

Increase Stormwater Capture

Local stormwater is of very high quality. Therefore, capturing and recharging more local stormwater not only improves water supply reliability but also improves water quality. Capturing stormwater for groundwater recharge can apply to the Region's objective to manage TDS and nitrogen by diluting these constituents with water that is of higher quality than imported water.

Improve Drinking Water Treatment and Distribution



Perchlorate treatment facilities, similar to the West Valley Water District plant above, treat groundwater for use in the Region.

Public water systems must develop and maintain adequate water treatment and distribution facilities to meet the goal of providing a reliable supply of safe drinking water. The drinking water treatment and distribution strategy includes improving the quality of potable water supplied to customers and improving conveyance systems to improve the quality of supplies delivered from treatment facilities. Implementing this strategy will support the IRWM Region's objectives to ensure no violations of drinking water standards by improving water quality and the ability to access and increase groundwater supply that may not have been previously available due to quality concerns. Improving supply quality and distribution will also help achieve the Region's objective to continue to provide high quality drinking water to DACs and throughout the retail water agency service areas.

Implement Pollution Prevention Measures

Pollution prevention controls or reduces pollutants from point and nonpoint sources that can affect multiple environmental resources, including water supply, water quality, and riparian and aquatic habitat. Strategies that prevent pollution can include public education, efforts to identify and control pollutant contributing activities, and regulation of pollution-causing activities. Pollution prevention includes implementation of water quality BMPs that reduce contaminant concentrations to reduce loading to 303(d) listed receiving waters and/or supply sources. BMPs can include either

structural BMPs, where the BMP involves designing and building structural treatment and control facilities, or non-structural BMPs, where the BMP does not require construction of a physical component to filter stormwater.

Projects that remove contaminants using the soil as a filter have the secondary benefit of mitigating flood risk and increasing stormwater recharge, thereby increasing water supply reliability. Pollution prevention can improve water quality for all beneficial uses by protecting water at its source and therefore reducing the need and cost for other water management and treatment options. By preventing pollution throughout the watershed, water supplies can be used and reused for a broader number and types of downstream water uses. Protecting source water is consistent with a watershed management approach to water resources problems.

Manage Urban Runoff

The IRWM Region plans to work with land use authorities to improve urban runoff management which includes strategies for managing or controlling urban runoff, such as intercepting, diverting, controlling, or capturing stormwater runoff or dry weather runoff. Urban runoff management strategies, coupled with centralized groundwater recharge or decentralized low impact development (LID) projects, can also help to improve the ability for those flows to once again reach the groundwater aquifers. Several BMPs can be used to manage urban runoff and prevent surface water quality contamination such as public education, bioswales, permeable pavers, vegetated buffers, rainwater harvesting, construction erosion control, and others. Reducing dry weather flows that are often caused by over-irrigation may also be improved through water conservation programs that aim to improve water use efficiency and efficient irrigation practices.

The urban runoff management strategy supports the Region's objective of to improve surface and groundwater quality and has the secondary benefits of reducing flood risk.

Match Water Quality to Use

Matching water quality to use recognizes that not all water uses require the same quality of water. Agricultural, municipal, landscape and residential water uses have different water quality needs. Achieving water quality standards can also be impacted by natural background conditions, natural flow conditions, irreversible human impacts, hydrologic modifications, natural features of the water body and economic hardships.

Matching water quality to water use by recognizing the different needs, natural background conditions, hydrologic limitations, and economics ensures that limited public resources can be focused on the most significant problems. Benefits of this strategy can include providing cost saving opportunities by reducing treated water costs if users can be supplied with raw water or recycled water, while reserving high quality water for drinking water purposes. This strategy can help the IRWM Region to achieve its goal to improve water quality.

Provide Economic Incentives

As explained previously, economic incentives can be applied to most of the Region's objectives to promote project development and behavior change. Economic incentives such as grants and rebates can help fund projects that treat groundwater and surface water or prevent pollution, such as BMPs.

Coordinate Land Use Planning and Management with Water Resources Management

The IRWM Region plans to work with land use authorities to encourage implementation of the land use planning and management strategy, as mentioned previously, which addresses water resource

issues through effective land planning measures. Implementing LID and BMPs reduces urban runoff and dry weather flows which can improve surface water and stormwater quality.

Protect Recharge Areas

The recharge areas protection strategy can help the IRWM Region meet its goal to improve water quality. Through protecting recharge areas, the Region can infiltrate more stormwater which, due to its high water quality, can improve groundwater quality through diluting TDS and nitrate levels.

Develop Watershed Management Projects and Programs

Watershed management utilizes planning, programs, and projects to restore and enhance watershed functions. Watershed planning encompasses a broader perspective on water resources management, including improving and protecting water quality, ecosystems, and open space. Using the watershed as a basic management unit promotes multi-benefit, integrated projects and collaboration among policies and actions, often requiring the involvement of stakeholders. Given this, projects that use watershed management can help the IRWM Region to meet several of its objectives including improving surface and groundwater quality and managing TDS and nitrogen.

5.2.4 Strategies to Improve Habitat and Open Space

Incorporate Environmental Opportunities and Constraints into the Design Process for Facilities

There may be opportunities to improve environmental resources when designing stormwater capture and recharge facilities. When possible, facilities may be designed to reduce environmental impacts and promote natural habitat.

Identify Corridors for Species

In anticipation of further growth in the IRWM Region, there is a need for a balance between growth of urban areas and the environment to maintain viable habitat for native plant and wildlife species, and to maintain a high quality of life for watershed residents and visitors. An effective means of establishing this balance is the development of open space corridors that allow for multiple species habitat, wetlands, storm flow capture and aquifer recharge, water quality improvements, and passive and active recreational facilities and open spaces. This strategy will be implemented through two habitat conservation plans by identifying corridors used by sensitive wildlife species to move from place to place.



When completed, the Santa Ana River Trail System will extend from Huntington Beach to the crest of the San Bernardino Mountains.

Incorporate Opportunities to Improve Habitat and Increase Recreation and Public Access During the Facilities Design Process

The Region's expanding population means that new facilities will continue to be needed to manage water supplies. The Region has an opportunity to incorporate habitat improvement, and recreation and public access during the design process of these new facilities. This strategy will maintain and create new opportunities for the public to enjoy the area's waterways and other recreational amenities; enhance the watershed's natural features; and ensure access to the Region's wetlands, lakes, and streams.

Provide Economic Incentives

As mentioned in previous sections, economic incentives are useful tools to promote projects. Restoration projects that improve habitat and public access often require additional funding sources to make them economically feasible.

Restoration Ecosystems

The ecosystem restoration strategy discussed previously applies directly to helping the IRWM Region meet its goal to restore and improve habitat and open space. The IRWM Region is currently developing the Upper SAR Habitat Conservation Plan, which will result in habitat for aquatic species.



Ecosystem restoration will help to improve habitat for aquatic species, such as the Santa Ana sucker.

Continue Forest Management and Hazardous Fuels Reduction

Similar to agriculture management strategies, forest management directs the implementation of forest management projects and programs to help support water resources. Such a strategy may include long-term monitoring, multi-party coordination, communication between downstream and upstream communities and water users, and revisions to water quality plans that address concerns with impaired water bodies.

This strategy can help the IRWM Region achieve its objectives to improve habitat and increase multi-benefit recreational and public access opportunities.

Coordinate Land Use Planning and Management with Water Resources Management

As described previously, the IRWM Region will work with land use authorities to implement the land use planning and management strategy that plans for more efficient and effective land use patterns that also promote integrated regional water management. This strategy will help the Region meet its objective to identify more multi-use opportunities that increase recreation and public access. Examples include building recharge basins that can also be used as habitat or adding trial systems around recharge areas.

Protect Recharge Areas

The recharge areas protection strategy can be used to meet the IRWM Region's objectives of restoring and improving habitat and open space when recharge areas, such as streams and channels, are restored to natural habitat to improve recharge. Recharge areas can also be used as recreational areas such as public parks and trail systems to meet the Region's objective to increase multi-use opportunities for recreation and public access.

Maintain and Improve Water-Dependent Recreation

The strategy to maintain and improve water-dependent recreation seeks to enhance and protect water-dependent recreational opportunities and public access to recreational lands through water resources management. Water-dependent recreation within the Region includes opportunities to access or be alongside lakes and river corridors. This strategy is especially applicable to Big Bear Lake where people fish, swim, boat, and participate in other activities such as water skiing in a reservoir.

Develop Watershed Management Projects and Programs

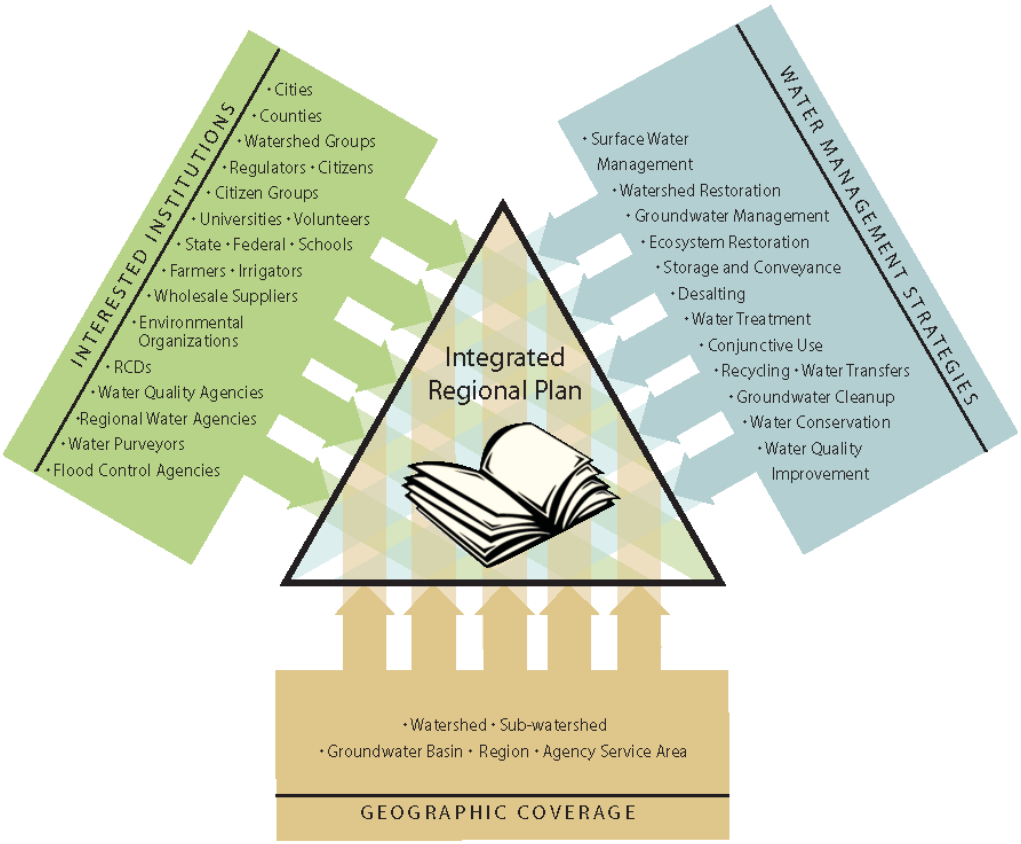
As explained above, the watershed management strategy promotes multi-benefit, integrated projects and can be applied to most of the IRWM Region's objectives. Watershed management involves restoring and improving watershed functions which applies to the Region's objectives to restore habitat.

5.3 Integration of Water Management Strategies

Integrated planning encourages broad investigation of the interrelated strategies and implementation of projects that provide multiple benefits and serve a wide range of strategies. Integrated regional water management planning brings various water interests, stakeholders, and institutions together to plan for future management and use of resources in a large geographic area (Figure 5-1). The BTAC recognized from the beginning of the IRWM planning process that management of groundwater resources, surface supplies, stormwater, and imported water are inseparable and intrinsically interrelated. It is also recognized that water quality plays a critical role in management of groundwater basins and groundwater conjunctive use implementation.

As described throughout this Chapter, a number of strategies can provide multiple benefits to the Region. In addition, interrelated water management strategies can be incorporated into planning and project implementation so that they work together in an integrated fashion. Some examples of such integrated planning are discussed below.

Figure 5-1: Integrated Planning

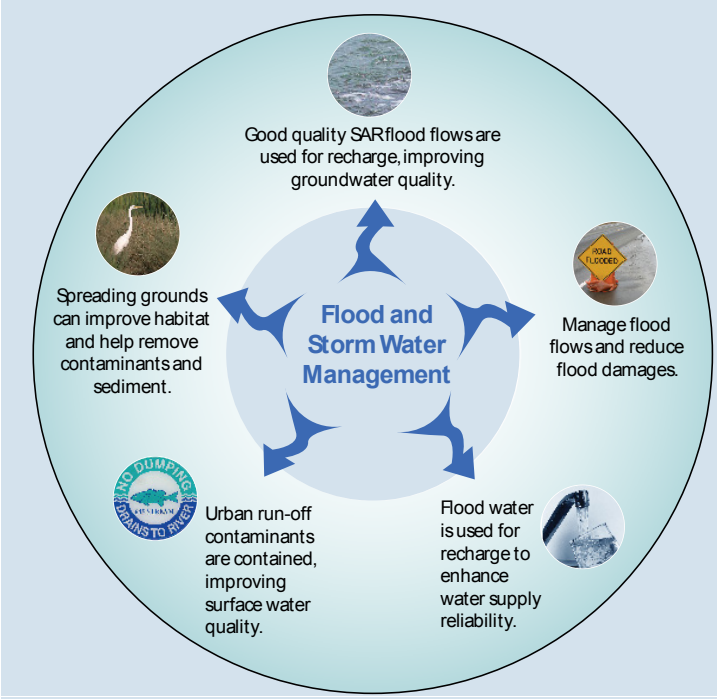


5.3.1 Integration of Local Surface Water and Groundwater Resources Strategies

As discussed previously, groundwater provides a majority of the water supply to the IRWM Region and groundwater basins are used for water storage to regulate the highly variable local surface water supplies. In order to continue to regulate the highly variable surface water in the Region, surface water and groundwater resources must be integrated and optimized. When surface water is available it should be used for recharge as well as direct use. In addition, the Region should work to limit the amount of high flows that go to the ocean in any given year. These goals can be achieved through integration of surface water and groundwater strategies.

5.3.2 Integration of Stormwater Management, Flood Management, Water Supply Reliability, and Surface and Groundwater Quality

Although stormwater can cause flooding, with proper management it could provide a source of water supply to the Region. Improvement in the management of stormwater can help the region achieve multiple objectives while integrating multiple strategies. Generally speaking, stormwater is captured and conveyed to detention basins to reduce peak flood flows and reduce flood damage. However, these detention basins can also be designed to settle the suspended sediment and pollutants out of the water, increase groundwater recharge, and possibly provide wildlife habitat. Use of stormwater for groundwater recharge and use of flood control detention basins for groundwater recharge during the non-flood seasons are strategies that have been used within the region and should be further enhanced to improve water supply reliability and groundwater quality in the Region.



Integration of Water Management and Flood Management Strategies in the Upper Santa Ana River Watershed

5.3.3 Integration of Water Supply and Reliability and Water Quality Strategies

Contamination plumes present a challenge and constraint for management and use of groundwater resources in the IRWM Region. An integrated approach has been taken to clean the plumes, which will eventually remove them as a constraint and improve water supply reliability for water users. Wherever possible, cleanup projects should seek to speed the cleanup of a contamination plume by pumping and treating water from key locations in the plume. This type of strategy can expedite the clean-up process.

5.3.4 Integration of Imported Water and Local Water Supplies and Strategies

The IRWM Region has a significant public investment in and is dependent upon imported water to meet its water needs into the future. However, the SWP can be unreliable. To improve the reliability of SWP water supply, the Region should take delivery of its entire Table A amount each year and store any "leftover" amount that is not used directly by the local water agencies. The water could be stored

within local groundwater basins or in a "water bank." By storing as much SWP water as possible during "wet" years, the Region will have that water available during drought periods.

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6 Projects

This chapter describes the projects that have been identified to help to meet the Region's objectives, and presents the process that will be used by the USARW IRWM Region to evaluate new projects once the plan has been adopted.

Many projects have been proposed by project sponsors in the IRWM Region to implement the water management strategies identified in this IRWM Plan. A "snapshot" of the project list at the time of this plan update is presented in Appendix J. Valley District will be developing a webpage on the Valley District website that will store an up-to-date project list for public viewing. The development of this webpage is discussed further in Chapter 7.

The focus of the Region's IRWM projects is driven by the IRWM Plan Goals and Objectives formulated during the planning process. These goals, discussed in detail in Chapter 4, include: 1) improving water supply reliability, 2) balancing flood management with increased stormwater recharge, 3) improving water quality, and 4) improving habitat and open space.

6.1 Project Submittal

The project submittal process is an ongoing process that allows for updating projects and including new projects. New projects will be reviewed and prioritized based upon the criteria developed by the IRWM Region (see page 6-3).

Some of the projects were taken from previous planning efforts, such as projects that will allow the Region to capture and use SAR floodwater. Projects included in previous SAWPA planning studies and UWMPs were also evaluated to identify specific projects that could achieve the objectives of the Region.

In a series of meetings starting in March 2006 and continuing through the present, members of the BTAC members reviewed the list of projects and provided additional input. The BTAC Project Implementation Group (PIG) is currently responsible for project evaluation and prioritization. Water agencies within the area that are not part of the BTAC are also encouraged to participate in development of the project list. Most of these projects are integrated and serve multiple strategies. Together, these projects help develop a regional system that would integrate the use of groundwater, SWP water, flood and stormwater, and local surface water to meet the Region's goals and objectives.

6.2 Project Prioritization and Screening Process

The primary purpose of project prioritization and ranking is to provide a process for water leaders in the IRWM Region to review the proposed projects and collectively decide the Region's priorities for the construction of facilities. To facilitate this task, a two-step prioritization and ranking process was developed. The first step reviews the projects to ensure that the project has a sponsor and meets the planning objectives and strategies as shown in Figure 6-1. The projects that do not pass the first step will not be eligible for inclusion in the IRWM Plan. The second step is to prioritize the projects that pass the first step. This is accomplished by first scoring the projects using the criteria outlined in Table 6-1 and then prioritizing them as either Tier 1 or Tier 2 through the project ranking process shown in Figure 6-2. It is important to note that project ranking and prioritization is a "snapshot in time" and that projects will move from tier to tier as they are further developed and meet the criteria requirements.

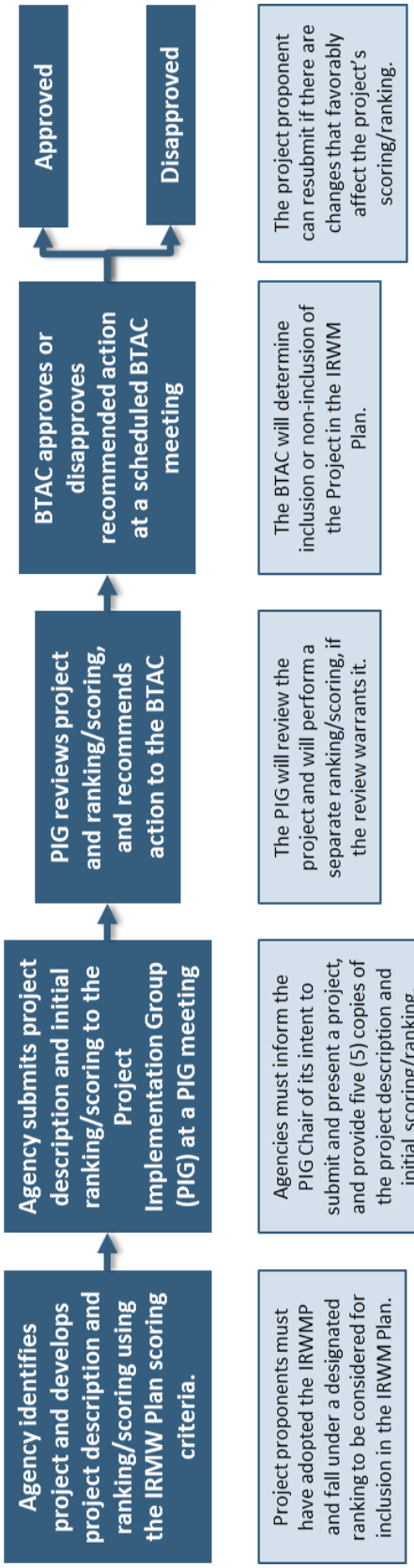
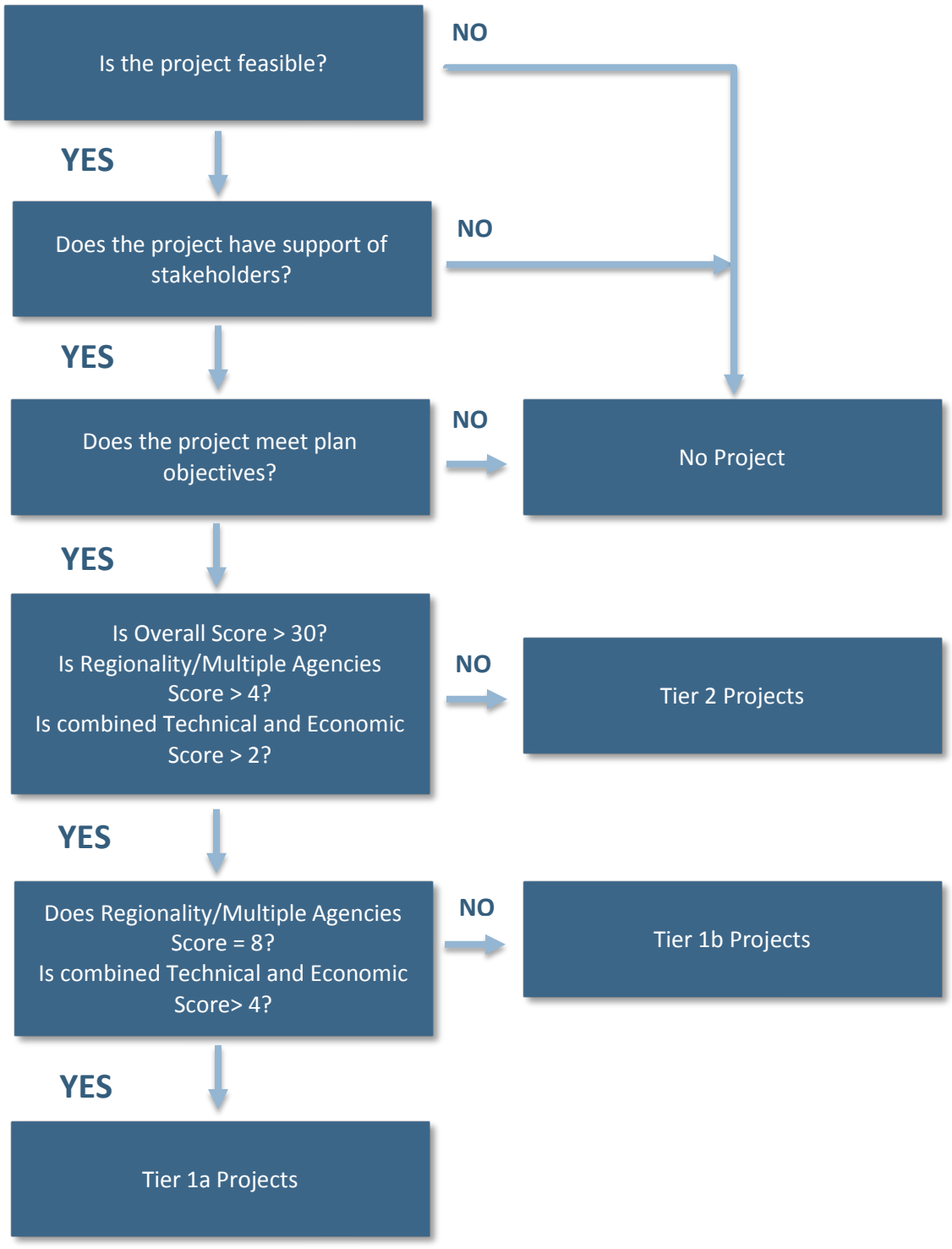


Figure 6-1: Upper SAR IRWM Plan Project Review Process

Table 6-1: Project Scoring Criteria

	Criteria	Scoring
Project Effectiveness	1 – Meet IRWM Plan Objectives	+1 for one objective +2 for each additional objective
	2 – Supports Integration and Multiple Water Resource Management Strategies	+1 for single strategy +5 if integrated +8 if integrated and supports multiple strategies
	3 – Technical Feasibility of the Project	+1 if knowledge of location and of the water system is demonstrated, or +2 if knowledge of location, of the water system, and with the material, methods, or processes proposed to be employed in the project is demonstrated.
	4 – Regionality/Multiple Agencies	+0 project that only serves single agency +5 project that combines the projects of up to three agencies +8 project that combines projects from more than three agencies
Project Commitment	5 – Project Status	+1 limited information +3 completed feasibility or pre-design documents +5 environmental and feasibility and detailed scope of work and budget completed
	6 – Project Costs and Financing	+0 no funds +2 10% funding +3 50% funding +5 90% or more funding
Other Critical Project Considerations	7 – Economic Feasibility	+1 limited information +3 completed feasibility and cost benefit analysis +5 strong tie to water quality and water supply benefits and other benefits and costs
	8 – Has Project Proponent Adopted Latest Updated IRWM Plan	+0 No +3 Yes
	9 – Consideration of Environmental Justice Concerns (Tribes/DACs)	+2 demonstrates specific benefits to critical DAC water issues, or +2 demonstrates specific benefits to critical Native American tribal communities, or +2 demonstrates consideration of Environmental Justice concerns. A total of +6 if project is able to address all three.
	10 – Adapting to the Effects of Climate Change	+0 increases energy usage +3 no increase in energy usage +5 reduces energy usage
	11 – Reducing Greenhouse Gas (GHG) Emissions	+0 no reduction in GHG emissions +3 consideration of options for carbon sequestration +5 demonstration of significant reduction in GHG emissions through a GHG emissions analysis
	12 – Reduce dependence on Delta	+0 no reduction in Delta water +3 demonstration of some reduction in Delta dependence +5 demonstration of significant reduction in Delta dependence

Figure 6-2: Planning Process for Project Screening and Ranking



Projects are evaluated on several criteria, as shown in Table 6-1. These include:

- Whether the project is regional;
- If the proponent has adopted the USARW IRWM Plan;
- The technical and economic feasibility of the project;
- If the project addresses the needs of DACs or tribes within the Region;
- If the project considers environmental justice concerns; and
- How the project helps adapt to climate change impacts and reduce GHG emissions.

After being scored, projects were ranked as Tier 1a, Tier 1b, or Tier 2. These categories are explained below.

Tier 1 Projects

Tier 1a and 1b projects score greater than 30 points according to the scoring criteria shown in Table 6-1, and meet the following criteria:

- Projects have completed or will complete environmental documentation, feasibility studies and cost estimates by July 1, 2015, and will be ready for implementation by July 1, 2016 (design will be completed).
- Projects have the support of stakeholders
- Projects meet IRWM Plan objectives
- Projects include up to three agencies as stakeholders
- Projects demonstrate knowledge of location of the water system, and with the material, methods or processes proposed to be employed in the project
- Projects demonstrate economic feasibility
- Projects serve the Region and reduce regional water supply system vulnerability
- Projects meet specific benefits to critical water issues related to DAC, Native American tribal communities or environment justice concerns
- Projects that reduce energy usage, reduce GHG emissions and adapt to the effects of climate change

Projects are further divided into Tier 1a and Tier 1b, where Tier 1a projects are regional (serve more than three communities), demonstrate greater technical feasibility, and greater economic feasibility.

Tier 2 Projects

Tier 2 projects include those projects that may not be regional, not have provided information regarding economic feasibility, and/or do not demonstrate technical knowledge. Once a Tier 2 project meets all of the necessary criteria, it can become a Tier 1a or Tier 1b project.

To prioritize and rank the projects, a set of scoring criteria were developed and reviewed by the BTAC. The criteria were then applied to all projects to prioritize implementation. A detailed list of projects available at the time this IRWM Plan was finalized and prioritization results, is shown in Appendix J.

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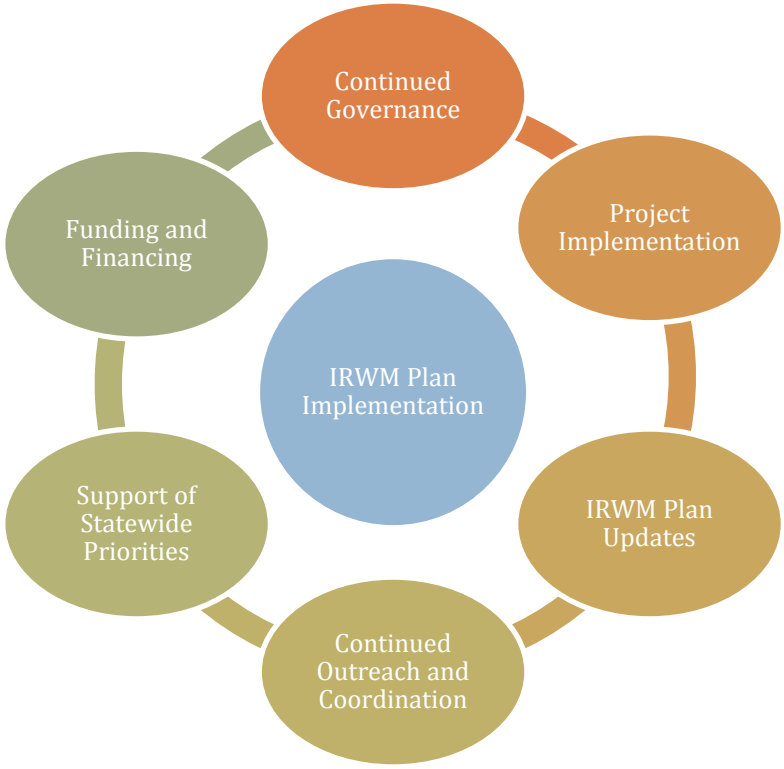
7 Implementation

This chapter provides the roadmap for accomplishing the Region's objectives and implementing projects included in the IRWM Plan. As described in Chapter 1, the BTAC has already made significant progress implementing the IRWM Plan. To date, the agencies located within the IRWM Region have been successfully implementing their strategies along with projects and are continuously monitoring progress toward their goals and objectives. The Region plans to continue within its current governance structure and in some cases improve upon IRWM Plan implementation as described in the sections below.

Figure 7-1: IRWM Plan Implementation Components



7.1 Continued Governance

The responsibility for implementation of the IRWM Plan will continue to be guided by the BTAC agencies, all of whom participated in the planning process and prepared this update of the IRWM Plan. The implementation responsibility will continue to be shared among the BTAC agencies based upon the jurisdiction of each responsible entity. The Region will continue its current governance structure, which has proven itself to be effective in both implementation of the 2007 IRWM Plan, as well as with other regional water resources planning efforts such as management of the SBBA and the SAR watershed.

7.2 Project Implementation

Project implementation is the responsibility of each project sponsor. For projects funded through IRWM-related grant programs, the BTAC will work with regional agencies to coordinate, apply, receive, and distribute the grant funding for project implementation. Projects formulated for the

IRWM Plan must periodically be updated and reprioritized, and new projects may be introduced for screening and prioritization. Activities necessary to update and prioritize projects will continue to be the responsibility of the BTAC PIG. Project implementation responsibilities include coordination with the appropriate local, State, and federal agencies to prepare and complete necessary environmental documents and to pursue opportunities to fund the projects that are under their jurisdiction, consistent with the IRWM Plan.

7.3 Periodic Review and Update of the IRWM Plan

In order to keep the IRWM Plan current, it should be refined as necessary, but no less than every five years. These refinements will be the result of knowledge gained through implementation of the IRWM Plan. The BTAC will assume responsibility for making updates to the IRWM Plan. Reviews and updates will focus on analyzing new information developed since the adoption of the previous IRWM Plan and the need for specific water management actions. The reviews would identify areas where the IRWM Plan has been successfully implemented, as well as areas where deficiencies are apparent.

The BTAC will continue to coordinate the regional planning activities of the IRWM Plan as needed, and coordinate with other IRWM planning efforts surrounding the Region, and with State and federal agencies.

Implementation of monitoring programs and data management and coordination is the responsibility of the entities managing the basins. This includes the BTAC for the SBBA, Rialto-Colton Subbasin, Yucaipa Subbasin, San Timoteo Subbasin, and North Riverside Basin, and Big Bear MWD for the Big Bear Lake Basin. Monitoring and data management for the USARW IRWM Plan is discussed in more detail in Chapter 8.

7.4 Continued Outreach and Coordination

Continued outreach and coordination with regional stakeholders and other planning efforts will be key to implementing this IRWM Plan. In keeping with the Region's efforts to involve stakeholders in its IRWM planning efforts, the Region will develop an IRWM Plan webpage to make available the IRWM Plan, an up-to-date project list, and information on BTAC meetings such as meeting announcements, agendas, and materials. Additional information may be posted as appropriate, such as IRWM Plan performance data and information on how to become involved with the BTAC. Valley District will be responsible for creating and maintaining the website, though the BTAC will contribute to providing information.

As the IRWM Plan contains vetted information on the Region's environment, potential climate change impacts, water supply and demand, and water management goals and performance measures, the IRWM Plan can be used to inform other water resources planning documents such as groundwater management, flood protection, watershed management, and water quality plans. In particular, the Region's IRWM Plan continues to be used as a reference for the San Bernardino Valley Regional UWMP. The regular collection of plan performance and monitoring data allows for the information in the IRWM Plan to be easily updated at least every five years.

The IRWM Plan can also coordinate with land use planning efforts and incorporate land use planning issues and strategies into water management decisions. Though agencies in the BTAC already take part in the San Bernardino Countywide Vision Project water element, there may be additional opportunities for involvement of land use planners with water resources planning, such as those opportunities shown in Figure 7-1. To further assess these opportunities, the Region will identify land use authorities, and meet with them to coordinate and discuss coordination opportunities. Once opportunities have been identified, the BTAC may further work with the land

use authorities to incorporate issues and strategies from land use planning into water management plans, conduct regular meetings between water managers and land use planners, ensure land use planners are invited to BTAC meetings, or even include land use planners in the BTAC.

Figure 7-2: Opportunities for Coordination Between Land Use Planning and Water Management

Opportunities for Land Use Planners to Provide Input to Water Managers	Opportunities for Water Managers to Provide Input to Land Use Planners
• Floodplain management • Flood control planning • Groundwater recharge and conjunctive water use • Treatment and conveyance facilities • Water conservation • Watershed management and restoration	•Municipal landscaping programs •Public access and recreational area management •Changes in land use •General Plan updates •Planning and development review •Water supply for public safety and emergency planning purposes •Habitat management

7.5 Support Statewide Priorities

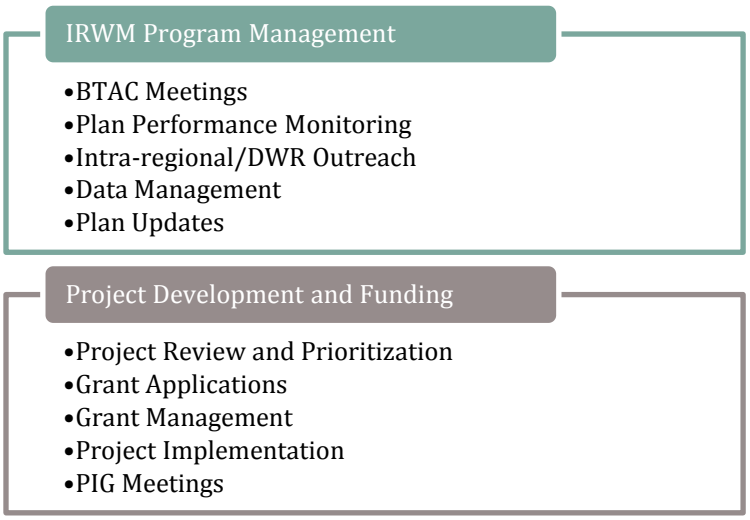
Improving water supply reliability and reducing reliance on the SWP during droughts is considered an issue of statewide significance. Environmental and fishery issues of the Delta, including endangered species, vulnerability of Delta levees, and Delta water quality issues, significantly reduce reliability of the SWP supplies. Recently, State water leaders and the Governor's Office have renewed discussions of building a Peripheral Canal around the Delta as an alternative to the current operations in the Delta. The Peripheral Canal has the potential to improve fishery issues, reduce the impact of water diversions on listed species, and improve drinking water quality (less TDS, trihalomethane, and bromide) for millions of Californians. These improvements to the Delta would result in increased reliability for the SWP supplies. The resolution of Delta conveyance issues, therefore, will benefit the Region and its water supply, and will significantly contribute to water supply reliability and water quality improvement in the USARW IRWM Region.

It should also be noted that a major consideration and a regional priority for formulation of this IRWM Plan is to improve water supply reliability and optimize the use of imported water to reduce reliance on imported water during droughts. Implementation of water management strategies of this IRWM Plan, therefore, will reduce stresses on SWP supplies, especially during drought periods, and will provide statewide water supply benefits.

7.6 IRWM Plan Funding and Financing

The Region plans for and secures funding and financing to implement the IRWM Plan, including ongoing IRWM Program management activities and project development and implementation. These components have specific activities, which are shown in Figure 7-2.

Figure 7-3: IRWM Funding and Financing Activities



7.6.1 Funding and Financing Options

While regular BTAC meetings and other IRWM program operations generally rely on in-kind staff time and occasional assessments, project implementation may require a wider variety of funding options. Depending on the characteristics and scope of a particular project, some activities and projects currently identified in the IRWM Plan and future activities will likely be contingent on securing funding from federal, State, and/or local sources. Therefore, it is important for the BTAC, in coordination with project sponsors, to develop a financing plan that identifies funding sources and further refines priorities for project implementation. In addition, the agencies should actively engage in obtaining grant funding to assist in project implementation.

Potential funding sources include: water rates; assessments, fees, and taxes; loans and grants; and bonds. Methods for collecting this funding include in-kind time provided by BTAC agencies and project sponsors, as-needed assessments, and applying for loans and grants.

The following summarizes project funding approaches to date, as well as anticipated funding strategies.

Federal Funding

The federal grant funding sources are currently limited. The U.S. Bureau of Reclamation's (Reclamation) Challenge Grant Program provides funding for water management programs and projects in the western United States. This grant program might help fund the implementation of water conservation projects. Reclamation also provides funding for water recycling programs in Southern California. The U.S. Environmental Protection Agency (EPA) provides funding for environmental improvement projects. In addition, funding can be directed for implementation of projects under the IRWM Plan, through the Federal Energy and Water Development Appropriations legislation.

State Grant Funding

State funding may be a significant source of funding for implementation of the IRWM Plan. Current key State funding sources include the following:

- DWR's Proposition 84 IRWM Program, which provides funding for implementing multi-benefit projects that are included in IRWM Plans of DWR-accepted IRWM Regions (including the SAWPA Region, which the USARW Region is a part of)
- DWR's Local Groundwater Assistance Program, which provides funding to conduct groundwater studies or carry out groundwater monitoring and management activities
- DWR's Desalination Grant Program, which provides funding to conduct research, feasibility studies, pilot projects or construction of desalination projects (both ocean and groundwater)
- DWR's Water-Energy Grant Program, which provides funds to implement water use efficiency programs or projects that reduce GHG emissions, and reduce water and energy use
- SWRCB Recycled Water Facilities Grant, which provides funding for the planning, design, and construction of water recycling projects

Local Agency Funding

For years, local entities have been implementing cost-effective projects and programs at the local level. In the past, local funding has been used in part or in total to fund local water projects. Today, however, a major constraint in implementing many of the projects in this IRWM Plan is the lack of financial capacity and funding availability at the local level. Some of the communities in the IRWM Region are economically disadvantaged and they may not be able to finance costly projects. Bond laws generally require local agencies to share the cost of implementing their project unless the project benefits an economically disadvantaged community, in which case, the community could be qualified for exemption from local cost-sharing requirements.

7.6.2 Financing Plan

As mentioned previously, the agencies in the Region have successfully collaborated in management of their water resources for a number of years, allowing them to come together in 2005 to form the USARW IRWM Region and develop the first IRWM Plan. These efforts have been supported primarily through in-kind time from BTAC agencies and without being dependent upon outside funding to support the IRWM program. The Region intends to continue operating its IRWM program through local support from in-kind staff time. Table 7-1 shows the Region's funding and financing plan to achieve the IRWM Program management, project review and prioritization, project grants, project implementation, and planning needs.

Table 7-1: Financing Plan

Activity	Approximate Cost or Time Commitment	Funding Source and Percent of Cost	Funding Source Certainty/Longevity
IRWM Program Management			
Regional Program Management • BTAC Meetings • Plan Performance • Intra-regional collaboration • Data Management • Plan Updates • BTAC Water Conservation Subcommittee • Engineering Subcommittee	• 700 hrs/yr[1]	In-Kind: 100% BTAC Agencies Funds: BTAC Agencies	• On-going agency staff allocations • BTAC agency operating budget
Project Development and Implementation			
Project Review and Prioritization • PIG Meetings	Approximately annually	In-Kind: 100% PIG Agencies	On-going agency staff allocations
Project Grants • Grant Application • Grant Management	Dependent upon specific grant program	In-Kind: 100% Project Sponsors Funds: Member Agencies	• Contingent on funding available and # of projects • Contingent on grant program success
Project Implementation	Dependent upon type and size of project	In-Kind: Project sponsor Funds: Project sponsor agencies, grants, and loans	• On-going for the life of the project • Agency funding and staff allocations • Contingent on funding available • Contingent on grant program success

7.7 Obstacles to Implementation

The most significant obstacle to implementation of the IRWM Plan is funding of capital improvement projects. Considering the limited financial capacity of the agencies in the IRWM Region, it would be very difficult to fund projects with an estimated cost of $2 billion. Steps that can be taken to remedy funding obstacles include development of a capital improvement plan, implementation phasing, obtaining grant funding, and forging partnerships to fund major projects.

[1] These hours are approximated using the following assumptions: monthly meetings of the BTAC's 14 agencies (3 hours per meeting), development of annual plan performance reports (12 hours per year), annual project review and prioritization by the PIG (12 hours per year), monthly intra-regional collaboration (2 hours per month for one representative to attend SAWPA meetings), monthly data management for Valley District (2 hours per month), Plan Updates every 5 years (800 hours, annualized to 160 hours per year)

No other insurmountable obstacles to implementation of the IRWM Plan have been identified. As described earlier, the agencies within the Region have successfully worked together in the past on the development and implementation of projects and programs to improve the water resources management within the Region. Working together, these agencies have developed successful relationships, enabling them to accomplish tasks that satisfy the varied interests within the IRWM Region. Developing these initial relationships, trust, and accountability among the participating groups is one of the biggest challenges to any regional cooperation. The stakeholders and interested parties within the IRWM Region can continue to successfully work together to implement future projects to improve the water resources management for the citizens of the Region.

7.8 Impacts and Benefits of the USARW IRWM Plan

The Region has evaluated the impacts and benefits of implementation of the IRWM Plan, and considered all objectives, strategies and projects included as a part of the IRWM Plan. Given the integrated nature of the IRWM Plan, it's difficult to determine any specific benefits or disproportionate impacts to DACs or create environmental justice concerns. It's assumed that all projects will complete the State and/or federal environmental documentation necessary to fully analyze any project-specific impacts that may occur, including those to DACs or any environmental justice concerns.

7.8.1 IRWM Plan Benefits

One of the most significant benefits of the IRWM Plan is the planning process itself. The process has created a cooperative environment among all agencies in the Region, which meet on a regular basis to discuss the water management issues and plan for meeting future water needs of the Region. The agencies worked together to develop solution-oriented programs, they forged agreements, and they work together to provide the most basic and essential service to the communities—serving water. The IRWM planning process provided a framework for developing regional and integrated solutions.

Full implementation of the IRWM Plan will result in multiple benefits associated with meeting the objectives identified in Chapter 4. Key public and overall benefits from implementation of the plan elements include the following:

- Significant improvement in water supply reliability during drought periods while reducing reliance on imported water.
- Improved and coordinated management of the Region's surface water and groundwater resources, including conjunctive management of groundwater and surface water resources and recharge of groundwater basins.
- Improved water quality through effective management of groundwater resources, expediting cleanup process of contaminant plumes in the Region, and improving stormwater management.
- Improved flood protection.
- Plan to address climate change vulnerabilities including reduced GHG emissions and energy usage.
- Improved distribution and water quality to disadvantaged communities.
- Expanded environmental stewardship.
- Enhancement of water-dependent environmental assets.

- Improved water-related education, recreation, and public access opportunities in the Region.
- Improved understanding of the Region's water resources, including focused regional monitoring to ensure groundwater is used in a sustainable manner.
- Improved coordination of water management activities of the Region through sharing of ideas and mutually beneficial management of project opportunities.
- Coordinated development of water management strategies and associated projects.
- Improved preparation for a disaster.

The aforementioned benefits will be realized both within and outside of the Region as neighboring areas can benefit through inter-regional collaboration with SAWPA, as well as collaboration with agencies that overlap larger area, such as Western.

7.8.2 IRWM Plan Impacts

The potential negative impacts from implementing most of the projects in the Region's IRWM Plan are anticipated to be primarily short-term facility construction impacts. It is proposed that conjunctive water management projects include a monitoring and assessment element to evaluate the impacts of project implementation. Monitoring and assessment elements will provide tools to evaluate and modify project operation to mitigate potential impacts.

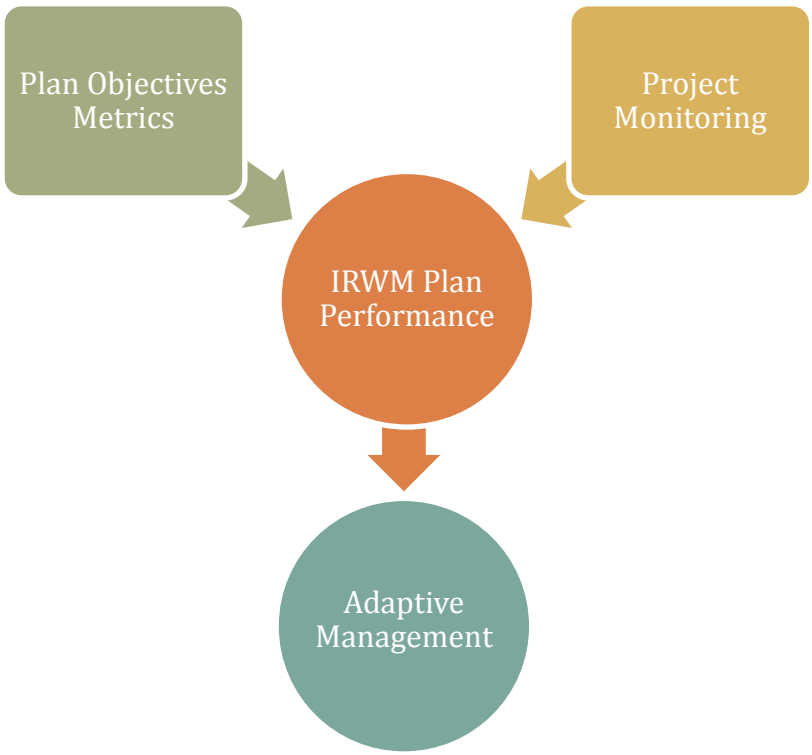
7.8.3 Environmental Documentation and County Ordinance Compliance

Permitting and environmental documentation will be required for new project facilities in accordance with federal, State, and local laws and ordinances. The project-specific environmental compliance will be performed by project sponsors on a case-by-case basis prior to project construction. Impacts and benefits of the proposed actions will be further assessed. All actions and investigations will be coordinated with local, State, and federal agencies to share information and ensure compliance with applicable laws and ordinances.

8 Data Management, Plan Performance and Adaptive Management

This chapter summarizes how data management and plan performance of the IRWM Plan will be conducted. The chapter is organized in three parts: 1) IRWM Plan Performance, which will describe how the Region will track progress in meeting its IRWM Plan objectives, 2) Data Collection, Monitoring and Management, which will describe how the Region collects and manages the data used to measure IRWM plan performance, and 3) Adaptive Management, which will describe how the Region will use the above information to adapt the IRWM Plan as changes occur in the Region.

Figure 8-1: Data Monitoring, Plan Performance and Adaptive Management Process



8.1 IRWM Plan Performance

In order to ensure that the IRWM Region is making progress towards implementing its IRWM Plan, it reviews and tracks Plan performance in two areas:

1. *Plan Objectives:* The Region tracks progress in meeting the IRWM Plan's objectives by tracking its various performance measures over time
2. *Project Monitoring:* The Region uses each project's monitoring plan to track performance of implemented projects

Plan Objectives Monitoring

The BTAC is responsible for monitoring progress in meeting IRWM Plan objectives on a periodic basis, and including the data as a part of the data management system described in the Section 8.2. The results of monitoring are presented at BTAC meetings, and are incorporated into regular IRWM

Plan updates to help the Region re-evaluate needs, objectives, and strategies. In addition, progress in meeting IRWM Plan goals will be reported every six months to the San Bernardino Valley Municipal Water District Advisory Commission on Water Policy.

The Region developed a number of performance measures that can be used to measure progress in meeting the objectives described in Chapter 4 of the IRWM Plan, and are shown in Table 8-1.

Table 8-1: Objectives and Performance Measures

Objective	Performance Measure
1a: Reduce demand 20% by 2020.	• Change in gallons per capita per day consumption • Change in AFY of agricultural water use
1b: Increase utilization of local supplies by 23,000 AFY. • Stormwater: 20,000 AFY • Recycled water: 3,000 AFY	• Change in AFY of stormwater captured • Change in AFY of recycled water use
1c: Increase storage by 10,000 AF.	• Change in AF of groundwater storage • Change in AF of reservoir storage • Documentation of maintenance of groundwater levels to reduce liquefaction risk • Number of projects implemented to manage high groundwater
1d: Prepare for disasters by implementing two new interties between water agencies.	• AFY of local supply projects implemented • AF change in storage as reported in groundwater management reports • AF of additional storage in reservoirs as reported in Urban Water Management Plans • Number of retail agency intertie projects implemented
1e: Monitor and adaptively manage climate change impacts by implementing three projects that reduce energy demands.	• Number of projects implemented in Region that promote adaptation strategies and reduce water related greenhouse gas emissions • Documentation of monitoring of climate change impacts
1f: Ensure equivalent water supply services for DACs	• Number of water supply projects benefiting DACs
2a: Utilize 500 acres of flood control retention/detention basins that are not actively used for recharge.	• Number of projects implemented that allow flood control basins to also be used for groundwater recharge • Development of engineering tools and methods to further the confidence in local weather forecasts and evaluate the risks of impounding water • Development of plans for additional maintenance, weed control, scarifying, and monitoring of water in spreading basins
2b: Reduce FEMA reported flood area.	• Number of projects implemented that reduce flood risk • Number of acres of flood plains preserved
2c: Ensure equivalent implementation of flood projects in DAC areas and implement at least one flood project in a DAC area.	• Number of flood risk reduction projects implemented that benefit DACs

Objective	Performance Measure
3a: Ensure no violations of drinking water quality standards.	• Documentation of meeting state and federal drinking water quality standards
3b: Improve surface and groundwater quality by treating 3,000 AFY.	• Number of projects developed to clean up contamination plumes • Change in AFY of stormwater captured
3c: Manage total dissolved solids and nitrogen in groundwater.	• Number of projects developed to manage TDS and nitrogen in groundwater
3d: Ensure equivalent water quality services for DACs.	• Number of water quality improvement projects benefiting DACs
4a: Improve habitat and open space by 1,200 acres.	• Number of projects implemented that restore and enhance habitat and open space • Number of acres of habitat and open space restored or enhanced
4b: Identify "multi-use" opportunities to increase recreation and public access and identify at least one multi-use project.	• Number of projects developed that implement "multi-use" opportunities to increase recreation and public access

Project Monitoring

Implementation of the projects selected for inclusion in the IRWM Plan will help the IRWM Region to meet its objectives. To track this information, project sponsors will be responsible for preparing a monitoring plan for their project. Information similar to that which is included in a Project Assessment and Evaluation Plan (PAEP) would be developed for projects prior to implementing the project. The goals of a PAEP are as follows:

- To provide a framework for assessment and evaluation of project performance,
- To maximize the value of public expenditures to achieve results,
- To identify measures that can be used to monitor progress towards achieving project goals, and
- To provide information to help improve current and future projects.

The monitoring plan will be based on project-specific information, and will:

- Describe project characteristics and the project sponsor
- Demonstrate consistency with local planning documents such as the IRWM Plan
- Identify project goals and link goals with desired outcome
- Select performance indicators
- Identify expected benefits and impacts
- Determine outcome indicators (site-specific, regional, and system-wide)
- Identify/implement monitoring needed to evaluate a project's performance, including frequency, locations and protocols/methodology
- Identify procedures to keep track of what is monitored and ensure the monitoring schedule is maintained and adequate resources (including funding) are available

- Analyze and assess data
- Evaluate overall success of the project
- Communicate the results to the BTAC

Project proponents will be responsible for providing data collected through project monitoring to the BTAC for use in tracking progress in meeting objectives.

8.2 Data Collection, Monitoring and Management

The IRWM Region has a long history of collecting and monitoring data to allow effective management of its water resources. These efforts have been incorporated into the IRWM Plan to support regional data collection, integrate with other regional and statewide programs, and identify data gaps.

8.2.1 Data Collection and Monitoring Efforts

An extensive network of data collection and monitoring is already in place in the IRWM Region. Currently, the following data are being collected in the Region:

- *Groundwater data*: Groundwater monitoring is in place for measuring groundwater production, water quality, and water levels representative of the various subbasins. Groundwater level data were used to evaluate the groundwater level trends as well as to evaluate the groundwater flows and included the following:
    - Target wells used in the groundwater model. A list of these wells, as well as a map showing the location of the targeted modeling wells, is presented in Appendix B.
    - Groundwater monitoring wells identified in various agreements (e.g., Seven Oaks Accord, Riverside Agreement). Monitoring of these wells is required to ensure full compliance with the terms of the agreements. A list of these wells is presented in Appendix B.
    - EPA/City of San Bernardino Newmark-Muscoy plume(s) monitoring wells.
    - Local purveyors' water production data required by judgments and provided to the Watermaster. All purveyors of wells that pump groundwater are required to report the annual production of the wells to the Watermaster. Production data are then presented in an annual report prepared by the Watermaster.
    - SBVWCD Engineering Investigations review groundwater production and storage in the Bunker Hill Subbasin.
- *Stream gage data*: Stream gages in the Region are operated by either the USGS or the SBCFCD and allow for stream flow data to be collected throughout the watershed.
- *Drinking water quality data*: Water quality data collected by water purveyors for all sources of water. These data are periodically monitored according to Title 22 and are required by the CDPH Division of Drinking Water and Environmental Management.
- *Water supply and demand data*: Water supply and demand data are reported by water purveyors in UWMPs every five years, and are required by DWR.
- *General Plan land use*: Information on land use is available through city and county general plans.

- *Santa Ana River flow data*: Santa Ana River Watermaster Reports contain information on flows and status in meeting flow requirements.
- *Project monitoring reports*: As discussed previously, project sponsors are asked to collect monitoring data on their implemented projects and communicate the results to the BTAC.
- *Surface and ground water quality data*: SWRCB regularly updates its Integrated Reports and 303(d) lists of quality impaired waters.

In order to track all of the performance measures listed in Table 8-1, it may be necessary to collect and monitor additional data not currently collected on a regular basis. These data needs include: GHG emissions from treatment and conveyance of water resources, information regarding changes in flood plain area, additional stream gages to improve flows in key areas to improve stormwater capture (such as above Seven Oaks Dam), and ongoing groundwater quality mapping to track changes in quality as treatment projects are put into place.

A monitoring plan has been developed for the Region as a component of the IRWM Plan to formalize and standardize data collection procedures that focus on groundwater and surface water. The objectives of the monitoring plan are to:

- Provide a standard methodology for the collection, storage, and reporting of hydrologic data.
- Document the collection of data needed for management of the groundwater basin to meet the requirements of various judgments. In the SBBA and other adjudicated basins, the Watermaster is responsible for collection, review, and compilation of the data needed for management of the basin and for providing a level of coordination among many water users.
- Provide the data needed for developing the "Annual Operation Plan" for management of the SBBA.
- Provide standardized procedures to collect source water data that agencies use to meet requirements of the CDPH drinking water standards.

Remaining data not collected as a part of this monitoring plan is expected to come from existing databases and monitoring efforts with established procedures. The Region assumes that the agencies performing these data collection and monitoring efforts have procedures in place to ensure accuracy of the data.

8.2.2 Data Management

Data that is collected is stored, organized, and secured in electronic databases and spreadsheets by the agency responsible for the data.

Data collected in the Region will be available to the stakeholders, DWR, and other local and state agencies. Data collected in support of state-funded water quality-related projects will be made available to the SWRCB's Surface Water Ambient Monitoring Program and Groundwater Ambient Monitoring and Assessment Program. Valley District collects and reports water level data to the California Statewide Groundwater Elevation Monitoring (CASGEM) program for the Bunker Hill, Rialto-Colton, and Yucaipa Subbasins.

Data collected each year is used in a variety of different reports, including the BTAC management plan which is completed on an annual basis. Overall progress in meeting each IRWM Plan objective will be reported every five years as a part of regular IRWM Plan updates.

8.3 Adaptive Management

The USARW IRWM Plan represents the current state of water resources planning in the Region, based upon available information, and recognizes that water management strategies will continue to evolve in response to changing conditions. In recognition of the fluid nature of water management in the Region, the IRWM Plan incorporates an adaptive management approach that is intended to allow the IRWM Plan to stay current in light of changing conditions, such as local and regional water needs and changing regulatory requirements.

Given changing conditions, the planning process is continually evolving and developing additional data that improve the Region's understanding, which may redefine objectives and priorities to respond to these changing conditions.

The adaptive management framework is based on an iterative process of:

- Collecting information and data regarding the conditions within the Region
- Evaluating the new data to determine plan/project performance
- Formulating a plan in response to these changing conditions

Using data collected and monitored as part of IRWM Plan performance tracking discussed above, the Region will periodically review the issues and needs of the Region, and re-evaluate its objectives and strategies as needed based upon changing conditions. This process will allow the Region to proactively manage its available resources, including making investments in the planning and implementation of new projects and programs. This includes preparation of periodic updates of the IRWM Plan to respond to changing conditions (including climate change and the re-evaluation of any impacts and benefits) through a continued working relationship with the BTAC, and to inform project participants and stakeholders about changes to the IRWM Plan.

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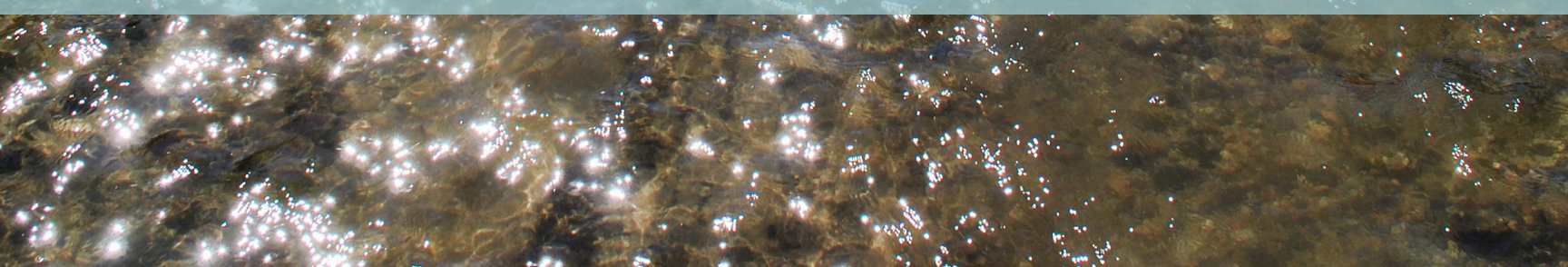
THANKS to the members of the Basin Technical Advisory Committee who actively participated in preparing the Plan.

Thanks also to the San Bernardino Valley Municipal Water District for holding numerous public meetings and providing input that was valuable in the development of this Plan.

This project has been funded by the entities participating in the Basin Technical Advisory Committee.

Prepared by RMC Water and Environment





Appendix A: Upper Santa Ana River Watershed IRWM Region Outreach Materials

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SAN BERNARDINO Valley MUNICIPAL WATER DISTRICT

DATE: October 1, 2013

TO: File 1600

FROM: Bob Tincher, Manager of Engineering & Planning

SUBJECT: Verbal Report by Douglas Headrick – *Upper Santa Ana River Watershed Integrated Regional Water Management Plan,* 2013 Update

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At the regularly scheduled meeting of the San Bernardino Valley Municipal Water District (Valley District) Board of Directors, General Manager Douglas Headrick provided a verbal report on the update of the *Upper Santa Ana River Watershed Integrated Regional Water Management Plan* (IRWMP). A list of items covered in his verbal report is included below:

- The IRWMP was completed in 2007.
- Original plan was the result of a collaborative planning effort involving16 different agencies led by San Bernardino Valley Municipal Water District.
- It establishes management objectives and identifies strategies and projects to accomplish the objectives.
- Staff from the agencies that adopted the IRWMP decided to develop the update using staff from the agencies instead of hiring a consultant to increase the local knowledge base and to minimize the cost.
- A schedule has been developed for this process with the goal being to present the updated IRWMP for consideration by the various Boards and Councils in December 2013.

SAN BERNARDINO Valley MUNICIPAL WATER DISTRICT

DATE: October 2, 2013

TO: Engineering Committee

FROM: Bob Tincher, Manager of Engineering & Planning

SUBJECT: Project Update – *Upper Santa Ana River Watershed Integrated Regional Water Management Plan,* 2013 Update

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The *Upper Santa Ana River Watershed Integrated Regional Water Management Plan* (IRWMP) was the result of a collaborative planning effort involving16 different agencies and led by San Bernardino Valley Municipal Water District. The IRWMP was completed in 2007. It establishes management objectives and identifies strategies and projects to accomplish the objectives. Since the plan was adopted, considerable progress has been made toward achieving the objectives. The Basin Technical Advisory Committee (BTAC), Regional Annual Water Management Plan and Cooperative Recharge Program are just a few examples of this progress.

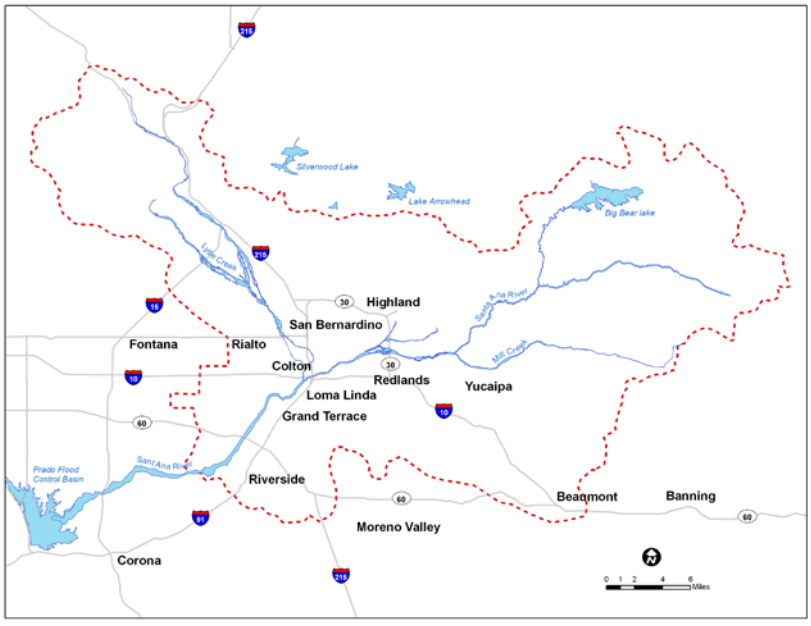
When the IRWMP was developed, it was decided that the plan would be reviewed and updated, as necessary, every 5 years, which would have meant an update in 2012. However, in 2012, the region was completing the *San Bernardino Valley Regional Urban Water Management Plan* (RUWMP) and, therefore, decided to postpone the update of the IRWMP until after completion of the RUWMP. Staff from the agencies that adopted the IRWMP began discussing the update of the document in June of this year. They decided to develop the update using staff from the agencies instead of hiring a consultant to increase the local knowledge base and to minimize the cost. The update will celebrate the progress that has been made since the IRWMP was adopted and will review the objectives, strategies and projects and will ensure compliance with the latest IRWMP standards developed by the Department of Water Resources. A schedule has been developed for this process with the goal being to present the updated IRWMP for consideration by the various Boards and Councils in December 2013.

At this Engineering Committee Workshop, staff will provide an update on this project.

Background

In December of 2007, the San Bernardino Valley Municipal Water District (Valley District) adopted the IRWMP. For Valley District, the IRWMP is the next iteration in its master planning process.

The IRWMP covers all, or portions of the cities and communities of San Bernardino, Riverside, Fontana, Rialto, Colton, Grand Terrace, Loma Linda, Highland, Redlands, Mentone, Yucaipa, Big Bear Lake, the San Timoteo Watershed, and a large portion of the San Bernardino National Forest. It was developed through an open, public process, which involved sixteen different public agencies. Each of these agencies helped develop the IRWMP by their participation in a Technical Advisory Group (TAG). The TAG met twice a month during the planning process and presented updates to their elected officials as well as quarterly updates to the Advisory Commission. When the IRWMP was complete, the TAG became the Basin Technical Advisory Committee (BTAC), which began working to implement the IRWMP.



Integrated Regional Water Management Plan Study Area

The following agencies adopted the IRWMP:

1. Beaumont Basin Watermaster

2. Big Bear Lake Department of Water and Power
3. East Valley Water District
4. City of Loma Linda
5. Meeks & Daley Water Company
6. City of Riverside
7. City of Redlands
8. County of San Bernardino
9. San Bernardino Valley Municipal Water District
10. San Bernardino Valley Water Conservation District
11. San Gorgonio Pass Water Agency
12. San Bernardino Municipal Water Department
13. San Timoteo Watershed Management Authority
14. West Valley Water District
15. City of Yucaipa
16. Yucaipa Valley Water District

Valley District agreed to lead the planning effort using a grant from the California Department of Water Resources (DWR). The main goal was to establish the following objectives and strategies to capitalize on all water management opportunities:

Objectives	**Strategies**

Improve Water Supply Reliability	• Water Conservation and Recycling
	• Groundwater management
	• Surface water management
	  o Stormwater capture
	  o "Tilted basin" (wet year storage)
	• Disaster preparedness
	• Climate change

Protect and enhance water quality	• Monitoring • Remediation • Improvement
Ecosystem restoration and environmental enhancement	• Habitat protection and enhancement • Wetlands restoration • Land use planning • Recreation and public access

Since the plan was adopted, the region has made considerable progress toward meeting each of the objectives.

The IRWMP generally concludes that the region will be able to meet its future water needs by 1) implementing water conservation and water recycling programs that reduce overall demands, 2)

efficiently managing its local water resources and 3) optimizing the use of imported water from the State Water Project by storing it when it is available for later use during drought periods.

During development of the IRWMP, it was decided to review and update the document every 5 years, which would have meant an update in 2012. However, in 2012, the region was completing the *San Bernardino Valley Regional Urban Water Management Plan* and, therefore, decided to postpone update of the IRWMP until after completion of the RUWMP. Discussions about the update of the IRWMP began during BTAC Engineering Subcommittee meetings. In June 2013, separate meetings began being held to focus on the update. Two update approaches were considered: 1) consultant led and 2) staff led. The staff led approach was selected and work on the update officially began in July 2013.

The update will celebrate the progress that has been made since the IRWMP was adopted and will review the objectives, strategies and projects and will ensure compliance with the latest IRWMP standards developed by the Department of Water Resources. A schedule has been developed for this process with the goal being to present the updated IRWMP for consideration by the various Boards and Councils in December 2013.

At the Engineering Committee Workshop, staff will provide an update on this project.

Staff Recommendation

Receive and file

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT
380 E. Vanderbilt Way, San Bernardino, CA 92408

ENGINEERING COMMITTEE WORKSHOP

AGENDA

3:00 p.m. Wednesday, October 2, 2013

CALL TO ORDER

1. **PUBLIC COMMENT**
   Any person may address the Board on matters within its jurisdiction.

2. **DISCUSSION ITEMS**

   A. Upper Santa Ana River Watershed Integrated Regional Water Management Plan 2013 Update (Page 2)

   B. Update on Develop and Evaluate Large-Scale Water Supply Reliability Projects that Benefit the Entire Santa Ana River Watershed Project (Page 6)

   C. Update on the Study to Determine the Usable Capacity and Safe Yield for Each Sub-Basin Within the Yucaipa Basin Area (Page 10)

   D. 2013 Cooperative Recharge Program (Page 14)

   E. Big Bear Lake In-Lieu Storage Program (Page 16)

   F. Hydro-Electric Power Development at District Turnout and the Future Turnout at City Creek for East Valley Water District Treatment Plant 134 (Page 18)

3. **ADJOURNMENT**

PLEASE NOTE:
Materials related to an item on this Agenda submitted to the Board after distribution of the agenda packet are available for public inspection in the District's office located at 380 E. Vanderbilt Way, San Bernardino, during normal business hours. Also, such documents are available on the District's website at www.sbvmwd.com subject to staff's ability to post the documents before the meeting. The District recognizes its obligation to provide equal access to those individuals with disabilities. Please contact Lillian Jaramillo at (909) 387-9214 two working days prior to the meeting with any special requests for reasonable accommodation.

SAN BERNARDINO Valley MUNICIPAL WATER DISTRICT

DATE: October 2, 2013

TO: Engineering Committee

FROM: Bob Tincher, Manager of Engineering & Planning

SUBJECT: Project Update – *Upper Santa Ana River Watershed Integrated Regional Water Management Plan,* 2013 Update

The *Upper Santa Ana River Watershed Integrated Regional Water Management Plan* (IRWMP) was the result of a collaborative planning effort involving16 different agencies and led by San Bernardino Valley Municipal Water District. The IRWMP was completed in 2007. It establishes management objectives and identifies strategies and projects to accomplish the objectives. Since the plan was adopted, considerable progress has been made toward achieving the objectives. The Basin Technical Advisory Committee (BTAC), Regional Annual Water Management Plan and Cooperative Recharge Program are just a few examples of this progress.

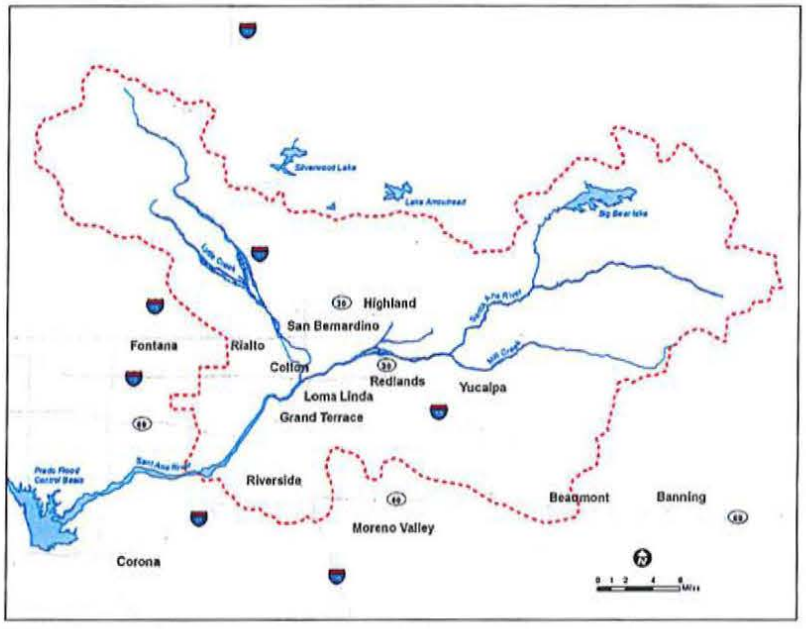
When the IRWMP was developed, it was decided that the plan would be reviewed and updated, as necessary, every 5 years, which would have meant an update in 2012. However, in 2012, the region was completing the *San Bernardino Valley Regional Urban Water Management Plan* (RUWMP) and, therefore, decided to postpone the update of the IRWMP until after completion of the RUWMP. Staff from the agencies that adopted the IRWMP began discussing the update of the document in June of this year. They decided to develop the update using staff from the agencies instead of hiring a consultant to increase the local knowledge base and to minimize the cost. The update will celebrate the progress that has been made since the IRWMP was adopted and will review the objectives, strategies and projects and will ensure compliance with the latest IRWMP standards developed by the Department of Water Resources. A schedule has been developed for this process with the goal being to present the updated IRWMP for consideration by the various Boards and Councils in December 2013.

At this Engineering Committee Workshop, staff will provide an update on this project.

Background

In December of 2007, the San Bernardino Valley Municipal Water District (Valley District) adopted the IRWMP. For Valley District, the IRWMP is the next iteration in its master planning process.

The IRWMP covers all, or portions of the cities and communities of San Bernardino, Riverside, Fontana, Rialto, Colton, Grand Terrace, Loma Linda, Highland, Redlands, Mentone, Yucaipa, Big Bear Lake, the San Timoteo Watershed, and a large portion of the San Bernardino National Forest. It was developed through an open, public process, which involved sixteen different public agencies. Each of these agencies helped develop the IRWMP by their participation in a Technical Advisory Group (TAG). The TAG met twice a month during the planning process and presented updates to their elected officials as well as quarterly updates to the Advisory Commission. When the IRWMP was complete, the TAG became the Basin Technical Advisory Committee (BTAC), which began working to implement the IRWMP.



Integrated Regional Water Management Plan Study Area

The following agencies adopted the IRWMP:

1. Beaumont Basin Watermaster

2. Big Bear Lake Department of Water and Power
3. East Valley Water District
4. City of Loma Linda
5. Meeks & Daley Water Company
6. City of Riverside
7. City of Redlands
8. County of San Bernardino
9. San Bernardino Valley Municipal Water District
10. San Bernardino Valley Water Conservation District
11. San Gorgonio Pass Water Agency
12. San Bernardino Municipal Water Department
13. San Timoteo Watershed Management Authority
14. West Valley Water District
15. City of Yucaipa
16. Yucaipa Valley Water District

Valley District agreed to lead the planning effort using a grant from the California Department of Water Resources (DWR). The main goal was to establish the following objectives and strategies to capitalize on all water management opportunities:

Objectives	**Strategies**

Improve Water Supply Reliability	• Water Conservation and Recycling
	• Groundwater management
	• Surface water management
	  o Stormwater capture
	  o "Tilted basin" (wet year storage)
	• Disaster preparedness
	• Climate change

Protect and enhance water quality	• Monitoring • Remediation • Improvement
Ecosystem restoration and environmental enhancement	• Habitat protection and enhancement • Wetlands restoration • Land use planning • Recreation and public access

Since the plan was adopted, the region has made considerable progress toward meeting each of the objectives.

The IRWMP generally concludes that the region will be able to meet its future water needs by 1) implementing water conservation and water recycling programs that reduce overall demands, 2)

efficiently managing its local water resources and 3) optimizing the use of imported water from the State Water Project by storing it when it is available for later use during drought periods.

During development of the IRWMP, it was decided to review and update the document every 5 years, which would have meant an update in 2012. However, in 2012, the region was completing the *San Bernardino Valley Regional Urban Water Management Plan* and, therefore, decided to postpone update of the IRWMP until after completion of the RUWMP. Discussions about the update of the IRWMP began during BTAC Engineering Subcommittee meetings. In June 2013, separate meetings began being held to focus on the update. Two update approaches were considered: 1) consultant led and 2) staff led. The staff led approach was selected and work on the update officially began in July 2013.

The update will celebrate the progress that has been made since the IRWMP was adopted and will review the objectives, strategies and projects and will ensure compliance with the latest IRWMP standards developed by the Department of Water Resources. A schedule has been developed for this process with the goal being to present the updated IRWMP for consideration by the various Boards and Councils in December 2013.

At the Engineering Committee Workshop, staff will provide an update on this project.

Staff Recommendation

Receive and file

SAN BERNARDINO Valley MUNICIPAL WATER DISTRICT

DATE: October 3, 2013

TO: Advisory Commission on Water Policy

FROM: Bob Tincher, Manager of Engineering & Planning

SUBJECT: Project Update – *Upper Santa Ana River Watershed Integrated Regional Water Management Plan,* 2013 Update

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The *Upper Santa Ana River Watershed Integrated Regional Water Management Plan* (IRWMP) was the result of a collaborative planning effort involving16 different agencies led by San Bernardino Valley Municipal Water District. The Advisory Commission on Water Policy (Advisory Commission) reviewed the progress on the IRWMP regularly and the document was completed in 2007. The IRWMP establishes management objectives and identifies strategies and projects to accomplish the objectives. Since the plan was adopted, considerable progress has been made toward achieving the objectives. The Basin Technical Advisory Committee (BTAC), Regional Annual Water Management Plan and Cooperative Recharge Program are just a few examples of this progress.

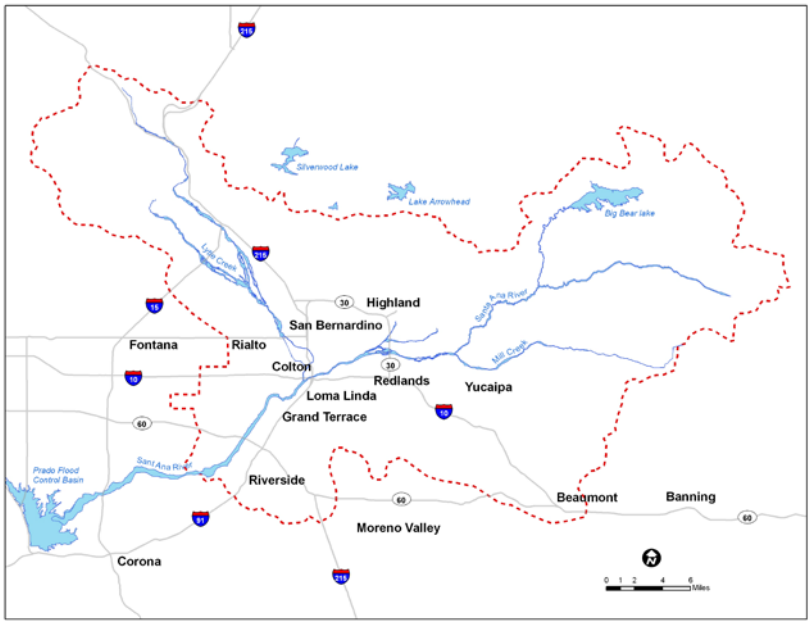
Staff from the agencies that adopted the IRWMP began considering update of the document in June of this year. The update will celebrate the progress that has been made since the IRWMP was adopted and will review the objectives, strategies and projects. A schedule has been developed for this process with the goal being to present the updated IRWMP for consideration by the various Boards and Councils in December 2013.

At the Advisory Commission meeting, an update on this project will be provided.

Background

In December of 2007, the San Bernardino Valley Municipal Water District (Valley District) adopted the IRWMP. For Valley District, the IRWMP is the next iteration in its master planning.

The IRWMP covers all, or portions of the cities and communities of San Bernardino, Riverside, Fontana, Rialto, Colton, Grand Terrace, Loma Linda, Highland, Redlands, Mentone, Yucaipa, Big Bear Lake, the San Timoteo Watershed, and a large portion of the San Bernardino National Forest. It was developed through an open, public process which involved sixteen different public agencies. Each of these agencies helped develop the IRWMP by their participation in a Technical Advisory Group (TAG). The TAG met twice a month during the planning process and presented updates to their elected officials as well as quarterly updates to the Advisory Commission. When the IRWMP was complete, the TAG became the Basin Technical Advisory Committee (BTAC) which began working to implement the IRWMP.



Integrated Regional Water Management Plan Study Area

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9. San Bernardino Valley Municipal Water District
10. San Bernardino Valley Water Conservation District
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13. San Timoteo Watershed Management Authority
14. West Valley Water District
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16. Yucaipa Valley Water District

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Since the plan was adopted, the region has made considerable progress toward meeting each of the objectives.

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Discussions about the update of the IRWMP began during BTAC Engineering Subcommittee meetings. In June 2013, separate meetings began being held to focus on the update. Two update approaches were considered: 1) consultant led and 2) staff led. The staff led approach was selected and work on the update officially began in July 2013. A schedule has been developed for this process with the goal being to present the updated IRWMP for consideration by the various Boards and Councils in December 2013.

At the Advisory Commission meeting, an update on this project will be provided.

Staff Recommendation

Receive and file

Date: October 3, 2013

To: Bob Tincher, Manager of Engineering & Planning, San Bernardino Valley Municipal Water District (Valley District)

From: Linda Jadeski, Engineering Services Manager, West Valley Water District (WVWD)

RE: Verbal Report on the 2013 Update of the Upper Santa Ana River Watershed Integrated Regional Water Management Plan

---

At the regularly scheduled meeting of the West Valley Water District Board of Directors, during staff reports, I gave a verbal report on the update of the Upper Santa Ana River Watershed Integrated Regional Water Management Plan (IRWMP). The verbal report included the following:

- The original plan was completed in 2007 through a collaborative planning effort involving 16 agencies led by Valley District. When the IRWMP was prepared it was determined that it would be updated every 5 years.

- Participating agencies decided to utilize agency staff to perform the update instead of hiring a consultant. This would increase local knowledge of the plan and minimize the cost to update the plan.

- WVWD is taking the lead in updating Chapter 3 of the plan, which is the Water Budget. WVWD gave a brief presentation at the Sept. 30 workshop informing the group on the chapter update status. These workshops are open to the public to provide their input.

- The IRWMP establishes management objectives and identifies strategies and projects to achieve these goals. The objectives of the plan are to improve water supply reliability, protect and enhance water quality and to provide ecosystem restoration.

- The updated plan will include the progress that has been made this far toward achieving these goals.

Basin Technical Advisory Committee

Meeting No. 65

AGENDA

San Bernardino Valley Municipal Water District
380 E. Vanderbilt Way
San Bernardino, CA 92408

October 7, 2013, 1:30 p.m.

1 Call to Order/Introductions

2) Approval of Minutes

A. August 5, 2013 Meeting (Page 2)

3) New Business

A. Integrated Regional Water Management Plan Update

4) Old Business

A. Report from the Engineering Subcommittee
B. Report from the Water Conservation Subcommittee
C. Report from the Project Implementation Group
D. Discussion of State Water Project Allocation Supply Availability
E. Update on Proposed New Critical Habitat Designation for the Santa Ana Sucker
F. Emergency Response Network of the Inland Empire

5) Other Business

A. Confirm Next Meeting Date of December 2, 2013 at 1:30 p.m.

6) Adjourn

Bear Valley Mutual Water Company
City of Colton
East Valley Water District
City of Loma Linda
City of Redlands
City of Rialto
City of Riverside
San Bernardino County Flood Control District
San Bernardino Municipal Water Department
San Bernardino Valley Municipal Water District
San Bernardino Valley Water Conservation District
West Valley Water District
Western Municipal Water District
Yucaipa Valley Water District

380 East Vanderbilt Way
San Bernardino, CA 92408
909.387.9200 ph
909.387.9247 fax
www.sbvmwd.com

Tom Crowley, Chair | Greg Gage, Chair, Project Implementation Group | Matt Litchfield, Chair, Engineering Subcommittee | Bob Tincher, Chair, Conservation Subcommittee

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT
Established 1932
1630 West Redlands Boulevard, Suite A
Redlands, CA 92373-8032
(909) 793-2503
Fax: (909) 793-0188
Email: info@sbvwcd..org
www.sbvwcd.org

Memorandum No. 1216

To: **Board of Directors**

From: **General Manager, Daniel Cozad**
Land Resources Manager, Jeffrey Beehler

Date: **October 9, 2013**

Subject: **Upper Santa Ana River Wash IRWMP Update**

RECOMMENDATION

Review and consider approval of the District's involvement in the update of the Upper Santa Ana River Watershed Integrated Regional Water Management Plan (IRWMP).

BACKGROUND

In 2007, a group of cities and agencies from the upper wash, including the Conservation District, adopted an IRWMP for the region comprising the headwaters of the Santa Ana River to the River. The purpose was to develop projects providing benefits on a regional scale, to assist in obtaining funding for those projects and develop a process to better manage water resources in the Upper Wash. A number of District projects, including the Wash Plan and the Plunge Creek Restoration/ Rehabilitation project are discussed in the current plan.

The plan update is intended to: 1) update the list of projects in the plan; 2) document the region's success in reaching some of the plan's goals; 3) update the plan so that it conforms to Department of Water Resources plan standards, and; 4) ensure that the plan reflects changes in the Upper Wash since the original plan was adopted. San Bernardino Valley Municipal Water District is taking the lead on this project through the Basin Technical Advisory Committee (BTAC). The plan is scheduled to be in a draft final format for consideration by Boards of Directors by early 2014.

Staff is providing updates and additions to the plan, primarily estimated climate change impacts and water issues related to Disadvantaged Communities. Staff is also participating in the BTAC update process to ensure that District projects are represented. Interns can provide much of the needed data analysis support.

FISCAL IMPACT

Adequate resources for these activities are included in the current budget.

BOARD OF DIRECTORS
Richard W. Corneille
Clare Henry Day
Bob Glaubig
John Longville
David E. Raley
Melody McDonald
Manuel Aranda, Jr.
GENERAL MANAGER
Daniel B. Cozad

RESOLUTION NO. 840

RESOLUTION OF THE INTENTION OF THE BOARD OF WATER COMMISSIONERS OF THE CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT TO UPDATE THE UPPER SANTA ANA RIVER WATERSHED INTEGRATED REGIONAL WATER MANAGEMENT PLAN.

WHEREAS, the members of the Upper Santa Ana Water Resources Association formed a Technical Advisory Group in 2005 for the purpose of preparing an Integrated Regional Water Management Plan (Plan) for the upper Santa Ana River watershed;

WHEREAS, the Technical Advisory Group guided the preparation of the Plan and prepared a public draft of the plan;

WHEREAS, the City of San Bernardino Municipal Water Department was a member of the Technical Advisory Group and supported and participated in preparation of the Plan;

WHEREAS, the Upper Santa Ana River Watershed Integrated Regional Water Management Plan (IRWMP) was completed in 2007 and adopted by sixteen different agencies;

WHEREAS, the Department adopted the IRWMP on December 18, 2007;

WHEREAS, the IRWMP established the Basin Technical Advisory Committee (BTAC) to develop an annual water management plan and generally implement the IRWMP;

WHEREAS, the IRWMP established an update schedule of every five years;

WHEREAS, the Integrated Regional Water Management Planning Act was updated in 2011 requiring IRWMPs to have objectives consistent with the State of California's coequal goals of (1) improving water supply reliability and (2) protecting, restoring and enhancing the Delta ecosystem (§ 85054 Water Code and also to show reduced reliance on State Water Project water through improved self-reliance (§ 85021 Water Code);

WHEREAS, the Department Board of Water Commissioners desires to have the BTAC update the IRWMP for subsequent re-adoption by the Department and other agencies; and

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF WATER COMMISSIONERS OF THE CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT that the Board of Water Commissioners of the City of San Bernardino Municipal

////

Board Meeting
11/19/13

CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

BOARD OF WATER COMMISSIONERS
STAFF REPORT

TO: Stacey R. Aldstadt, General Manager

FROM: Matthew H. Litchfield

SUBJECT: **RESOLUTION OF THE INTENTION OF THE SAN BERNARDINO MUNICIPAL WATER DEPARTMENT TO UPDATE THE UPPER SANTA ANA RIVER WATERSHED INTEGRATED REGIONAL WATER MANAGEMENT PLAN**

DATE: October 31, 2013

COPIES: Sydney Morrison (w/original resolution)

BACKGROUND:

In 2007, the San Bernardino Municipal Water Department (Department) Board of Water Commissioners (Board) adopted the *Upper Santa Ana River Watershed Integrated Regional Water Management Plan* (Plan). The San Bernardino Valley Municipal Water District was the lead agency on this effort and Department staff participated in the development of the original plan as part of the Technical Advisory Group (TAG). As a result of the development of the Plan and subsequent adoption by participating agencies, the Basin Technical Advisory Committee (BTAC) was formed, which the Department actively participates in to develop an annual water management plan for the San Bernardino Basin Area.

The original Plan included provisions to be updated every five years. Furthermore, the Integrated Regional Water Management Planning Act was updated in 2011 requiring all future Plans to have objectives consistent with the State of California's coequal goals of improving water supply reliability and protecting, restoring, and enhancing the Delta ecosystem (§ 85054 Water Code and also to show reduced reliance on State Water Project water through improved self-reliance § 85021 Water Code).

Work on the Plan update began in June 2013 and Department staff has been actively participating in the update since that time. Staff has indicated that the updated Plan will be brought back to the Board in January 2014 for final adoption.

Agenda Item _____

SUBJECT: RESOLUTION OF THE INTENTION OF THE SAN BERNARDINO MUNICIPAL WATER DEPARTMENT TO UPDATE THE UPPER SANTA ANA RIVER WATERSHED INTEGRATED REGIONAL WATER MANAGEMENT PLAN

RECOMMENDATION:

Staff recommends that the Board of Water Commissioners make the following motion:

> **Adopt a Resolution indicating the intention of the San Bernardino Municipal Water Department to update the Upper Santa Ana River Watershed Integrated Regional Water Management Plan.**

Respectfully submitted,

Matthew H. Litchfield, P.E.
Director, Water Utility

MHL:swd
Attach.

CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT

AGENDA
REGULAR MEETING
BOARD OF WATER COMMISSIONERS
Tuesday, NOVEMBER 19, 2013– 9:30 a.m.
WATER DEPARTMENT BOARD ROOM
300 North D Street, 5th Floor
San Bernardino, California

BOARD OF WATER COMMISSIONERS

TONI CALLICOTT
President

Commissioners
B. WARREN COCKE
LOUIS A. FERNANDEZ
WAYNE HENDRIX
JUDITH VALLES



STACEY R. ALDSTADT
General Manager
ROBIN L. OHAMA
Deputy General Manager
MATTHEW H. LITCHFIELD, P.E.
Director of Water Utility
JOHN A. CLAUS
Director of Water Reclamation
WILLIAM M. KOLBOW, C.P.A.
Director of Finance
JENNIFER L. SHEPARDSON
Director of Environmental &
Regulatory Compliance

"Trusted, Quality Service since 1905"

Welcome to a meeting of the Board of Water Commissioners of the City of San Bernardino.

- The City of San Bernardino Municipal Water Department recognizes its obligation to provide equal access to those individuals with disabilities. Please contact the General Manager's Office (909-384-5191) two working days prior to the meeting for any requests for reasonable accommodation, to include interpreters.
- All documents for public review are on file with the Water Department located on the 5th floor of City Hall, 300 North "D" Street, San Bernardino or may be accessed online athttp://www.ci.san-bernardino.ca.us/water/newsalerts/agendas_n_minutes.asp
- Please turn off or mute your cell phone while the meeting is in session.
- Any member of the public desiring to speak to the Board of Water Commissioners concerning any matter not on the agenda, but which is within the subject matter jurisdiction of the Board of Water Commissioners, may address the body at the end of the meeting during the period reserved for public comments. Said total period for public comments shall not exceed forty-five (45) minutes, unless such time limit is extended by the Board of Water Commissioners. A three-minute limitation shall apply to each member of the public, unless such time limit is extended by the Board of Water Commissioners. No member of the public shall be permitted to "share" his/her three minutes with any other member of the public.
- The Board of Water Commissioners may refer any item raised by the public to staff for appropriate action or have the item placed on the next agenda of the Board of Water Commissioners. However, no other action shall be taken nor discussion held by the Board of Water Commissioners on any item which does not appear on the agenda unless the action is otherwise authorized in accordance with the provisions of subdivision (b) of Section 54954.2 of the Government Code.
- Public comments will not be received on any item on the agenda when a public hearing has been conducted and closed.

CALL TO ORDER: _____a.m./p.m.

Attendee Name	Present	Absent	Late	Arrived
President Toni Callicott				
Commissioner B. Warren Cocke				
Commissioner Louis Fernández				
Commissioner Wayne Hendrix				
Commissioner Judith Valles				
General Manager Stacey Aldstadt				
Deputy General Manager Robin Ohama				
Director of WRP John Claus				
Director of WU Matt Litchfield				
Director of Finance Will Kolbow				
Director of ERC Jennifer Shepardson				

OTHERS:

1. CLOSED SESSION: _____ a.m./p.m.

Pursuant to Government Code Section(s):

A. Conference with legal counsel – existing litigation – pursuant to Government Code Section 54956.9(a): *In Re City of San Bernardino, California,* United States Bankruptcy court, Central District of California (Riverside), Case No. 6: 12-bk-28006-MJ.

B. Conference with legal counsel – anticipated litigation – significant exposure to litigation – pursuant to Subdivision (b) (1), (2), (3) (A-F) of Government Code Section 54956.9.

C. Conference with legal counsel – anticipated litigation – initiation of litigation – pursuant to subdivision (c) of Government Code Section 54956.9.

D. Conference with legal counsel – personnel – pursuant to Government Code Section 54957.

E. Conference with legal counsel and security consultant on matters posing a threat to the security of essential public services, including water, drinking water, and wastewater treatment pursuant to Government Code Section 54957 (a).

F. Conference with labor negotiator – pursuant to Government Code Section 54957.6(a).

END OF CLOSED SESSION

RECONVENE MEETING

CALL TO ORDER: _____a.m./p.m.

Attendee Name	Present	Absent	Late	Arrived
President Toni Callicott				
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Commissioner Louis Fernández				
Commissioner Wayne Hendrix				
Commissioner Judith Valles				
General Manager Stacey Aldstadt				
Deputy General Manager Robin Ohama				
Director of WRP John Claus				
Director of WU Matt Litchfield				
Director of Finance Will Kolbow				
Director of ERC Jennifer Shepardson				

OTHERS:

2. ANNOUNCEMENTS BY MEMBERS OF THE BOARD OF WATER COMMISSIONERS

3. CONSENT CALENDAR

MOTION: That the motions indicated by consent calendar items 3A through 3E be adopted, except for _____.

MOTION:_____SECONDED:_____

A. WAIVE FULL READING OF RESOLUTIONS

MOTION: That full reading of the resolutions on the regular or supplemental agendas of the Board of Water Commissioners be waived.

B. PAYROLL

MOTION: Approve the payroll for the pay periods November 4, 2013 through November 17, 2013.

C. CONTRACTS AND BILLS

MOTION: Approve the payment of contracts and bills to be presented at this meeting.

D. MINUTES

MOTION: Approve the minutes of the meeting of November 5, 2013 of the Board of Water Commissioners as submitted in typewritten form.

E. PERSONNEL ACTION – APPOINTMENT: Cory Tingue to the position of Water/Water Reclamation Worker, Range 124, Section 2040, ratify effective November 12, 2013.

MOTION: Approve the Personnel Action as submitted.

END OF CONSENT CALENDAR

4. ADDITIONS TO THE AGENDA:(if any) in accordance with Section 54954.2 (b) (2) of the Government Code (Brown Act), a two-thirds vote (or a unanimous vote if less than two-thirds are present) is required to add an item for action provided that there is a need to take immediate action and that the need for action came to the attention of the agency after the agenda was posted.

MOTION: Approve an additional item(s) to be added to the agenda in accordance with Government Code Section 54954.2(b) (2).

MOTION: _____ SECONDED: _____

5. ACCEPTANCE OF WATER UTILITY EASEMENT FOR THE OMNITRANS SBX PROJECT – 290 HOSPITALITY LANE, BLACK ANGUS (EPN 2009-002): The Omnitrans sbX Project involves street widening for Hospitality Lane, "E" Street, and Kendall Drive. The street widening requires the relocation of numerous Department facilities including fire and domestic water services, geothermal services, fire hydrants, two water pipelines, and other appurtenances. The additional Right of Way obtained by the sbX Project is insufficient, in some instances, to accommodate the relocation of large domestic and fire service vaults owned by the Department; therefore, easements will be needed. The existing fire service that serves the property known as APN 0141-412-15 will require an easement for the proposed vault relocation. Omnitrans has provided the Department with easement documents for execution.

MOTION: Accept the Grant of Easement from Seungho Peter Ahn and Deokhee Ahn, husband and wife as community property, as to an undivided 50 percent interest, and Chung Hyun Nam and In Kyung Nam, husband and wife as community property, as to an undivided 50 percent interest within the property known as APN 0141-412-15 and as described in the easement documents; authorize the Secretary to submit the easement documents to the City Clerk for signature and recordation.

MOTION:_____SECONDED:_____

6. RESOLUTION OF THE INTENTION OF THE SAN BERNARDINO MUNICIPAL WATER DEPARTMENT TO UPDATE THE UPPER SANTA ANA RIVER WATERSHED INTEGRATED REGIONAL WATER MANAGEMENT PLAN: In 2007, the San Bernardino Municipal Water Department (Department) Board of Water Commissioners (Board) adopted the *Upper Santa Ana River Watershed Integrated Regional Water Management Plan* (Plan). The San Bernardino Valley Municipal Water District was the lead agency on this effort and Department staff participated in the development of the original plan as part of the Technical Advisory Group (TAG). As a result of the development of the Plan and subsequent adoption by participating agencies, the Basin Technical Advisory Committee (BTAC) was formed. Department staff actively participates in the BTAC which has been working to update the annual Water Management Plan for the San Bernardino Basin Area. The updated Plan will be brought back before the Board in January 2014 for final adoption.

MOTION: Adopt a Resolution indicating the intention of the San Bernardino Municipal Water Department to update the Upper Santa Ana River Watershed Integrated Regional Water Management Plan.

MOTION:_____SECONDED:_____

7. REQUEST TO INCREASE FISCAL YEAR 2013/14 BUDGET AND AUTHORIZATION TO ADD ENGINEERING INTERN POSITION – ENGINEERING (SECTION 3060): The Engineering Section has grown into a full-service provider of engineering services administering the capital improvement programs for both the Water Utility Division and the Water Reclamation Division, including the RIX (Rapid Infiltration Extraction) facility. In addition, the Department has invested in a robust GIS enterprise database form of asset documentation and field applications for the Water Utility

Division that is managed and administered by the Engineering Section. The internship program has been a huge success within the Engineering Section particularly with the ongoing development of the GIS database. As a result of the success of the internship program, staff is requesting the addition of one (1) paid Engineering Intern position for a total of two (2) paid Engineering Intern positions in the Engineering Section.

A budget increase of $10,000.00 is requested for the Fiscal Year 2013/14 operating budget for Section 3060. A paid internship position is a flat hourly rate of $10.00 per hour (Range 100 T) with no fringe benefits and an annual working hour cap of 1,000 hours.

MOTION: Approve a budget increase of $10,000.00 for Fiscal Year 2013/14 and authorize the addition of an Engineering Intern position in the Engineering Section, effective December 1, 2013.

MOTION:_____SECONDED:_____

8. REQUEST TO INCREASE FISCAL YEAR 2013/14 BUDGET AND AUTHORIZATION TO ADD ASSOCIATE ENGINEER WITH PROFESSIONAL ENGINEER LICENSE – ENGINEERING (SECTION 3060): The Engineering Section has grown into a full-service provider of engineering services administering the capital improvement programs for both the Water Utility Division and the Water Reclamation Division, including RIX. In addition, the Department has invested in a robust GIS enterprise database form of asset documentation and field applications for the Water Utility Division that is managed and administered by the Engineering Section. The GIS applications are now expanding to be applied to the Water Reclamation Division assets. In addition to the GIS workload increase, the Water Reclamation Division's capital improvement program is expanding rapidly, increasing workloads on existing staff. Staff is requesting authorization to add the Associate Engineer (with PE License) in the Engineering Section for Fiscal Year 2013/14. A budget increase of $120,000.00 is requested for the Fiscal Year 2013/14 operating budget for Section 3060.

MOTION: Approve a budget increase of $120,000.00 for Fiscal Year 2013/14 and authorize the addition of an Associate Engineer (with PE License) position in the Engineering Section, effective December 1, 2013.

MOTION:_____SECONDED:_____

9. APPROVAL OF PROFESSIONAL SERVICE AGREEMENT WITH TOM DODSON & ASSOCIATES TO PROVIDE ENVIRONMENTAL SERVICES FOR THE KENWOOD TRANSMISSION MAIN EXTENSION (CO 10677) AND THE SBMWD ADMINISTRATION RELOCATION PROJECT (CO 10654): In September 2013, the Department issued a Request for Proposal (RFP) (Specification 1607) for environmental services for the Kenwood Transmission Main Extension and the San Bernardino Municipal Water Department (SBMWD) Administration Relocation Project. In October 2013, three (3) consulting firms submitted proposals in response to the RFP. As a result of staff review and ranking of proposals, the firm with the highest overall score was Tom Dodson & Associates.

The cost for environmental services for the Kenwood Transmission Main Extension and the SBMWD Administration Relocation Project are $31,500.00 and $2,000.00, respectively. The

Subject: Online Resources for the San Gorgonio Pass Regional Water Task Force
Date: Tuesday, November 5, 2013 at 3:40:15 PM Pacific Standard Time
From: Joseph Zoba <jzoba@yvwd.dst.ca.us> (sent by Joseph Zoba <joseph@dst-ca.ccsend.com>)
To: Bob Tincher <bobt@sbvmwd.com>

Online Resources for the San Gorgonio Pass Regional Water Task Force

Information requested by the Task Force members at the meeting held on Monday, November 4, 2013.

Dear Bob:

At the San Gorgonio Pass Regional Water Task Force meeting held on November 4, 2013, the members requested additional information about the following topics. This information is being made available to everyone on the mailing list to facilitate future discussions, ideas and actions by the member agencies.

Please click the underlined links to view the online material.

- **Meeting Presentation**
  - Download PDF

- **California Water Plan Update** - The California Water Plan provides a collaborative planning framework for elected officials, agencies, tribes, water and resource managers, businesses, academia, stakeholders, and the public to develop findings and recommendations and make informed decisions for California's water future.
  - California Water Plan Website
  - South Coast Regional Report
  - Colorado River Regional Report

San Gorgonio Pass Regional Water Task Force

Task Force Member Agencies

Task Force members are currently considering approval of a Memorandum of Understanding.

Members will be added to this panel in the near future.

- **Upper Santa Ana River Watershed Integrated Regional Water Management Plan** - The Santa Ana River is the largest stream system in Southern California. The Integrated Regional Water Management Plan (IRWMP) for the Upper Santa Ana River Watershed provides an opportunity to view a local IRWMP in action.
    - IRWMP Executive Summary
    - IRWMP Full Document
    - Sample Resolution of Support for the Preparation of the IRWMP (Optional)

We hope you find these online resources helpful.

Future Meeting Dates:

- **Technical Committee Meeting**
    - Wednesday, November 20, 2013 at 2:00 p.m.

- **Administrative Committee Meeting**
    - Wednesday, November 20, 2013 at 3:30 p.m.

- **San Gorgonio Pass Regional Water Task Force Meeting**
    - Monday, January 13, 2014 at 6:00 p.m.

(A Task Force meeting will not be held in December 2013)

All meetings of the San Gorgonio Pass Regional Water Task Force are held at the offices of the City of Banning Council Chambers located at 99 East Ramsey Street, Banning, California unless noticed otherwise.



Forward this email

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Yucaipa Valley Water District | 12770 Second Street | Yucaipa | CA | 92399

RESOLUTION NO. 2013-15

RESOLUTION OF THE INTENTION OF THE BOARD OF DIRECTORS OF THE SAN GORGONIO PASS WATER AGENCY TO UPDATE THE UPPER SANTA ANA RIVER WATERSHED INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, the members of the Upper Santa Ana Water Resources Association formed a Technical Advisory Group in 2005 for the purpose of preparing an Integrated Regional Water Management Plan (Plan) for the upper Santa Ana River watershed; and

WHEREAS, the Technical Advisory Group guided the preparation of the Plan and prepared a public draft of the Plan; and

WHEREAS, the San Gorgonio Pass Water Agency was a member of the Technical Advisory Group and supported and participated in preparation of the Plan; and

WHEREAS, the Upper Santa Ana River Watershed Integrated Regional Water Management Plan (IRWMP) was completed in 2007 and adopted by sixteen different agencies, including the Agency; and

WHEREAS, the IRWMP established the Basin Technical Advisory Committee (BTAC) to develop an annual water management plan and generally implement the IRWMP; and

WHEREAS, the IRWMP established an update schedule of every five years; and

WHEREAS, the Integrated Regional Water Management Planning Act was updated in 2011 requiring IRWMPs to have objectives consistent with the State of California's coequal goals of (1) improving water supply reliability and (2) protecting, restoring and enhancing the Delta ecosystem (§ 85054 Water Code and also to show reduced reliance on State Water Project water through improved self-reliance (§ 85021 Water Code); and

WHEREAS, the Agency Board of Directors desires to have the BTAC update the IRWMP for subsequent re-adoption by the Agency and other agencies.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SAN GORGONIO PASS WATER AGENCY that the Board of Directors of the San Gorgonio Pass Water Agency does hereby intend to support and participate in the update of the Upper Santa Ana River Watershed Integrated Regional Water Management Plan.

ADOPTED this 4th day of November, 2013

San Gorgonio Pass Water Agency

By: _____
John Jeter, President

ATTEST:

_____
Secretary

SAN BERNARDINO Valley MUNICIPAL WATER DISTRICT

DATE: November 5, 2013

TO: Board of Directors

FROM: Bob Tincher, Manager of Engineering & Planning

SUBJECT: 2013 Update of the Upper Santa Ana River Watershed Integrated Regional Water Management Plan

This item was discussed at the October 2, 2013 Engineering Committee workshop.

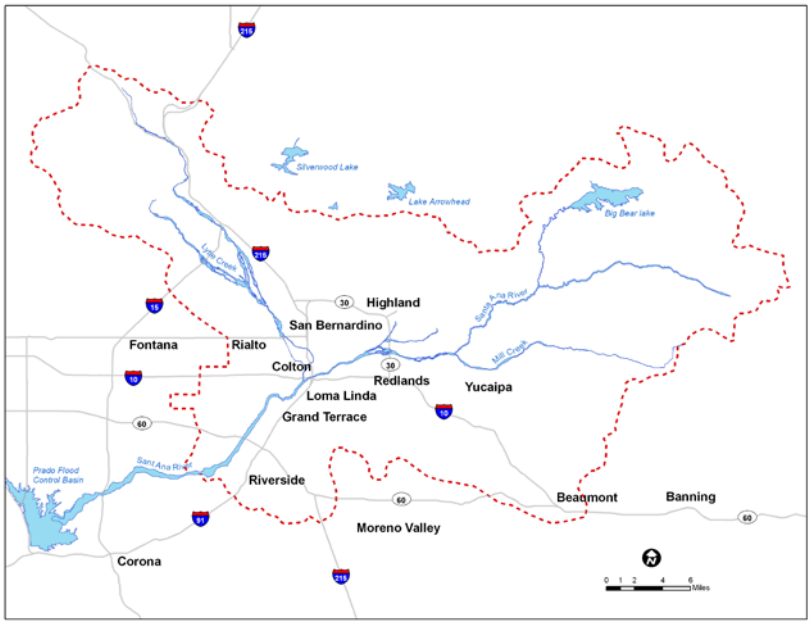
The *Upper Santa Ana River Watershed Integrated Regional Water Management Plan* (IRWMP) was the result of a collaborative planning effort involving16 different agencies and led by San Bernardino Valley Municipal Water District and was completed in 2007. It establishes management objectives and identifies strategies and projects to accomplish the objectives. Since the plan was adopted, considerable progress has been made toward achieving the objectives. The Basin Technical Advisory Committee (BTAC), Regional Annual Water Management Plan and Cooperative Recharge Program are just a few examples of this progress. The IRWMP is currently being updated by staff from the various agencies that adopted the IRWMP.

Before the IRWMP was developed, the various agencies were required to adopt a resolution of intent to develop an integrated plan per the requirements of the Integrated Regional Water Management Planning Act (Act). The Act does not have any specific requirements for updating an IRWMP. Realizing the intent of the Act is to ensure a planning process that welcomes public input, special counsel David Aladjem has recommended that the Board notify the public of the update process by including it as an agenda item and by taking a position on the update process during a regular Board meeting.

Background

In December of 2007, the San Bernardino Valley Municipal Water District (Valley District) adopted the IRWMP. The IRWMP covers all, or portions of the cities and communities of San Bernardino, Riverside, Fontana, Rialto, Colton, Grand Terrace, Loma Linda, Highland,

Redlands, Mentone, Yucaipa, Big Bear Lake, the San Timoteo Watershed, and a large portion of the San Bernardino National Forest. It was developed through an open, public process, which involved sixteen different public agencies. Each of these agencies helped develop the IRWMP by their participation in a Technical Advisory Group (TAG). The TAG met twice a month during the planning process and presented updates to their elected officials as well as quarterly updates to the Advisory Commission. When the IRWMP was complete, the TAG became the Basin Technical Advisory Committee (BTAC), which began working to implement the IRWMP.



Integrated Regional Water Management Plan Study Area

The following agencies adopted the IRWMP:

1. Beaumont Basin Watermaster
2. Big Bear Lake Department of Water and Power
3. East Valley Water District
4. City of Loma Linda
5. Meeks & Daley Water Company
6. City of Riverside
7. City of Redlands
8. County of San Bernardino
9. San Bernardino Valley Municipal Water District
10. San Bernardino Valley Water Conservation District
11. San Gorgonio Pass Water Agency
12. San Bernardino Municipal Water Department
13. San Timoteo Watershed Management Authority
14. West Valley Water District
15. City of Yucaipa

16. Yucaipa Valley Water District

Valley District agreed to lead the planning effort using a grant from the California Department of Water Resources (DWR). The main goal was to establish the following objectives and strategies to capitalize on all water management opportunities:

Objectives	**Strategies**

Improve Water Supply Reliability	• Water Conservation and Recycling
	• Groundwater management
	• Surface water management
	  o Stormwater capture
	  o "Tilted basin" (wet year storage)
	• Disaster preparedness
	• Climate change

Protect and enhance water quality	• Monitoring • Remediation • Improvement
Ecosystem restoration and environmental enhancement	• Habitat protection and enhancement • Wetlands restoration • Land use planning • Recreation and public access

Since the plan was adopted, the region has made considerable progress toward meeting each of the objectives.

The IRWMP generally concludes that the region will be able to meet its future water needs by 1) implementing water conservation and water recycling programs that reduce overall demands, 2) efficiently managing its local water resources and 3) optimizing the use of imported water from the State Water Project by storing it when it is available for later use during drought periods.

During development of the IRWMP, it was decided to review and update the document every 5 years, which would have meant an update in 2012. However, in 2012, the region was completing the *San Bernardino Valley Regional Urban Water Management Plan* and, therefore, decided to postpone update of the IRWMP until after completion of the RUWMP. Discussions about the update of the IRWMP began during BTAC Engineering Subcommittee meetings. In June 2013, separate meetings began being held to focus on the update. Two

update approaches were considered: 1) consultant led and 2) staff led. The staff led approach was selected and work on the update officially began in July 2013.

The update will celebrate the progress that has been made since the IRWMP was adopted and will review the objectives, strategies and projects and will ensure compliance with the latest IRWMP standards developed by the Department of Water Resources. Progress on the update will be presented at the following meetings that may be attended by members of the public:

1. Various publically noticed workshops at the various agencies that have adopted the IRWMP
2. Various publically noticed meetings, at the various agencies that have adopted the IRWMP
3. Basin Technical Advisory Committee
4. San Bernardino Valley Municipal Water District Advisory Commission on Water Policy

Once the update is complete, each agency will conduct a public hearing prior to approving a resolution adopting the updated plan. A schedule has been developed for this process with the goal being to present the updated IRWMP for consideration by the various Boards and Councils in January 2014.

Staff Recommendation

Receive and file

RESOLUTION NO. 2013-13

A RESOLUTION OF THE YUCAIPA VALLEY WATER DISTRICT SUPPORTING THE PREPARATION OF THE UPPER SANTA ANA RIVER WATERSHED INTEGRATED REGIONAL WATER MANAGEMENT PLAN

WHEREAS, the members of the Upper Santa Ana Water Resources Association formed a Technical Advisory Group in 2005 for the purpose of preparing an Integrated Regional Water Management Plan for the upper Santa Ana River watershed; and

WHEREAS, on April 16, 2008, the Yucaipa Valley Water District adopted Resolution No. 06-2008 adopting the Upper Santa Ana River Watershed Integrated Regional Water Management Plan; and

WHEREAS, the Integrated Regional Water Management Planning Act was updated in 2011 requiring Integrated Regional Water Management Plans to have objectives consistent with the State of California's coequal goals of (1) improving water supply reliability and (2) protecting, restoring and enhancing the Delta ecosystem (§ 85054 Water Code) and also to show reduced reliance on State Water Project water through improved self-reliance (§ 85021 Water Code); and

WHEREAS, the Yucaipa Valley Water District will participate in the update of the Upper Santa Ana River Watershed Integrated Regional Water Management Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF YUCAIPA VALLEY WATER DISTRICT AS FOLLOWS:

SECTION 1. The Board of Directors of the Yucaipa Valley Water District support the efforts of the local and regional water agencies to update the Upper Santa Ana River Watershed Integrated Regional Water Management Plan.

SECTION 2. The General Manager is hereby authorized and directed to make copies of the revised Upper Santa Ana River Watershed Integrated Regional Water Management Plan available for public review prior to considering adoption by the Board of Directors of the Yucaipa Valley Water District.

PASSED, APPROVED and ADOPTED this 6th day of November 2013.

YUCAIPA VALLEY WATER DISTRICT

_____

Bruce Granlund, President Board of Directors

ATTEST:

_____

Joseph B. Zoba, General Manager

STATE OF CALIFORNIA

COUNTY OF RIVERSIDE
AND SAN BERNARDINO

I, Joseph B. Zoba, Secretary of the Board of Directors of the Yucaipa Valley Water District, California, do hereby certify that the foregoing resolution being Resolution No. 2013-13 was duly passed, approved and adopted by said Board, approved and signed by the President, and attested by the Secretary at the Regular Meeting held on the 6th day of November 2013, and that the same was passed and adopted by the following vote:

AYES: Director Bruce Granlund, Director Lonni Granlund, Director David Leja, Director Ken Munoz

NOES:

ABSENT: Director Jay Bogh

ABSTAIN:

Executed this 6th day of November 2013 at Yucaipa, California.

Joseph B. Zoba, Secretary of the Yucaipa Valley
Water District and of the Board of Directors

(Seal)

MINUTES OF A REGULAR BOARD MEETING

November 6, 2013

Directors Present:
- Bruce Granlund, President
- Lonni Granlund, Vice President
- David Leja, Director
- Ken Munoz, Director

Staff Present:
- Joseph Zoba, General Manager
- Jennifer Ares, Water Resource Manager
- Bob Wall, Operations Manager

Directors Absent:
- Jay Bogh, Director

Consulting Staff Present:
- David Wysocki, Legal Counsel

Registered Guests and Others Present:
- Amanda Bain, Customer
- Bill Dickson, San Gorgonio Pass Water Agency
- Ray Morris, San Gorgonio Pass Water Agency
- John Jeter, San Gorgonio Pass Water Agency
- Bill Hemsley, City of Yucaipa

CALL TO ORDER

The regular meeting of the Board of Directors of the Yucaipa Valley Water District was called to order by Director Bruce Granlund at 6:00 p.m. at the Administrative Office Building, 12770 Second Street, Yucaipa, California.

FLAG SALUTE

Director Bruce Granlund led the pledge of allegiance.

ROLL CALL

The roll was called and Director Bruce Granlund, Director Lonni Granlund, Director David Leja, and Director Ken Munoz were present. Director Jay Bogh was absent.

PUBLIC COMMENTS

Bill Hemsley from the City of Yucaipa thanked the Board of Directors for considering the waiver of recycled water capacity charges for the habitat conservation area associated with the 13th Street Sports Park.

There were no other public comments.

CONSENT CALENDAR

Director Lonni Granlund moved to approve the consent calendar and Director David Leja seconded the motion to approve the consent calendar.

The motion was approved by a vote of 4 - 0.

BOARD REPORTS

The following reports were provided by the members of the Board of Directors.

- San Gorgonio Pass Regional Water Task Force - Director David Leja provided a report about the items discussed at the Task Force meeting

There were no other board reports.

General Manager Joseph Zoba mentioned that an engineering presentation about the Yucaipa Basin would be provided at the next board workshop.

STAFF REPORT

DISCUSSION ITEMS:

Following a staff presentation by General Manager Joseph Zoba, Director Lonni Granlund moved and Director Ken Munoz seconded a motion to authorize the issuance of a purchase order to Rondy's Glass for replacement doors, windows and frames for a sum not to exceed $8,953.07. The motion was approved by a vote of 4 - 0.

DM 13-071

REPLACEMENT OF GLASS STOREFRONT WINDOWS AT THE ADMINISTRATION BUILDING

Following a staff presentation by Operations Manager Bob Wall, Director David Leja moved and Director Ken Munoz seconded a motion to authorize the issuance of a purchase order to Applied Diving Services for inspection and cleaning services for seventeen water storage facilities. The motion was approved by a vote of 4 - 0.

DM 13-072

ANNUAL INSPECTION AND CLEANING OF WATER STORAGE RESERVOIRS

Following a staff presentation by General Manager Joseph Zoba, Director Ken Munoz moved and Director David Leja seconded a motion to adopt Resolution No. 2013-13. The motion was approved by a vote of 4 - 0.

DM 13-073

CONSIDERATION OF RESOLUTION NO. 2013-13 SUPPORTING THE PREPARATION OF THE UPPER SANTA ANA RIVER WATERSHED INTEGRATED REGIONAL WATER MANAGEMENT PLAN

Following a staff presentation by General Manager Joseph Zoba, Director Lonni Granlund moved and Director David Leja seconded a motion to approve Amendment No. 1 to Task Order No. 25 for RMC Water & Environment. The motion was approved by a vote of 4 - 0.

DM 13-074

CONSIDERATION OF AMENDMENT NO. 1 TO TASK ORDER NO. 25 FOR A DIGESTER REPAIR CONTRACT FOR THE WOCHHOLZ REGIONAL WATER RECYCLING FACILITY

WITH RMC WATER & ENVIRONMENT

Director Lonni Granlund requested additional information about the draft California Water Plan at a future board workshop. DIRECTOR COMMENTS

Director Ken Munoz requested additional information about potential recycled water customers at a future board workshop.

No comments were provided by the members of the Board of Directors.

Director Bruce Granlund mentioned the announcements listed on the agenda. ANNOUNCEMENTS

The meeting was adjourned at 6:25 p.m.

Respectfully submitted,

Joseph B. Zoba, Secretary (Seal)

RESOLUTION NO. 2013-13

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WHEREAS, the Yucaipa Valley Water District will participate in the update of the Upper Santa Ana River Watershed Integrated Regional Water Management Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF YUCAIPA VALLEY WATER DISTRICT AS FOLLOWS:

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SECTION 2. The General Manager is hereby authorized and directed to make copies of the revised Upper Santa Ana River Watershed Integrated Regional Water Management Plan available for public review prior to considering adoption by the Board of Directors of the Yucaipa Valley Water District.

PASSED, APPROVED and ADOPTED this 6th day of November 2013.

YUCAIPA VALLEY WATER DISTRICT

Bruce Granlund, President Board of Directors

ATTEST:

Joseph B. Zoba, General Manager

SAN GORGONIO PASS WATER AGENCY
1210 Beaumont Avenue, Beaumont, CA
Board of Directors Engineering Workshop
Agenda
November 12, 2013 at 1:30 p.m.

1. **Call to Order, Flag Salute and Roll Call**

2. **Public Comment**
   Members of the public may address the Board of Directors at this time relating to any matter within the Agency's jurisdiction. To comment on specific agenda items, please complete a speaker's request form and hand it to the Board Secretary.

3. **Status Report on Upper Santa Ana Watershed Integrated Regional Water Management Plan Update**

4. **Review of Draft Annual Report on Water Conditions Report, Reporting Period 2012*(Page 2)**

5. **Announcements**
   A. Regular Board Meeting, November 18, 2013 at 1:30 p.m.
   B. Finance and Budget Workshop, November 25, 2013 at 1:30 p.m.
   C. Office Closed November 28th and 29th, in observance of the Thanksgiving Holiday
   D. Regular Board Meeting, December 2, 2013 at 1:30 p.m.
   E. Association of California Water Agencies 2013 Fall Conference December 3rd – 6th.

6. **Adjournment**

*Information included in Agenda Packet

(1) Materials related to an item on this Agenda submitted to the Board of Directors after distribution of the agenda packet are available for public inspection in the Agency's office at 1210 Beaumont Avenue, Beaumont during normal business hours. (2) Pursuant to Government Code section 54957.5, non-exempt public records that relate to open session agenda items and are distributed to a majority of the Board less than seventy-two (72) hours prior to the meeting will be available for public inspection at the Agency's office, located at 1210 Beaumont Avenue, Beaumont, California 92223, during regular business hours. When practical, these public records will also be made available on the Agency's Internet Web site, accessible at: www.sgpwa.com (3) Any person with a disability who requires accommodation in order to participate in this meeting should telephone the Agency (951 845-2577) at least 48 hours prior to the meeting in order to make a request for a disability-related modification or accommodation.

MEMO

DATE: **November 21, 2013**

TO: **Anthony W. Araiza, General Manager**

FROM: **Linda Jadeski, Engineering Services Manager**

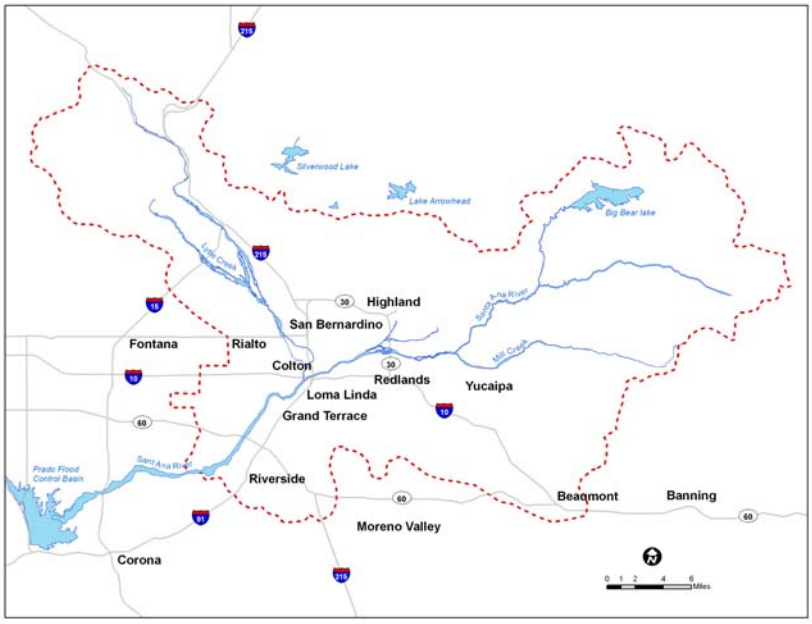
RE: **2013 Update of the Upper Santa Ana River Watershed Integrated Regional Water Management Plan**

The Upper Santa Ana River Watershed Integrated Regional Water Management Plan (IRWMP) is the result of a collaborative planning effort involving sixteen different agencies and led by San Bernardino Valley Municipal Water District (Valley District) and was completed in 2007. It establishes management objectives and identifies strategies and projects to accomplish the objectives. Since the plan was adopted, considerable progress has been made toward achieving the objectives. The Basin Technical Advisory Committee (BTAC), Regional Annual Water Management Plan and Cooperative Recharge Program are just a couple examples of this progress. The IRWMP is currently being updated by staff from the various agencies that adopted the IRWMP.

Before the IRWMP had been developed, the various agencies were required to adopt a resolution of intent to develop an integrated plan per the requirements of the Integrated Regional Water Management Planning Act (Act). The Act does not have any specific requirements for making updates to an IRWMP. Realizing that the intent of the Act is to ensure a planning process that welcomes public input; staff is recommending that the Board notify the public of the update process by including it as an agenda item and by taking a position on the update process during a regular Board meeting.

Background

In December of 2007, the San Bernardino Valley Municipal Water District (Valley District) adopted the IRWMP. The IRWMP covers all, or portions of the cities and communities of San Bernardino, Riverside, Fontana, Rialto, Colton, Grand Terrace, Loma Linda, Highland, Redlands, Mentone, Yucaipa, Big Bear Lake, the San Timoteo Watershed, and a large portion of the San Bernardino National Forest. It was developed through an open, public process, which involved sixteen different public agencies. Each of these agencies helped develop the IRWMP by their participation in a Technical Advisory Group (TAG). The TAG met twice a month during the planning process and presented updates to their elected officials as well as quarterly updates to the Advisory Commission. When the IRWMP was complete, the TAG became the Basin Technical Advisory Committee (BTAC), which began working to implement the IRWMP.



Integrated Regional Water Management Plan Study Area

The following agencies adopted the IRWMP:

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2. Big Bear Lake Department of Water and Power
3. East Valley Water District
4. City of Loma Linda

5. Meeks & Daley Water Company
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8. County of San Bernardino
9. San Bernardino Valley Municipal Water District
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16. Yucaipa Valley Water District

Valley District agreed to lead the planning effort using a grant from the California Department of Water Resources (DWR). The main goal was to establish the following objectives and strategies to capitalize on all water management opportunities:

Objectives	**Strategies**

Improve Water Supply Reliability	• Water Conservation and Recycling
	• Groundwater management
	• Surface water management
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	• Disaster preparedness
	• Climate change

Protect and enhance water quality	• Monitoring • Remediation • Improvement
Ecosystem restoration and environmental enhancement	• Habitat protection and enhancement • Wetlands restoration • Land use planning • Recreation and public access

Since the adoption of the plan, the region has made considerable progress toward meeting each of the objectives.

The IRWMP generally concludes that the region will be able to meet its future water needs by 1) implementing water conservation and water recycling programs that reduce overall demands, 2) efficiently managing its local water resources and 3) optimizing the use of imported water from the State Water Project by storing it when it is available for later use during drought periods.

During development of the IRWMP, it was decided to review and update the document every 5 years, which would have meant an update in 2012. However, in 2012, the region was completing the *San Bernardino Valley Regional Urban Water Management Plan* and, therefore, decided to postpone update of the IRWMP until after completion of the RUWMP. Discussions about the update of the IRWMP began during BTAC Engineering Subcommittee meetings. In June 2013, separate meetings began being held to focus on the update. Two update approaches were considered: 1) consultant led and 2) staff led. The staff led approach was selected and work on the update officially began in July 2013.

The update will celebrate the progress that has been made since the IRWMP was adopted and will review the objectives, strategies and projects and will ensure compliance with the latest IRWMP standards developed by the Department of Water Resources. Progress on the update will be presented at the following meetings that may be attended by members of the public:

1. Various publically noticed meetings, at the various agencies that have adopted the IRWMP
2. Basin Technical Advisory Committee
3. San Bernardino Valley Municipal Water District Advisory Commission on Water Policy

Once the update is complete, each agency will conduct a public hearing prior to approving a resolution adopting the updated plan. A schedule has been developed for this process with

the goal being to present the updated IRWMP for consideration by the various Boards and Councils in January 2014.

Staff Recommendation

Receive and file.

WEST VALLEY WATER DISTRICT
855 West Base Line Road, Rialto, CA

BOARD MEETING
AGENDA

Thursday, November 21, 2013 - 3:00 p.m.

"In order to comply with legal requirements for posting of agendas, only those items filed with the District Secretary's office by noon, Friday, prior to the following Thursday meeting, not requiring departmental investigation will be considered by the Board of Directors."

OPENING CEREMONIES

Pledge of Allegiance – Director
Call to Order by President Tillman
Roll Call of Board Members: President Tillman, Directors Dyer, Gosney, Olinger, Cox

ADOPT AGENDA

CONSENT CALENDAR

(All matters on the Consent Calendar are to be approved on one motion, unless a Board Member, Staff Member, or any member of the public requests a separate action on a specific item.)

Consideration of:

1. Minutes of the Regular Meeting of November 7, 2013.

2. Payment to Envirogen Technologies for professional Services rendered during the month of October 2013; Invoice #0004867-IN dated 10/31/13.

3. Payment to Alliant Consulting, Inc. for Professional Services rendered for the Groundwater Wellhead Treatment System Project; Invoice 4561 dated 11/5/13.

4. Payment to Alliant Consulting, Inc. for Professional Services rendered for the Wellhead Pipeline Project; Invoice #4562 dated 11/5/13.

5. Payment to Alliant Consulting, Inc. for Professional Services rendered for Wells No. 6 & 11 Rehab Project; Invoice #4563 dated 11/5/13.

6. Payment to Engineering Resources of Southern California, Inc. for Professional Service rendered for the period 9/30/13 to 10/27/13; Project #'s 62026187 and 62026179.

7. Payment to ESRI for Professional Services rendered for GIS Pilot Study; Invoice #92730203 dated 11/8/13.

PUBLIC PARTICIPATION

(The public may address the Board on matters within its jurisdiction. Speakers are requested to keep their comments to no more than three (3) minutes. However, the Board of Directors is prohibited by State Law to take action on items not included on the printed agenda).

PUBLIC HEARING

None

BUSINESS MATTERS

Consideration of:

1. Approval to Purchase One (1) Caterpillar 420F 4X4 Backhoe and Permission to Surplus One (1) Case 480L Skip Loader and One (1) Case 580K Backhoe.

2. Adopting Resolution No. 2013-10, Supporting the Nomination of Kathleen Tiegs from the Floor as the Association of California Water Agencies Vice-President.

3. Adopting Resolution No. 2013-11, Amending Resolution 2011-11, "Cafeteria Plan."

4. Adopting Resolution No. 2013-12, Commending Donald D. Olinger for his Years of Service as a Member of the Board of Directors.

5. Adopting Resolution No. 2013-13, Commending Jacqueline S. Cox for her Years of Service as a Member of the Board of Directors.

6. Adopting Resolution 388.52 and Ordinance No. 77, Amending Resolution No. 388.51, Personnel Policies and Practices.

7. Approval of Agreement for Professional Services with Geoscience Support Services, Inc.

8. Approval of Task Order No. 1 of Agreement for Professional Services with Geoscience Support Services, Inc. for the Sentinel Well Project.

9. Approval of the Updated Water Supply Assessment for the West Valley Logistics Center.

10. 2013 Update of the Upper Sana Ana River Watershed Integrated Regional Water Management Plan.

11. Authorization to Reject Claim Presented by Verizon.

12. Approval of Staff to Continue with Water Conservation Calendars for 2015.

13. Approval of Purchase of Bottled Water.

REPORTS – LIMITED TO 5 MINUTES MAXIMUM (Presentations or handouts must be provided to Board Members in advance of Board Meeting).

1. Committees

2. Legal Counsel/Consultant

3. General Manager

(a) Nov. 14th – Attended the USAWRA meeting.

(b) Nov. 18th – Attended the Association of San Bernardino County Special Districts membership meeting.

4. Assistant General Manager

(a) Update on installation and operation of the District's groundwater treatment projects.

(b) Update on Bio-Remediation Project.

(c) Nov. 18th – Attended the Upper Santa Ana River Habitat Conservation Plan (HCP) covered activities meeting.

5. Engineering Services Manager

(a) Developer's Projects

(b) District's Projects

6. CFO/Treasurer

(a) Nov. 18th – Attended Association of San Bernardino County Special Districts.

(b) Nov. 21st – Attended the Treasurer's Association, Ontario.

7. Superintendent

(a) Treatment Plant Operations

(b) District Reservoirs and Wells

8. Water Conservation Coordinator

(a) Nov. 16th – Attended the Inland Solar Challenge Boat Build meeting.

(b) Nov. 18th – Attended Upper Santa Ana River Habitat Conservation Plan (HCP) covered activities meeting.

(c) Nov. 19th – Conference call with Grant Consultant regarding WATERSMART Grant.

(d) Nov. 21st – Attended the BTAC Conservation Sub-Committee meeting.

9. Human Resources/Risk Manager

(a) Days without "Lost Time" Claims.

(b) Nov. 18th – Attended the Association of San Bernardino County Special Districts membership meeting.

10. IT Administrator

11. Executive Assistant

CLOSED SESSION

- Conference with legal counsel—existing litigation - pursuant to Government Code Subdivision (a) Section 54956.9. San Bernardino Valley Municipal Water District, et al., v. Fontana Union Water Company, et al Case No. CIVDS 1311085.

- Conference with legal counsel—potential litigation - pursuant to Government Code Section 54956.9.

FUTURE AGENDA ITEMS

INFORMATION

(a) Certificate of Appreciation from American Cancer Society Relay for Life.

(b) Thank you letter from California State University San Bernardino.

ADJOURN

DECLARATION OF POSTING: I declare under penalty of perjury, that I am employed by the West Valley Water District and posted the foregoing Agenda at the District Offices on November 18, 2013.

Peggy Asche

Peggy Asche
Executive Assistant/Board Secretary

Requests for a disability related modification or accommodation, including auxiliary aids or services, in order to attend or participate in a meeting, should be made to the Board Secretary, Peggy Asche, at least 48 hours in advance of the meeting to ensure availability of the requested service or accommodation. Mrs. Asche may be contacted by telephone at (909) 875-1804 x 703, or in writing at the West Valley Water District, P.O. Box 920, Rialto, CA 92377-0920.

Agenda Item No. _____

CITY OF YUCAIPA
AGENDA REPORT

TO: Honorable Mayor and City Council

FROM: Bill Hemsley, Public Works Director /City Engineer

FOR: City Council Meeting of November 25, 2013

SUBJECT: Status Report on the 2013 Upper Santa Ana River Watershed Integrated Regional Water Management Plan Update

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RECOMMENDATION:

That City Council review this status update on the 2013 Upper Santa Ana River Watershed Integrated Regional Water Management Plan Update.

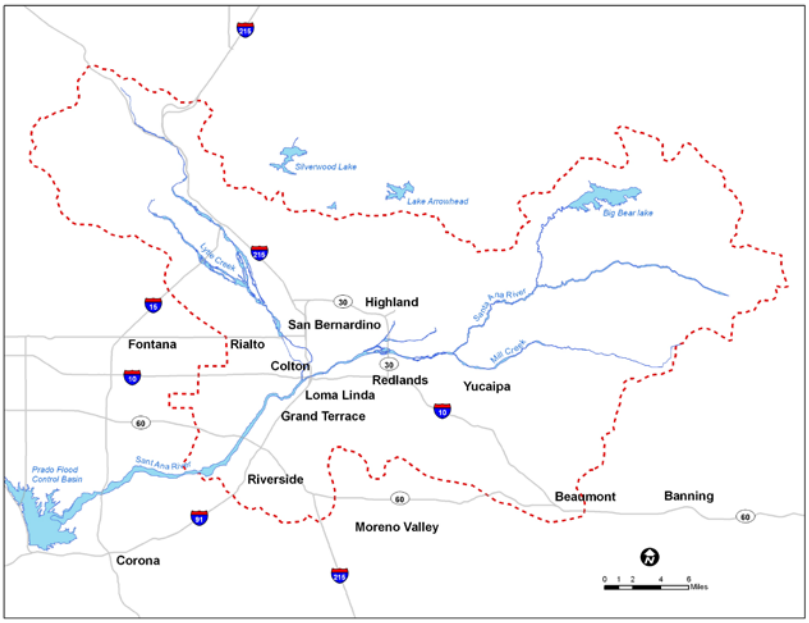
BACKGROUND/DISCUSSION:

The Upper Santa Ana River Watershed Integrated Regional Water Management Plan (IRWMP) was the result of a collaborative planning effort involving16 different agencies and led by San Bernardino Valley Municipal Water District and was completed in 2007. It establishes management objectives and identifies strategies and projects to accomplish the objectives. Since the plan was adopted, considerable progress has been made toward achieving the objectives. The Basin Technical Advisory Committee (BTAC), Regional Annual Water Management Plan and Cooperative Recharge Program are just a few examples of this progress. The IRWMP is currently being updated by staff from the various agencies that adopted the IRWMP.

Before the IRWMP was developed, the various agencies were required to adopt a resolution of intent to develop an integrated plan per the requirements of the Integrated Regional Water Management Planning Act (Act). The Act does not have any specific requirements for updating an IRWMP. Realizing the intent of the Act is to ensure a planning process that welcomes public input, special counsel David Aladjem has recommended that the Board notify the public of the update process by including it as an agenda item and by taking a position on the update process during a regular Board meeting.

In December of 2007, the San Bernardino Valley Municipal Water District (Valley District) adopted the IRWMP. The IRWMP covers all, or portions of the cities and communities of San Bernardino, Riverside, Fontana, Rialto, Colton, Grand Terrace, Loma Linda, Highland, Redlands, Mentone, Yucaipa, Big Bear Lake, the San Timoteo Watershed, and a large portion of the San Bernardino National Forest. It was developed through an open, public process, which involved sixteen different public agencies. Each of these agencies helped develop the IRWMP by their participation in a Technical Advisory Group (TAG). The TAG met twice a month during the planning process and presented updates to their elected officials as well as quarterly updates to the Advisory Commission. When the IRWMP was complete, the TAG became the

Basin Technical Advisory Committee (BTAC), which began working to implement the IRWMP.



Integrated Regional Water Management Plan Study Area

The following agencies adopted the IRWMP:

1. Beaumont Basin Watermaster
2. Big Bear Lake Department of Water and Power
3. East Valley Water District
4. City of Loma Linda
5. Meeks & Daley Water Company
6. City of Riverside
7. City of Redlands
8. County of San Bernardino
9. San Bernardino Valley Municipal Water District
10. San Bernardino Valley Water Conservation District
11. San Gorgonio Pass Water Agency
12. San Bernardino Municipal Water Department
13. San Timoteo Watershed Management Authority
14. West Valley Water District
15. City of Yucaipa
16. Yucaipa Valley Water District

Valley District agreed to lead the planning effort using a grant from the California Department of Water Resources (DWR). The main goal was to establish the following objectives and strategies to capitalize on all water management opportunities:

Objectives	**Strategies**

Improve Water Supply Reliability	• Water Conservation and Recycling
	• Groundwater management
	• Surface water management
	  o Stormwater capture
	  o "Tilted basin" (wet year storage)
	• Disaster preparedness

Protect and enhance water quality	• Climate change
Ecosystem restoration and environmental enhancement	• Monitoring • Remediation • Improvement
	• Habitat protection and enhancement • Wetlands restoration • Land use planning • Recreation and public access

Since the plan was adopted, the region has made considerable progress toward meeting each of the objectives.

The IRWMP generally concludes that the region will be able to meet its future water needs by 1) implementing water conservation and water recycling programs that reduce overall demands, 2) efficiently managing its local water resources and 3) optimizing the use of imported water from the State Water Project by storing it when it is available for later use during drought periods.

During development of the IRWMP, it was decided to review and update the document every 5 years, which would have meant an update in 2012. However, in 2012, the region was completing the San Bernardino Valley Regional Urban Water Management Plan and, therefore, decided to postpone update of the IRWMP until after completion of the RUWMP.

Discussions about the update of the IRWMP began during BTAC Engineering Subcommittee meetings. In June 2013, separate meetings began being held to focus on the update. Two update approaches were considered: 1) consultant led and 2) staff led. The staff led approach was selected and work on the update officially began in July 2013.

The update will celebrate the progress that has been made since the IRWMP was adopted and will review the objectives, strategies and projects and will ensure compliance with the latest IRWMP standards developed by the Department of Water Resources. Progress on the update will be presented at the following meetings that may be attended by members of the public:

1. Various publically noticed workshops at the various agencies that have adopted the IRWMP
2. Various publically noticed meetings, at the various agencies that have adopted the IRWMP
3. Basin Technical Advisory Committee
4. San Bernardino Valley Municipal Water District Advisory Commission on Water Policy

Once the update is complete, each agency will conduct a public hearing prior to approving a resolution adopting the updated plan. A schedule has been developed for this process with the goal being to present the updated IRWMP for consideration by the various Boards and Councils in January 2014.

The updated IRWMP will include Wilson III Detention Basin as the City of Yucaipa's eligible project, estimated to be $8.9 million. In order to be eligible for funding administered by the State Department of Water Resources, a project must be listed in the IRWMP.

FISCAL IMPACT:

There is no fiscal impact to the City related to the attached summary or the proposed YVWD resolution modifications.

CONCLUSION:

It is recommended that City Council review this status update on the 2013 Upper Santa Ana River Watershed Integrated Regional Water Management Plan Update.

Approved by:_____

Basin Technical Advisory Committee

REVISED

Meeting No. 66

AGENDA

San Bernardino Valley Municipal Water District
380 E. Vanderbilt Way
San Bernardino, CA 92408

December 2, 2013, 1:30 p.m.

Bear Valley Mutual Water Company

City of Colton

East Valley Water District

City of Loma Linda

City of Redlands

City of Rialto

City of Riverside

San Bernardino County Flood Control District

San Bernardino Municipal Water Department

San Bernardino Valley Municipal Water District

San Bernardino Valley Water Conservation District

West Valley Water District

Western Municipal Water District

Yucaipa Valley Water District

1 Call to Order/Introductions

2) Approval of Minutes

A. October 7, 2013 Meeting (Page 3)

3) New Business

A. Update from Stantec and Geoscience on the Groundwater Model Enhancements Project

B. Consider Proposed New Appendix I to the 2014 Regional Water Management Plan – Dewatering Contingency Plan for the Area of Historic High Groundwater (Page 11)

C. Consider Proposed New Appendix J to the 2014 Regional Water Management Plan – Compliance with the Water Conservation Act of 2009, SBX7-7 (Page16)

D. Consider 2014 Regional Water Management Plan (Page 29)

4) Old Business

A. Report on the Update of the Upper Santa Ana River Watershed Integrated Regional Water Management Plan

B. Report from the Engineering Subcommittee

380 East Vanderbilt Way
San Bernardino, CA 92408
909.387.9200 ph
909.387.9247 fax
www.sbvmwd.com

Tom Crowley, Chair

Greg Gage, Chair
Project Implementation Group

Matt Litchfield, Chair
Engineering Subcommittee

Bob Tincher, Chair
Conservation Subcommittee

Basin Technical Advisory Committee

C. Report from the Water Conservation Subcommittee

D. Report from the Project Implementation Group

E. Discussion of State Water Project Allocation Supply Availability

F. Update on Proposed New Critical Habitat Designation for the Santa Ana Sucker

G. Emergency Response Network of the Inland Empire

5) Other Business

A. Confirm Next Meeting Date of February 3, 2014 at 1:30 p.m.

6) Adjourn

Bear Valley Mutual Water Company

City of Colton

East Valley Water District

City of Loma Linda

City of Redlands

City of Rialto

City of Riverside

San Bernardino County Flood Control District

San Bernardino Municipal Water Department

San Bernardino Valley Municipal Water District

San Bernardino Valley Water Conservation District

West Valley Water District

Western Municipal Water District

Yucaipa Valley Water District

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Tom Crowley, Chair

Greg Gage, Chair
Project Implementation Group

Matt Litchfield, Chair
Engineering Subcommittee

Bob Tincher, Chair
Conservation Subcommittee



Appendix B: Legal Agreements

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Summaries of Agreements

Integrated Regional Water Management Planning Act

In 2002, the California Legislature passed Senate Bill 1672, the Integrated Regional Water Management Planning Act, and the Governor signed it into law. The Bill added Part 2.2 (commencing with Section 10530) to Division 6 of the Water Code: Conservation, Development and Utilization of State Water Resources.

The Integrated Regional Water Management Planning Act authorized a "regional water management group" to prepare and adopt a regional plan in accordance with certain procedures that addresses programs, projects, reports, or studies relating to water supply, water quality, flood protection, or related matters, over which any local public agency that is a participant in that group has authority to undertake.

The law requires DWR, the SWRCB, and the State Department of Health Services to include in any set of criteria used to select the projects and programs for grant funding "…a criterion that provides a benefit for qualified projects or programs."

To comply with the requirements of the law, DWR and SWRCB prepared standards (also referred to as IRWM Guidelines) for preparation of IRWM Plans. In addition, they established set criteria for selection of the projects and programs to be funded under Chapter 8 of Proposition 50, the Integrated Regional Water Management Implementation Grant Program. The guidelines state that, "The intent of the IRWM Grant Program is to encourage integrated regional strategies for management of water resources and to provide funding, through competitive grants, for projects that protect communities from drought, protect and improve water quality, and improve local water security by reducing dependence on imported water."

This IRWM Plan is prepared in compliance with the Integrated Regional Water Management Planning Act and DWR and SWRCB Guidelines and the intent of the grant program.

Groundwater Management Planning Act

In 2002, Senate Bill 1938, Groundwater Management Planning Act of 2002, was enacted into law. This law amended AB3030, which authorizes a local agency to prepare and implement a groundwater management plan. This law requires a local agency that elects to develop a groundwater management plan to follow specific requirements, including public notification and public involvement process as summarized below.

- Make available to the public a written statement describing the manner in which interested parties would be allowed to participate in the development of the plan.
- For the purposes of qualifying as a groundwater management plan and for receiving State funds administered by DWR for the construction of groundwater projects or groundwater quality projects, prepare and implement a plan that includes certain basin management objectives (BMOs) and components and adopt certain monitoring protocols.
- The law requires the local agency to submit a copy of the plan to DWR, in an electronic format, if practicable, approved by the DWR, and DWR would be required to make copies available to the public.
- Prior to adopting a resolution of intention to draft a groundwater management plan, a local agency shall hold a hearing after publication of notice on whether to adopt a resolution of intention to draft a groundwater management plan pursuant to this part for the purposes of implementing the plan and establishing a groundwater management program. At the conclusion of the hearing, the local agency may draft a resolution of intention to adopt a groundwater management plan pursuant to this part for the

purposes of implementing the plan and establishing a groundwater management program. Upon written request, the local agency shall provide any interested person with a copy of the resolution of intention.

- The local agency shall prepare a groundwater management plan within two years of the date of the adoption of the resolution of intention. If the plan is not adopted within two years, the resolution of intention expires, and no plan may be adopted except pursuant to a new resolution of intention adopted in accordance with this chapter.
- After a groundwater management plan is prepared, the local agency shall hold a second hearing to determine whether to adopt the plan. Notice of the hearing shall be given pursuant to Section 6066 of the Government Code. The notice should include a summary of the plan and shall state that copies of the plan may be obtained for the cost of reproduction at the office of the local agency. At the second hearing, the local agency shall consider protests to the adoption of the plan. At any time prior to the conclusion of the hearing, any landowner within the local agency may file a written protest or withdraw a protest previously filed.

Senate Bill 1938 does not require local agencies to prepare a groundwater management plan for the basins that are managed through adjudications. These long-standing adjudications govern the water rights and management of the basins. Any groundwater management planning would need to conform with the provisions of those adjudications and would require agreement and approval of the parties in those adjudications. The basins in the Upper Santa Ana watershed are adjudicated "in gross." The agencies in the region, however, decided to prepare the plan because they strongly support the intent of the law that states, "It is the intent of the Legislature to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions. The preparation of certain basin management objectives will assist local agencies in optimizing local resources while protecting groundwater and surface water resources. The preparation of basin management objectives also will facilitate an understanding of the basin or subbasin, thereby allowing local agencies, individually and cooperatively, to meet local, regional, and state water needs through conjunctive management, while ensuring that no particular water supply is jeopardized."

A purpose of this IRWM Plan is to meet the intent and requirements of Senate Bill 1938.

Orange County Judgment

In 1963, the OCWD filed suit against substantially all water users in the area tributary to Prado Dam seeking adjudication of water rights on the SAR. The litigation ultimately involved over 4,000 served water users and water agencies, the four largest of which were OCWD, Valley District, Western, and the Chino Basin Municipal Water District (now the Inland Empire Utilities Agency). Given the magnitude of the potential litigation, these four districts and other parties developed a settlement that was approved by the Orange County Superior Court in a stipulated judgment entered on April 17, 1969 (Orange County Judgment). The Orange County Judgment imposes a physical solution that requires parties in the Upper SAR watershed to deliver a minimum quantity and quality of water to points downstream, including Riverside Narrows and Prado Dam. A provision of the Orange County Judgment related to conservation establishes that once the flow requirements are met, the upper area parties "…may engage in unlimited water conservation activities, including spreading, impounding, and other methods, in the area above Prado reservoir." The Orange County Judgment is administered by the five-member SAR Watermaster that reports annually to the court and the four representative agencies. Valley District, Inland Empire Utilities Agency, and Western nominate one member each to the Watermaster; OCWD nominates two members; and members are then appointed by the court.

Western Judgment

The Western Judgment, entered simultaneously with the Orange County Judgment, settled rights within the Upper SAR watershed in part to ensure that those resources upstream of Riverside Narrows would be sufficient to meet the flow obligations of the Orange County Judgment at Riverside Narrows. Toward this end, the Western Judgment generally provides for the following:

- A determination of safe yield of the San Bernardino Basin Area (SBBA),
- Establishment 64,872 acre-feet rights that can be extracted from the SBBA by plaintiff parties. This is equal to 27.95 percent of safe yield,
- An obligation of Valley District to replenish any extractions from SBBA by non-plaintiffs in aggregate in excess of 167,228 acre-feet(equal to 72.05 percent of safe yield),
- An obligation of Western to replenish the Colton and Riverside Basins if extractions for use in Riverside County in aggregate exceed certain specific amounts, and
- An obligation of Valley District to replenish the Colton and Riverside basins if water levels are lower than certain specific water level elevations in specified wells.

Like the Orange County Judgment, the Western Judgment identifies regional representative agencies to be responsible, on behalf of the numerous parties bound thereby, for implementing the replenishment obligations and other requirements of the judgment. The representative entities for the Western Judgment are Valley District and Western. Valley District and Western are principally responsible for providing replenishment of the groundwater basins if extractions exceed amounts specified in the judgment or as determined by the Watermaster. For the purposes of this replenishment obligation, Valley District acts on behalf of all defendants (Non-Plaintiffs) dismissed from the Western Judgment and, similarly, Western acts on behalf of the Plaintiffs and other dismissed parties within Western. Plaintiff parties with specific rights to produce 27.95 percent of the safe yield from the SBBA are the City of Riverside, Riverside Highland Water Company, Meeks & Daley Water Company, and the Regents of the University of California (Regents). The Western Judgment is administered by the two-person Western-San Bernardino Watermaster—one person nominated each by Valley District and Western, and both appointed by the court.

Like the Orange County Judgment, the Western Judgment contemplates that the parties will undertake "new conservation," which is defined as any increase in replenishment from natural precipitation resulting from operation of works and facilities that did not exist in 1969. The Western Judgment specifies that the parties to the judgment have the right to participate in any new conservation projects and, provided their appropriate shares of costs are paid, rights under the judgment are increased by the respective shares in new conservation (72.05 percent by Valley District and 27.95 by Western).

The Beaumont Basin Judgment

In February 2003, the STWMA filed suit in Riverside County Superior Court to adjudicate pumping and storage rights in the Beaumont Basin. The STWMA and the major pumpers developed a Stipulated Agreement to resolve the lawsuit. In February 2004, the Stipulated Agreement was approved by the Court.

This Stipulated Agreement established pumping rights among the two major classes of pumpers—overlying and appropriative pumpers. The overlying pumpers were assigned fixed rights with some flexibility to vary their maximum use during any five-year period. The safe yield established in the Stipulated Agreement is 8,650 acre-feet per year. The total of the overlying producers' rights is equal to the safe yield. Collectively, the overlying pumpers produce substantially less than their aggregate rights. Appropriators' rights are stated as a percentage or

fraction of water in the safe yield that is not used by the overlying pumpers. The Stipulated Agreement provides for the orderly transition of land use and associated water uses through detailed provisions that require the assignment of rights from an overlying pumper to an appropriator when the appropriator provides service to the lands of the overlying pumper.

The Stipulated Agreement declares that there is a temporary surplus of water in the basin of 160,000 acre-feet. The temporary surplus can be used by the appropriators during the first ten years of the Stipulated Agreement. The appropriators will store the unused portion of the temporary surplus for use in subsequent years. The intent of removing the temporary surplus is to create additional evacuated storage space in the basin for use in storing supplemental water. The Stipulated Agreement gives control of the evacuated storage space in the basin and the overall management of storage to the Watermaster.

1961 Rialto Basin Judgment

The Rialto-Colton Basin was adjudicated in the Lytle Creek Water & Improvement Company vs. Fontana Ranchos Water Company, et. al., San Bernardino County Superior Court Action 81264, entered on December 22, 1961. Limits on groundwater extractions are based on the average of the spring-high water level elevations of three wells within the basin. The pro rata water productions by each party (City of Colton, City of Rialto, Fontana Union Water Company, West Valley Water District) are based on the "spring-high water level" in the three index wells as described below:

Above 1002.3 feet	Unlimited
Between 1002.3 and 969.7 feet	As imposed by the judgment
Below 969.7 feet	Reduced by 1% for every foot the average is below 969.7

At the request of several of the stipulating parties, Valley District monitors compliance with the decree and has since the early 1990s.

Cooperative Agreement to Protect Water Quality and Encourage the Conjunctive Uses of Imported Water in the Santa Ana River Basin

Water agencies within the Santa Ana River watershed recognize the importance of protecting the quality of its groundwater resources. In July 2007, many of these agencies (Parties) entered into an agreement with the RWQCB for purposes of monitoring and improving water quality within the SAR Region. The agreement is limited in scope and specifically addresses Salinity Objectives.

Generally, the agreement requires that the Parties analyze the effects on water quality of recharging imported water into groundwater basins. This analysis will be compiled into a report and submitted to the RWQCB every three years (Triennial Water Quality Report). In addition, any new project that will include the recharge of imported water must analyze its effects prior to implementation.

Seven Oaks Accord

On July 21, 2004, Valley District, Western, the City of Redlands, East Valley Water District, Bear Valley Mutual Water Company (Bear Valley Mutual), Lugonia Water Company, North Fork Water Company, and Redlands Water Company signed a settlement agreement known as the Seven Oaks Accord (Accord). The Accord calls for Valley District and Western to recognize the prior rights of the water users for a portion of the natural flow of the SAR. In exchange, the water users agree to withdraw their protests to the water right application submitted by Valley District on behalf of itself and Western. All the parties to the Accord have agreed to support the granting of other necessary permits to allow Valley District and Western to divert water from the SAR. By means of the Accord,

Valley District agreed to modify its water right applications to incorporate implementation of the Accord. Additionally, the Accord calls for Valley District to develop and manage a groundwater spreading program that will maintain groundwater levels at a number of specified wells owned and operated by the other parties. This integrated management of the basin will be adopted within five years of SWRCB approval of the water right applications.

Management of water resources in the Valley District/Western service area takes place within a complex legal and institutional framework as will be discussed in the next section. Development of a comprehensive, coordinated regional water management plan will involve the cooperation of many parties interested in water management in addition to the signatories of the Accord. The Accord provides the framework and a cooperative environment for major water entities in the Upper SAR watershed to prepare a plan for the integrated management of the region's surface water and groundwater resources. This IRWM Plan enhances and refines the current management and planning activities within the region and develops regional water management strategies and the framework for their implementation.

Agreement Relating to the Diversion of Water from the Santa Ana River System Among Western Municipal Water District of Riverside County, Valley District and City of Riverside

In July 2004 a Settlement Agreement Relating to the Diversion of Water from the Santa Ana River System (the Seven Oaks Accord) was signed. The agreement requires Valley District and Western to develop a groundwater spreading program in cooperation with other parties, "That is intended to maintain groundwater levels at the specified wells at relatively constant levels, in spite of the inevitable fluctuations due to hydrologic variation." Other requirements of the Seven Oaks Accord are as follows:

- The groundwater management plan shall identify target water-level ranges in the specified "index wells" subject to the requirement that such spreading will not worsen high groundwater levels in the Pressure Zone.
- Thresholds of significance in terms of SAR water diverted by Valley District and Western and spreading by all parties should be observed. See Appendix I of the Accord (sidebar).
- The determination as to whether a certain groundwater management action will "worsen" high groundwater levels in the Pressure Zone is made through the use of the integrated surface and groundwater models.
- An "integrated management program" must be "adopted" within five years of the date the SWRCB grants a permit to Valley District/Western to divert water from the SAR. Valley District and Western have presented their data to the SWRCB and were told that any permit "terms" would be available in late 2007.
- Water users agree to limit spreading to conform to an annual management plan.

Santa Ana River-Mill Creek Cooperative Water Project Agreement

The SAR-Mill Creek Cooperative Water Project Agreement (informally known as the Exchange Plan) is an agreement among 9 agencies and water companies in eastern San Bernardino Valley executed in May 1976. The 9 parties to the Exchange Plan are as follows:

- Redlands Water Company, Bear Valley Mutual, Crafton Water Company, North Fork Water Company [East Valley Water District], Lugonia Water Company, City of Redlands, San Bernardino Water Conservation District (SBVWCD), YVWD, and the Valley District;

In an effort to avoid pumping costs and to lower the overall cost of water, the parties have agreed to the exchange of water from the SAR, Mill Creek, and the SWP. The agreement is described as a "bucket-for-bucket exchange," whereby a party to the agreement provides a "bucket" of their water to a second, higher elevation party, and the

second party provides a "bucket" of water from an alternate, lower elevation source back to the original party. To facilitate exchanges, parties to the agreement share their existing facilities. However, specific facilities (called Cooperative Water Project facilities) were built and are operated by Valley District in part to accommodate Exchange Plan deliveries. Given the three water sources and the available facilities, there are multiple delivery possibilities. Examples of exchanges that occur under the Exchange Plan include two-level exchanges, three-level exchanges, and water banking with DWR. In a two-level exchange, two water sources are used; for example, SAR water is delivered to Mill Creek water users, and, in return, an equal amount of SWP water is delivered to SAR water users. In a three-level exchange, three sources are used. For example, Mill Creek water is delivered to the Yucaipa area, an equal amount of SAR water is then delivered to Mill Creek water users, and finally SWP water is delivered to SAR water users. To bank water within the SWP, a party entitled to local water exchanges their water when the local water is available and then takes SWP water at a later date.

Big Bear Lake Operations

Bear Valley Dam, which forms Big Bear Lake, is the only major dam that affects runoff into Seven Oaks Dam. Big Bear Lake is a water conservation reservoir presently owned by the Big Bear Municipal Water District (Big Bear Municipal). Big Bear Lake is located on Bear Creek, a tributary to the SAR. The lake has a drainage area of about 38 square miles.

Bear Valley Mutual and its predecessors constructed, owned, and operated Big Bear Lake as a supplemental water supply reservoir to meet the irrigation water supply demand within the Bear Valley Mutual service area in the easterly end of the San Bernardino Valley. Historical irrigation releases during dry periods sometimes caused low water levels in Big Bear Lake.

As recreation uses of Big Bear Lake became more important, Big Bear Municipal sought to control the water levels in the lake. On February 4, 1977, a stipulated judgment was entered in San Bernardino County Superior Court for Case No. 165493 Big Bear Municipal Water District vs. North Fork Water Co. et al. Big Bear Municipal obtained the opportunity to furnish "in-lieu" water from several other named sources other than Big Bear Lake to meet the water supply demands of Bear Valley Mutual. Big Bear Municipal was allowed to retain an amount of water in Big Bear Lake equal to the amount of water furnished in-lieu to Bear Valley Mutual. Big Bear Municipal explored and implemented the alternate sources. Providing water from these alternate in-lieu sources resulted in water being retained in Big Bear Lake to stabilize the water levels in the lake.

On May 1, 1987, Big Bear Municipal adopted operating criteria for Big Bear Lake that contain conditions regarding when Big Bear Municipal will release water from Big Bear Lake and when Big Bear Municipal will acquire in-lieu water for Bear Valley Mutual.

On February 16, 1995, the SAR Water Quality Control Board adopted Order No. 95-4, which requires that Big Bear Municipal make releases from Big Bear Lake through Bear Valley Dam to provide water for preservation of fish in Bear Creek.

On February 1, 1996, Big Bear Municipal and Valley District entered into an agreement that provides for Valley District to furnish all in-lieu water that Big Bear Municipal needs to meet the water supply demands of Bear Valley Mutual.

As a result of the stipulated Judgment, Big Bear Lake is now maintained at higher levels for recreational uses. The lake will spill (i.e., need to release water because the reservoir is full) more often than occurred under the historic irrigation supply operation. However, inflow to the SAR during irrigation months may be less than historic irrigation releases. Inflow to the SAR during winter months may be greater than under the historic operation of Bear Valley Dam. The changes in the operation of Big Bear Lake from an irrigation water supply reservoir to a recreation reservoir result in changes in the timing and amounts of water Big Bear Lake and Bear Creek contribute to the SAR.

Settlement Agreement with San Bernardino Valley Water Conservation District

Within the settlement agreement dated August 9, 2005, Valley District, Western, and the SBVWCD have agreed to work cooperatively to develop an annual groundwater management plan.

Memorandum of Understanding (MOU) with the City of Riverside

In September 2005, Valley District, Western, and the City of Riverside entered into an MOU. The MOU stated that the intent of Valley District/Western is to work cooperatively with the City of Riverside to devise institutional and physical arrangements through which the city could directly benefit from "new conservation" undertaken as part of the Western Judgment and the pending Valley District/Western water right applications. The MOU states, "The Parties (Valley District, Western, and the City of Riverside) shall engage in good-faith negotiations with the goal of reaching a long-term agreement relating to the purchase, storage, and sale to Riverside by Western of imported water stored in the SBBA, and relating to storage, transport and delivery of conservation water from the Seven Oaks Dam..."

Institutional Controls and Settlement Agreement (ICSA)

The City of San Bernardino Municipal Water Department (SBMWD) is a party to a consent decree lodged with the United States District Court, Central District of California, Western Division (Court), on August 18, 2004. The Consent Decree obligates SBMWD to operate and maintain a system of wells and treatment plants known as the Newmark Groundwater Contamination Superfund Site (Newmark Site). The Newmark Site specifically treats groundwater contaminated with trichloroethylene (TCE) and perchloroethylene (PCE). The SBMWD is required by the terms of the Consent Decree, entered on March 23, 2005, to enact institutional controls and implement an ordinance providing for the protection and management of the Interim Remedy set forth in the Record of Decisions and Explanation of Significant Differences prepared by the U.S. Environmental Protection Agency.

The City of San Bernardino Ordinance No. MC-1221, approved in March 2006, establishes the management zone boundaries within the City of San Bernardino for water spreading and water extraction activities. The Consent Decree requires the City of San Bernardino to implement an ordinance to ensure that activities occurring in the management zone do not interfere or cause pass-through of contaminants from the Newmark and Muscoy Operable Units. The Interim Remedy requires the extraction of contaminated groundwater from the Bunker Hill Groundwater Basin and within the Newmark and Muscoy Operable Units, and treatment of the groundwater to meet all State and federal permits and requirements for drinking water. A permit by the SBMWD pursuant to the provisions outlined in the ordinance should first be obtained for any spreading (artificial recharge) or extracting (well pumping) within the Management Zones, as defined in the ordinance.

An ICSA has been executed to develop and adopt a successor agreement, titled Institutional Controls Groundwater Management Program (ICGMP), between the following parties:

(1) City of San Bernardino Municipal Water Department

(2) Valley District
(3) Western Municipal Water District
(4) City of Riverside
(5) West Valley Water District
(6) East Valley Water District
(7) City of Colton
(8) Riverside Highland Water Company

The parties listed above will not be subject to the provisions of City of San Bernardino Ordinance No. MC-1221 as long as each is a party to the ICSA and, subsequently, the ICGMP Agreement.

Settlement Agreement between City of San Bernardino and City of Riverside and Riverside Water Company

In November 1922, after a Supreme Court of the State of California decision, the City of San Bernardino (Plaintiff) and the City of Riverside and Riverside Water Company (Defendants) negotiated a settlement agreement to take, divert, and use water from the "San Bernardino Artesian Basin," Lytle Creek, Warm Creek, and Devil Canyon Creek. The agreement was approved by the San Bernardino County Superior Court in a stipulated judgment that constituted authorities and rights of the parties for taking, diverting, and using the water. The court also established a provision for daily record keeping of all the diversions and use of water by all said parties.

Agreement between City of Riverside, Valley District, and Western – March 2007 (LF2151).

This agreement establishes the Seven Oaks Dam Water Diversions Engineering and Operations Committee (EOC) to develop and implement procedures to:

i) Maintain the groundwater levels in the Index Wells at relatively constant levels, in spite of fluctuations due to hydrologic variation.

ii) Minimize such fluctuations (reduce highs and lows).

iii) Provide water "accounts" to Riverside to offset the loss of recharge to the SBBA and/or Riverside North due to Western/Valley District SAR water diversions.

(1) "Reserve Account" is initially established as 38 percent of the total volume of water diverted from the SAR by Valley District and Western pursuant to the SWRCB water right permit. To be recharged in the SBBA either directly or through an exchange.

(2) "Replacement water" varies from 0 to 6 percent of the flow at the E Street Bridge. Water to be recharged into the Riverside North basin.

iv) Develop recommendations to the Western Judgment Watermaster regarding the classification of diverted SAR water as either New Conservation or existing safe yield of the SBBA.

Within the agreement, the EOC is scheduled to meet no later than October 1 of each year. The agreement states:

> The EOC shall meet on a regular basis to effectively operate, on a real-time basis, a program to achieve the objectives listed above. EOC decisions will be implemented once approved by the EOC and will be provided to the BTAC for inclusion in the Annual San Bernardino Basin Area Management Plan. The tasks of the EOC could be covered at the BTAC meetings, realizing that most of the 2013 Regional Water Management Plan 12 members of the BTAC have no standing in this agreement and the decisions of the EOC are not subject to review by BTAC or any of the BTAC members.

Water levels at the index wells outside the Pressure Zone must be maintained at no lower than 10 feet, on average, during a repeat of the 39-year base period. Valley District will commence spreading to maintain these levels.

If the 12-month rolling averages of the Backyard Well ports D4, D5, and D6 are 50 feet bgs or greater, Valley District and Western will recharge water from the Reserve Account.

Cooperative Agreement to Protect Water Quality and Encourage the Conjunctive Uses of Imported Water in the Santa Ana River Basin– January 2008 (LF2181).

Requires the preparation of a triennial water quality report, limited to nitrogen and total dissolved solids (TDS), which analyzes whether the recharge of imported water had any adverse impact on compliance with Salinity Objectives established in the Water Quality Control Plan for the Santa Ana River Basin. The first report is due August 2009 and then every three years thereafter.

Requires any party that is serving as a lead agency for a project involving the recharge of imported water to analyze any adverse impacts on Salinity Objectives as part of the California Environmental Quality Act (CEQA) review process. Said analysis must be made with a groundwater quality model listed in the agreement.

San Bernardino Valley Municipal Water District/San Gorgonio Pass Water Agency Demonstration Project Water Exchange Agreement (the "Project")-November 2008 (LF 2205).

The Project consists of a short-term agreement to exchange water between San Bernardino Valley Municipal Water District (Valley) and San Gorgonio Pass Water Agency (Agency). The Project involves the collection of data and information relating to exchanges of water between Valley and Agency in order to determine the long-term feasibility of distribution of water to Valley and the Agency. The Project involves an initial delivery of up to 1,000 acre-feet of water from Agency to Valley on or before March 2009. Thereafter, no earlier than October 2009 and no later December 2011, Valley will deliver a like amount of water back to the Agency. The Project will not require the construction of any facilities for the initial delivery and return of the water exchanged pursuant to the Project. The Agency does not currently need the water that it intends to deliver to Valley and the water received by Valley will not be growth-inducing because it will only be used to improve reliability of supply to its existing water users within Valley. There is no possibility that the Project may have a significant effect on the environment.

San Bernardino Valley Municipal Water District and Crestline-Lake Arrowhead Water Agency Demonstration Project Water Exchange Agreement-November 2008 (LF 2206).

This Agreement authorizes Valley to acquire up to 1,000 acre-feet of State Water Project (SWP) water from Crestline-Lake Arrowhead Water Agency (Agency), and requires Agency to submit a written request to the California Department of Water Resources on or before December 1, 2008, to deliver up to 1,000 AF of Agency's share of SWP Table A water to Valley. In exchange for delivery of that water, Valley will deliver a like amount of water of equal or better quality to Agency within three years of the initial delivery of water to Valley.

Understanding Agreement Regarding the Contribution to Replenishment and Deliveries– September 2009 (LF2255).

This is an understanding agreement between West Valley Water District, the City of Rialto, the City of San Bernardino Municipal Water Department, and San Bernardino Valley Municipal Water District regarding the contribution to replenishment to be made in conjunction with deliveries through the Baseline Feeder of water from the Bunker Hill Basin by the City of San Bernardino Municipal Water Department.

Memorandum of Understanding and Agreement for Cost-Sharing of Feasibility Study for the Garden Bar Water And Power Project-December 2009 (LF 2252).

This Memorandum of Understanding (MOU) and Agreement is between the South Sutter Water District ("SSWD") and the Castaic Lake Water Agency, the Palmdale Water District, the City of Napa, and the San Bernardino Valley Municipal Water District.

The purpose of the MOU between these five entities (Parties) and RMC WATER AND ENVIRONMENT is to establish cost sharing obligations for the preparation of an Updated Reconnaissance Study for the project described as: Garden Bar Water and Power Project (herein after the "PROJECT") which would consist of a new dam and reservoir project located on the Bear River approximately five miles upstream of Camp Far West Reservoir. If approved and implemented, the Project would provide substantial water supply and hydroelectric power generation benefits, as well as other potential benefits, including flood control and recreation.

Joint Prosecution and Cost-Sharing Agreement Re Proposed Rule of the United States Fish & Wildlife Service to Designate Critical Habitat for the Santa Ana Sucker-June 2010 (Lf 2275).

The Parties have agreed to cooperate reasonably in efforts to analyze and comment upon the Proposed Rule by the United States Fish and Wildlife Service in an attempt to address any negative consequences that the ruling may have on the party's interests. These cooperative efforts include the utilization of various experts and consultants to assist with the review of and preparation of comments on the Proposed Rule, and the provision of consulting expert opinions relative to the necessity, wisdom, and efficacy of potential challenges to it.

The list of parties in this agreement includes:

1. San Bernardino Valley Municipal Water District
2. Western Municipal Water District of Riverside County
3. City of Riverside Public Utilities
4. City of San Bernardino Municipal Water Department
5. San Bernardino Valley Water Conservation District
6. Southern California Edison
7. East Valley Water District
8. City of Highland
9. City of Redlands
10. Yucaipa Valley Water District
11. San Bernardino County Flood Control District
12. Bear Valley Mutual Water Company/Crafton Water Company
13. Big Bear Municipal Water District

Other Possible Partner Agencies:

1. West Valley Water District
2. Raymond Basin Management Board/San Gabriel Valley Water Association
3. City of Colton
4. City of Rialto
5. Riverside County Flood Control District
6. Orange County Flood Control District

Joint Prosecution and Cost-Sharing Agreement Re Final Rule of the United States Fish & Wildlife Service to Designate Critical Habitat for the Santa Ana Sucker- April 2011 (LF 2304).

This cost sharing agreement define the Parties contribution to the sums listed in Exhibit B, which sets forth each Party's contribution towards the fees and costs collectively incurred in the Parties' cooperative efforts on the Final

Rule, plus the funds that may be needed to pursue a challenge to the Final Rule. The list of parties in this agreement includes:

1. San Bernardino Valley Municipal Water District
2. Western Municipal Water District of Riverside County
3. City of Riverside Public Utilities
4. City of San Bernardino Municipal Water Department
5. San Bernardino Valley Water Conservation District
6. East Valley Water District
7. City of Redlands
8. Yucaipa Valley Water District
9. Bear Valley Mutual Water Company/Crafton Water Company
10. Big Bear Municipal Water District
11. West Valley Water District
12. Riverside County Flood Control District

Agreement between Kern Delta Water District and the San Bernardino Valley Municipal Water District for a Water Management Program-October 2011 (LF 2327).

This agreement is in furtherance of development of a water management program that is being implemented by Kern Delta and Valley for the purpose of enhancing the water supply available to both entities. San Bernardino Valley Municipal Water District proposes to bank State Water Project water in banking facilities operated by the Kern Delta Water District for later withdrawal and use within Valley District. Under the program, the Valley District will bank up to 30,000 acre-feet of the water it would otherwise be allocated during the 2011-2012 water year pursuant to Table "A" of its State Water Project contract in existing water banking facilities operated by the Kern Delta. Diversions to the water banking facilities will be made through existing water conveyance facilities and will occur during the period between October 2011 and February 2012. Under the proposal, Kern Delta will, at Valley District's request, return up to 5,000 acre-feet per year to Valley District through existing conveyance facilities during or after the 2011-2012 water year.

Agreement between San Bernardino Valley Municipal Water District and Metropolitan Water District of Southern California for Emergency Services and Pipe Fabrication and Related Technical Services- November 2011 (LF 2335).

The services provided by Metropolitan to San Bernardino Valley MWD shall be emergency type services or routine type services covering the following sub-elements:

1. Preparation of services estimates
2. Engineering (including design, troubleshooting, and inspection services)
3. Project management and planning (including shop drawings detailing services)
4. Quality assurance and quality control, including destructive and non-destructive testing
5. Machining, fabrication, welding, and industrial coating and mortar-lining of various water treatment, conveyance and distribution parts, pipes, and equipment
6. Refurbishment of various water treatment, conveyance and distribution equipment
7. Site construction services
8. Diving services
9. Crane certification services
10. Transportation services

Agreement to Develop and Operate Enhanced Recharge Facilities between the San Bernardino Valley Water Conservation District (the "Conservation District"), the San Bernardino Valley Municipal Water District ("Valley District") and Western Municipal Water District of Riverside County ("Western")-October 2012 (LF 2382).

This agreement authorizes the lease of Conservation District facilities for the Purpose of Groundwater Recharge to Valley District and Western. The purpose of such agreement is to increase groundwater storage in the SBBA in order to meet current and future demands for water among the party's constituents. This agreement allow Valley District and Western to construct, operate, maintain, repair, reconstruct and rehabilitate diversion facilities, recharge basins, pumps and other ancillary facilities or equipment located within the Leased Property as Valley District and Western may reasonably deem necessary for the recharging of water on the Leased Property. This agreement has an initial term of 25 years, unless terminated earlier as provided in this agreement. This agreement may be extended by written agreement among all parties for up to five additional, consecutive five year terms ("Extension Terms"), on the same terms and conditions.

Agreement for the Cooperative Use of Unused Well Capacity, the Texas Grove Reservoir and the Central Feeder-April 2013 (LF 2392).

This is agreement is between the San Bernardino Valley Municipal Water District and the City of Redlands for the Cooperative Use of Unused Well Capacity, the Texas Grove Reservoir and the Central Feeder ("Agreement"). Under this agreement, Valley District will purchase 2.3 million gallons of capacity in the City's existing Texas Grove Reservoir which is connected to Valley District's Redlands Pump Station that delivers water to Valley Districts Central Feeder Pipeline. Valley District will have an annual option of purchasing up to 20,000 acre-feet of existing well capacity to the extent such capacity is not needed by the City in any given year. The purpose of the project is to postpone the need for Valley District to construct new water facilities in the area. The project involves the operation of existing facilities within existing limits established by applicable laws, regulations, agreements, and permits. This Agreement shall have an initial term of five years from its Effective Date and shall automatically renew for subsequent five-year terms thereafter unless terminated by the parties involved.

Agreement Regarding Additional Extractions of New Conservation Water from the San Bernardino Basin Area-July 2013 (LF 2402).

This Agreement is between San Bernardino Valley Municipal Water District and Western Municipal Water District of Riverside County. The primary purpose of this Agreement is to provide for additional extractions of water from the SBBA by Plaintiffs and users within Valley District without replenishment by Valley District in amounts equal to the amount of New Conservation determined by Watermaster to have occurred from 1998 through 2012 due to operation of the Dam.

Planning Memorandum of Understanding between the San Bernardino County Flood Control District and the San Bernardino Valley Municipal Water District-July 2013 (LF 2404).

This Memorandum of Understanding (MOU) approves a ten year Planning Agreement (Agreement No. 13-608) between the San Bernardino County Flood Control District and the San Bernardino Valley Municipal Water District for the purpose of working together in the planning and evaluation of San Bernardino County Flood Control District facilities for joint use by the San Bernardino County Flood Control District and the San Bernardino Valley Municipal Water District for both flood control and groundwater replenishment operations.

Coordinated Operations Agreement between the San Bernardino Municipal Water Department and San Bernardino Valley Municipal Water District -September 2013 (LF 2415).

This Agreement governs the Parties' coordinated operation and use of the San Bernardino Municipal Water Department Facilities and the San Bernardino Valley Municipal Water District Facilities as described in Exhibit A, respectively. This Agreement shall have an initial term of twenty-five (25) years from its Effective Date and shall automatically renew for subsequent ten-year terms thereafter unless terminated.

Amendment to Agreement to Form the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan Task Force-September 2013 (LF 2407).

This is an amendment to the 2002 Agreement to form The Upper Santa Ana River Wash Land Management and Habitat Conservation Plan Task Force ("Amendment") for the purposes of advancing environmental planning and permitting in connection with the Upper Santa Ana River Wash Land Management Plan ("Wash Plan"). This amendment is made effective on September 1st , 2013, by and between the following entities, CEMEX Construction Materials LP ("CEMEX"), Robertson's Ready Mix, LTD, ("Robertson's"), The City of Highland ("Highland"), East Valley Water District ("EWD"), The City of Redlands ("Redlands"), Redlands Municipal Utilities and Engineering Department ("RMUED"), County of San Bernardino ("San Bernardino County"), San Bernardino Flood Control District ("SBCFCD"), San Bernardino Valley Water Conservation District ("SBVWCD" or "Conservation District"), United States Bureau Of Land Management ("BLM"), And San Bernardino Valley Municipal Water District ("Valley District").

Execution Copy

AGREEMENT
RELATING TO THE DIVERSION OF WATER FROM THE SANTA ANA RIVER SYSTEM AMONG WESTERN MUNICIPAL WATER DISTRICT OF RIVERSIDE COUNTY, SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT AND CITY OF RIVERSIDE

(March 20, 2007)

SBVMWD LEGAL DOCUMENT 2151

AGREEMENT
RELATING TO THE DIVERSION OF WATER
FROM THE SANTA ANA RIVER SYSTEM
AMONG
WESTERN MUNICIPAL WATER DISTRICT OF RIVERSIDE COUNTY,
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT
AND
CITY OF RIVERSIDE

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AGREEMENT
RELATING TO THE DIVERSION OF WATER
FROM THE SANTA ANA RIVER SYSTEM
AMONG
WESTERN MUNICIPAL WATER DISTRICT OF RIVERSIDE COUNTY,
SAN BERNARDINO VALLEY MUNICPAL WATER DISTRICT
AND
CITY OF RIVERSIDE

1. **PARTIES:** This Agreement relating to the diversion of water from the Santa Ana River System ("Agreement") is entered into and effective this 20th day of March, 2007 by and among the City of Riverside ("Riverside"), San Bernardino Valley Municipal Water District ("Muni") and Western Municipal Water District of Riverside County ("Western"). Muni and Western are collectively referred to as "Muni/Western." Each party to this Agreement is referred to as a "Party" and the parties collectively are referred to as the "Parties."

2. **RECITALS:**

2.1 The Parties are interested in the efficient management of the water resources, both local and imported, available to them and desire to work cooperatively to ensure that the demands, both current and future, of all users within the Parties' respective service areas are satisfied by maximizing the yield of the local water supplies and utilizing the available imported water supplies as necessary.

2.2 The Parties were all parties to the litigation that resulted in the judgment in *Orange County Water District v. City of Chino et al.* (Orange County Superior Court No. 117628, April 17, 1969) (the "*Orange County* Judgment"). Under the terms of that judgment, each of the Parties has "full freedom to engage in any activity for water conservation or storage of storm flows above Prado Reservoir" as long as Western and the Inland Empire Utilities Agency deliver certain quantities of base flow to Orange County Water District.

2.3 The Parties are all parties to the judgment in *Western Municipal Water District et al. v. East San Bernardino County Water District et al.* (Riverside County Superior Court No. 78426, April 17, 1969) (the "*Western* Judgment"). Under the terms of that judgment,

Riverside is entitled to extract a total of 49,542 afy from the San Bernardino Basin Area ("SBBA") for export outside San Bernardino County. The *Western* Judgment also addresses Riverside's extractions in the Colton, Riverside North and Riverside South groundwater basins. Collectively, the SBBA, Colton, Riverside North and Riverside South groundwater basins are referred to as the "Groundwater Basins."

2.4 Riverside has developed groundwater resources from the Groundwater Basins and has invested significant resources to produce, treat, transport, and deliver such water. The *Western* Judgment also provides certain safeguards to ensure that all groundwater producers may, in fact, exercise the rights referenced in the immediately preceding Section, most notably a requirement that Muni and Western each replenish certain groundwater basins under certain conditions in order to maintain the safe yield of the Groundwater Basins.

2.5 The construction of the Seven Oaks Dam ("SOD") by the US Army Corps of Engineers provides the opportunity to increase the yield of the Groundwater Basins through the development of additional Santa Ana River ("SAR") water that was historically not utilized by the Parties. The *Western* Judgment defines "New Conservation" as "any increase in replenishment from natural precipitation which results from operation of works and facilities not now in existence" and contemplates that the Parties will develop additional water supplies from the implementation of water conservation efforts under the terms of the *Orange County* Judgment ("New Conservation"). The *Western* Judgment further contemplates that Western, Riverside and other so-called Plaintiff Parties under the *Western* Judgment shall have their adjusted extraction rights increased to include a proportionate share of any New Conservation, provided that each Plaintiff Party pays its proportionate share of the costs of such New Conservation.

2.6 Muni/Western have filed two water right applications with the State Water Resources Control Board that, when approved, are intended to allow the development of New Conservation from the diversion of the waters of the Santa Ana River that would

otherwise flow out of the area without being put to beneficial use. If granted in their entirety, these applications would permit the conservation of up to 200,000 afy of native (local) water from the Santa Ana River. Muni/Western have prepared an Environmental Impact Report (the "Muni/Western EIR") that analyzes the potential effects on the environment of the water rights applications and the facilities needed to place water diverted from the Santa Ana River to reasonable and beneficial use (the "Project"). Riverside provided comments to the draft version of the Muni/Western EIR.

2.7 The Parties agree that the Project, as identified in the EIR, has the potential to: a) increase water supply reliability by reducing dependence on imported water; b) develop and deliver a new, local, high quality, long-term water supply that is needed to meet a portion of the anticipated future demands in their service areas; c) expand operational flexibility by adding infrastructure and varying sources of water, thereby providing the Parties greater capability to meet future water demands; and d) reduce the threat of liquefaction induced damages caused by a combination of high groundwater and earthquake activity.

2.8 Further, the Parties recognize that Muni/Western's proposed diversion of water to satisfy the Project's objectives listed above may have adverse effects on Riverside's water resources in the Groundwater Basins.

2.9 Muni/Western desire to mitigate impacts that may be caused by the Project to Riverside's water resources while also allowing for the maximum diversion of water by Muni/Western from the SAR and avoiding conditions of high groundwater that create a risk of liquefaction in the Pressure Zone of the SBBA groundwater basin and other groundwater basins. This will be accomplished through the development and implementation of a cooperative program as a part of the Integrated Regional Groundwater Management Plan for the Upper Santa Ana River Watershed, which plan is currently being renamed to reference water management generally and will hereinafter be referred to as the Integrated Regional Water Management Plan for the Upper Santa Ana River Watershed ("IRWMP").

2.10 Riverside has submitted an application and a petition to the State Water Resources Control Board to change the point of discharge, place of use, and purpose of use for its treated wastewater effluent from the SAR. Riverside has prepared a Program EIR (PEIR) for a Recycled Water Program.

2.11 The Parties wish to memorialize their understandings by means of this Agreement.

3. **AGREEMENT:** The Parties agree as follows:

3.1 State Water Resources Control Board ("SWRCB") Process.

3.1.1 Riverside will support Muni/Western's applications before the SWRCB, the California Department of Fish and Game ("DFG"), the U.S. Fish and Wildlife Service ("USFWS"), the U.S. Army Corps of Engineers, the Santa Ana Regional Water Quality Control Board, the "Local Sponsors" (San Bernardino County Flood Control District, Riverside County Flood Control and Water Conservation District and Orange County Flood Control District), and the U.S. Forest Service ("USFS").

3.1.2 Muni/Western will support Riverside's application and petition before the SWRCB, DFG, USFWS, USFS and the Santa Ana Regional Water Quality Control Board.

3.1.3 Each Party shall cooperate with the other Parties to the extent consistent with its own interests in connection with securing the water rights sought by the other Parties through the SAR water right hearing(s). Except as agreed in writing by the Authorized Representatives, or as provided by any existing cost sharing arrangements between the Parties, each Party shall bear its own costs related to such cooperation.

3.2 California Environmental Quality Act (CEQA) Process.

3.2.1 Muni/Western will not challenge Riverside's PEIR for its recycled water project.

3.2.2 Riverside will not challenge the Muni/Western EIR for diversions from the Santa Ana River.

3.3 Seven Oaks Dam Water Diversions Engineering and Operations Committee. The Parties hereby establish the Seven Oaks Dam Water Diversions Engineering and Operations Committee ("EOC"), which committee shall initially be comprised of the Authorized Representatives and shall be responsible for implementing this Agreement and shall operate on a consensus basis in all matters. The EOC shall develop and implement procedures intended to (i) maintain groundwater levels at the wells specified in Exhibit A at relatively constant levels, in spite of fluctuations due to hydrologic variation, (ii) minimize such fluctuations (reduce the highs and lows in groundwater levels), (iii) provide replacement water to Riverside when water diversions from the SAR by Muni/Western reduce, or are deemed under this agreement to reduce, recharge into the SBBA and Riverside North Basin, as provided pursuant to Sections 3.8.4 and 3.9, and (iv) develop recommendations to the *Western* Judgment Watermaster regarding the classification of the diverted SAR water as either New Conservation or existing safe yield of the SBBA.

3.4 EOC Procedures. The Authorized Representatives shall meet no later than six (6) months subsequent to approval of Muni/Western SAR water right applications by SWRCB to develop the initial EOC procedures in accordance with the provisions of this Agreement. The Authorized Representatives shall initiate a review of the procedures referred to in Section 3.3 of this Agreement no later than October 1 of each year during the term of this Agreement and, as may be necessary, shall revise such procedures by the following January 31. The EOC may hold such additional meetings during each water year (October 1 to September 30) as may be necessary to update the procedures to reflect changing conditions.

3.5 Real-Time Implementation of Agreement Objectives. The EOC shall meet on a regular basis, as needed, to effectively operate, on a real-time basis, a program to achieve the objectives of Section 3.3.

3.6 Accumulated Basin Replenishment Credits. Unless otherwise agreed by the Authorized Representatives, Muni/Western shall not use basin replenishment credits

accumulated under the *Western* Judgment to meet its recharge obligations under this Agreement.

3.7 Remedies. In the event that the Parties disagree regarding the implementation of Sections 3.3 through 3.9 of this Agreement, the decision shall be made by a registered professional engineer acceptable to all Parties using, to the extent practicable, the procedures set forth in Section 10 below, provided that the fact of such disagreement shall not limit Muni/Western's ability to divert water from the SAR or to implement the terms of any arrangement for the banking or exchange of SAR water, nor limit any Parties' ability to concurrently use the dispute resolution process of Section 10 for such disagreement.

3.8 Thresholds of Groundwater Levels of Significance and Mitigation Measures for SBBA. The following thresholds of groundwater levels of significance and mitigation measures in the SBBA shall be monitored and maintained as provided by EOC procedures:

3.8.1 *Outside the Pressure Zone* – A reduction in groundwater levels outside the Pressure Zone is significant if the analysis in the Muni/Western EIR, using the integrated surface water and groundwater model developed by Muni/Western (the USGS/Geoscience/Secor model of the Bunker Hill Groundwater Basin) and annual field verifications, predicts that the Project would reduce static groundwater levels at one or more index wells listed in Exhibit A, on average, by more than 10.0 feet during a repetition of the 39-year base hydrology (1962-2000), as compared to static water levels in the absence of the Project. "Annual field verifications" shall mean a comparison of actual groundwater levels to computer model generated predictions. To avoid a significant effect on the groundwater levels at one or more index wells located outside the pressure zone, Muni/Western shall commence spreading water from its SAR water made available pursuant to a SWRCB permit or license or from the Reserve Account defined in Section 3.8.4 within one (1) calendar year and shall spread either such SAR water or Reserve Account water sufficient to maintain static groundwater levels at the affected index wells to

reduce this project impact to less-than-significant level by no later than the end of the following calendar year, unless otherwise agreed to by the Authorized Representatives.

3.8.2 *Within the Pressure Zone* – If the average of the 12-month rolling averages of the static groundwater level measurements for the USGS/MUNI Backyard Wells D4, D5, and D6 (SWNs 1S/4W-22D4,5,6 USGS Station Numbers 340439117173904,5,6) is 50 feet below ground surface (bgs) or greater, then Muni/Western shall spread water from its SAR water made available under a SWRCB permit or license or from the Reserve Account defined in Section 3.8.4, until such averages are less than 50 feet bgs. When required, Muni/Western shall commence spreading its SAR water made available under a SWRCB permit or license or from Reserve Account water within one (1) calendar year and shall complete such spreading no later than the end of the following calendar year, unless otherwise agreed to by the Authorized Representatives.

3.8.3 *Index Well Change* - It is the understanding of the Parties that the wells used to determine whether Muni/Western shall spread water may be changed by written agreement of the Authorized Representatives. It is further understood by the Parties that the IRWMP process may conclude that it would be beneficial for Muni/Western to spread, or not spread, water based on other factors in addition to the water levels in Index Wells identified in this Agreement and that the Authorized Representatives shall take such conclusions into consideration when determining if a well change is appropriate.

3.8.4 *Reserve Account* – The Reserve Account identified in Sections 3.8.1 and 3.8.2 shall be established as 38% of the total volume of water diverted by Muni/Western from the SAR pursuant to a SWRCB permit or license. Such SAR water diverted by Muni/Western and recharged in the SBBA, either directly or through an exchange, shall be subtracted from the Reserve Account balance. SAR water directly delivered may be similarly credited, if such credit is deemed appropriate by the EOC. Any credits established through the recharge of more than 38% of the water diverted by Muni/Western shall expire

from the Reserve Account after five years if not used. This method of calculating the Reserve Account water, 38% of total volume diverted by Muni/Western, will remain in effect for 12 months after the first diversion of SAR water is made by Muni/Western, unless the Parties mutually agree to an extension. During this time, the EOC defined in Section 3.3 will evaluate the available hydrology and recharge data for the SAR and SBBA to determine if a modification to the 38% recharge factor is appropriate.

3.8.5 *Water Quality* - The Muni/Western water diversions and recharge activities in the Groundwater Basins shall be consistent with the basin water quality objectives as adopted by the Santa Ana Regional Water Quality Control Board outlined in the most recent version of the Water Quality Control Plan, or any cooperative agreement among the Santa Ana Regional Water Quality Control Board and agencies recharging water in the Santa Ana River Watershed.

3.9 Potential Reduced Recharge and Mitigation Measures for Riverside North Basin. The Parties agree that, under certain circumstances, water diversions from the SAR could cause reduced recharge from surface water or groundwater, or both, into the Riverside North Basin.

3.9.1 *Replacement Water Volume Calculation* - To alleviate this impact, Muni/Western agree to provide replacement water to Riverside, in the Riverside North Basin using daily flow data from the USGS E Street Gage 11059300 and by visual inspection at the following bridges over the Santa Ana River: E Street Bridge and Mt. Vernon Bridge.

3.9.1.1 The daily amount of reduced recharge shall be calculated using the following table:

Is there visible flow in the SAR at E Street Bridge (using the USGS Gage > 0)?	**Is there "Bank to Bank" Flow in the SAR at Mt. Vernon Bridge?**	**Muni/Western Diversion Amount, cfs**	**Reduced Recharge Amount, cfs**
No	No	Less than 37 cfs	None

No	No	Greater than 37 cfs	6% of Muni/Western diversion less 37 cfs
Yes	No	Greater than zero	6% of total Muni/Western diversion
Yes	Yes	Greater than zero	None

3.9.1.2 The Muni/Western replacement obligation (total amount of reduced recharge) shall be equal to the summation of all of the daily calculations of reduced recharge for the diversion season.

3.9.1.3 A new calculation method for the Muni/Western recharge obligation in the Riverside North Basin may be developed and used in the future by agreement of the Authorized Representatives.

3.9.1.4 The Muni/Western replacement obligation shall be recorded in a "Riverside North Basin Recharge Account." Said account shall be administered by the Authorized Representatives in accord with the terms of this Agreement.

3.9.1.5 The Authorized Representatives may reduce the Muni/Western replacement obligation based on high groundwater or other special conditions within the Riverside North Basin.

3.9.1.6 The calculation of reduced recharge to the Riverside North Basin shall be made by Muni/Western at the end of the "diversion season", (September 30th) of each year.

3.9.2 *Replacement Water Delivery Timeline* - The Muni/Western replacement obligation shall be delivered within five years of the Muni/Western diversions which incurred the obligation. However, Muni/Western will use reasonable efforts to satisfy the Muni/Western replacement obligation within one (1) year of incurring the obligation.

3.9.3 *Recharge Locations* - Muni/Western will determine the most cost effective means of meeting their replacement obligation under this Agreement and will consult with groundwater producers in the Riverside North Basin and look for opportunities

to cooperate with others to develop multiple-use recharge facilities. Any Muni/Western recharge obligation under this Agreement is anticipated to be satisfied using one or both of the alternatives in Section 3.9.3.1 and 3.9.3.2. However, the choice of such alternative is contingent upon the parties complying with all environmental laws arising out of or in connection with such recharge. The term "environmental laws" shall include, without limitation, the California Environmental Quality Act and all other applicable state and federal environmental laws. The parties also acknowledge that other alternatives may be identified and considered, and that by entering into the Agreement no selection has been made of any alternative:

3.9.3.1 In-stream recharge in the SAR bed between Riverside's Meeks #1 Well and Flume #6 Well at no cost to Riverside.

3.9.3.2 Off-stream recharge in available properties on either side of the SAR in between Riverside's Meeks #1 Well and Flume #6 Well. The Parties may jointly pursue the development of the diversion and recharge facilities on an agreed upon cost allocation based on benefits from the project. Unless otherwise agreed by the Parties, Riverside's portion of the funding will include any land they own which is used for the project. Riverside shall retain ownership of the land and be given ownership of any project improvements on the land. Riverside will also operate and maintain the project. Any storm water captured by any joint project shall be credited toward the Muni/Western recharge obligation under the Riverside North Basin Recharge Account. Riverside has no obligation, but will make reasonable efforts, to develop and/or fund such recharge facilities. Muni/Western agree to fully cooperate with any application to or before the SWRCB made by Riverside, Muni and/or Western for diversion of water to such recharge facilities.

3.9.4 *In Lieu Delivery* - If Muni/Western cannot deliver the total volume of replacement water required per Section 3.9.1 due to water supply shortages or other circumstances, Muni/Western shall satisfy and discharge that obligation by means of the

direct delivery of a quantity of water to Riverside equal to and in lieu of recharging additional water in the Riverside North Basin. Said in lieu delivery shall not exceed 71.51% of the Muni/Western replacement obligation for any given year and shall be delivered by one, or more, of the following options. Such option shall be exercised at the sole discretion of Riverside. Muni/Western shall make such in lieu deliveries to Riverside in a manner that is acceptable to all Parties, which may include the following:

3.9.4.1 A recommendation by Muni/Western to the *Western* Watermaster that Riverside be allowed to increase its extractions from the Bunker Hill Basin to an amount greater than Riverside's export rights under the *Western* Judgment for the subsequent water year, provided that such additional extractions do not create an additional replenishment obligation, as defined in the *Western* Judgment, on the part of Muni. This option shall only satisfy and discharge Muni/Western's replacement water obligation if the *Western* Watermaster and, if appropriate, the Superior Court of Riverside County, determine that such additional extractions are permitted under the terms of the *Western* Judgment.

3.9.4.2 The delivery of treated, potable water to Riverside at the Metropolitan Water District's ("MWD") Henry J. Mills Water Treatment Plant with Riverside paying Muni/Western an amount equal to the sum of: (i) the MWD Treated Water Surcharge, as set forth in MWD's then-current rate schedules, and (ii) Riverside's avoided pumping costs. The avoided pumping costs will be equal to Riverside's average cost to produce water from the Riverside North Basin wells identified on Exhibit B for the previous twenty-four (24) month period.

3.9.4.3 The delivery of water by Muni/Western to the Rice-Thorne pipeline from the Baseline Feeder South Pipeline at no cost to Riverside.

3.9.4.4 The remaining 28.49 % must be recharged in Riverside North Basin by Muni/Western as soon as practicable.

3.9.4.5 If Muni/Western delivers in lieu water to Riverside as provided for in this Section 3.9.4 during a given year, Riverside's maximum entitlement to pump from the Riverside North Basin during such year shall be reduced by an amount equal to the amount actually pumped in excess of Riverside's Bunker Hill Basin export rights under the *Western* Judgment or otherwise delivered to Riverside.

3.10 *CEQA Compliance.* The Parties agree that they intend to implement the provisions of Sections 3.3 to 3.10 of this Agreement through either: (i) the use of existing water rights and water extraction, conveyance, storage and distribution facilities, within the existing physical, legal and institutional limits pertaining to such rights and facilities; or (ii) the use of the water rights and physical facilities that comprise the Project, which are described in the Muni/Western EIR, within the limits identified in the Muni/Western EIR. If the Parties determine that additional water rights, institutional arrangements, banking or exchange agreements, or physical facilities are necessary to implement this Agreement, the Parties will undertake such subsequent environmental review and analysis as may be required for such discretionary actions by the terms of CEQA.

4. **BANKING AND EXCHANGES:**

4.1 The Parties understand and acknowledge that they intend to bank and/or exchange substantial quantities of SAR water for water imported from the State Water Project, or other sources of imported or native water. Such banking and/or exchanges shall be conducted pursuant to a comprehensive program for water banking and/or exchanges in the San Bernardino Valley and elsewhere in Southern California that includes, but is not limited to:

4.1.1 The groundwater spreading plan described in the July 21, 2004 Settlement Agreement Relating to the Diversion of Water from the Santa Ana River System ("Seven Oaks Accord");

4.1.2 The Projects described in the Muni/Western EIR; and

4.1.3 Any exchange or banking of water that may occur pursuant to the Coordinated Operating Agreement Between The Metropolitan Water District of Southern California and San Bernardino Valley Municipal Water District, dated July 10, 2000, as amended, as attached hereto as Exhibit C (the "Coordinated Operating Agreement") and incorporated herein by this reference, including but not limited to projects undertaken pursuant to the agreement referred to as "Attachment 6" in the Coordinated Operating Agreement, incorporated herein by this reference.

4.2 Riverside agrees that it will not oppose any such banking or exchange project(s); provided, that (i) such project is implemented in a manner not inconsistent with the terms of this Agreement; (ii) such project shall not result in an unmitigated adverse impact on Riverside's sources of groundwater supply in the Groundwater Basins or Riverside's costs related to the extraction of such groundwater; and (iii) in the implementation of the Coordinated Operating Agreement, Muni shall not deliver Riverside's portion of any New Conservation, as such term is defined in the *Western* Judgment, to Western without the prior written consent of Riverside's Authorized Representative. Riverside agrees that any water delivered to Riverside, directly or in lieu, by means of such banking or exchanges projects shall be used in accordance with the SWRCB water rights permit or license obtained by Muni/Western.

5. **RIVERSIDE'S RECYCLED MUNICIPAL WASTEWATER:** Nothing in this Agreement shall be construed to regulate Riverside's use of its recycled municipal wastewater.

6. ***WESTERN* JUDGMENT PRODUCTION LIMITS:** Nothing in this Agreement should be construed to increase or diminish the groundwater production limits contained in the *Western* Judgment.

7. **WATERMASTER ACCOUNTING:** The Parties agree to use their best efforts to implement an accounting methodology under the *Western* Judgment, including any

amendments thereto, that will allow the Plaintiffs therein to utilize their full entitlement in the SBBA. Specifically, to the extent that the extractions by any Plaintiff to the *Western* Judgment are less than the limits set forth therein, such Plaintiff party shall be allowed to use such unused extractions as a credit in following years, meaning that any extractions in excess of the limits imposed by the *Western* Judgment, in future years, may be offset by such credits and the Plaintiff party shall not be deemed to be in violation of the extraction limits for the *Western* Judgment.

8. **RELATIONSHIP TO OTHER AGREEMENTS AND JUDGMENTS:** There are a number of existing judgments and agreements that impose conditions on the Parties that may have an effect on the implementation of this Agreement. The EOC procedures outlined in this Agreement shall be developed and implemented in a manner consistent with each Party's rights and obligations under existing judgments and agreements and nothing in this Agreement is intended to modify the rights or obligations of the Parties under the terms of such judgments or agreements.

9. **LIST OF EXHIBITS:** This Agreement includes and incorporates by reference the following exhibits:

9.1 Exhibit A: List and Figure of Index Wells

9.2 Exhibit B: List of Riverside North Basin Wells

9.3 Exhibit C: Coordinated Operating Agreement for Conveyance Facilities and State Water Project Between Metropolitan Water District of Southern California And San Bernardino Valley Municipal Water District, including Attachments 1-6.

9.4 Exhibit D: Sections 12 and 13 of ICSA Settlement

10. **REMEDIES.** In the event that one Party believes that another Party, for reasons other than the lack of funding or other resources, has failed to comply with its obligations under this Agreement, or to dispute a matter referred to or a decision rendered under Section 3.7 hereto, the Parties shall use the dispute resolution provisions set forth in Sections 12 and 13 of the Agreement to Develop and Adopt an Institutional Controls Groundwater Management

Program, dated January 1, 2005 (the "ICSA Settlement"), which Sections are set forth as Exhibit D and incorporated herein by reference. The Parties agree, however, that any challenge to a decision of an arbitrator as described in Section 13 of the ICSA Settlement shall be brought in the Superior Court of Riverside County, not in the United States Court for the Central District of California. The Parties also agree that the arbitrator need not have experience in groundwater contamination or environmental clean-up, as described in Section 12 of the ICSA Settlement.

11. **AUTHORIZED REPRESENTATIVES:** Each Party shall designate by written notice to the other Parties a representative who is authorized to act on its behalf in the implementation of this Agreement and with respect to those matters contained herein which are the functions and responsibilities of such Authorized Representative. Each Party may at any time change the designation of their Authorized Representative by written notice to the other Party. Such Authorized Representative shall have the authority to act for their respective Parties in all matters relating to performance of this Agreement, including any amendment of the Exhibits hereto. However, except as otherwise provided, they shall not have the authority to amend or modify any provision of this Agreement.

12. **GENERAL PROVISIONS:**

12.1 Effective Date and Term. This Agreement shall be effective on the date first written above and shall then continue until terminated by mutual consent of all Parties hereto. Sections 3.3 through 3.10 of this Agreement shall not take effect until the SWRCB issues a permit for the Western/Muni Applications.

12.2 Choice of Law. This Agreement and any dispute hereunder shall be governed by and construed in accordance with the laws, except for laws pertaining to the choice of laws, of the State of California.

12.3 No Waiver. No failure or delay in exercising any right, power or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise thereof

preclude any other or further exercise thereof or the exercise of any right, power or privilege hereunder.

12.4 Entire Agreement. This Agreement shall not be construed to amend or modify any other agreement between any of the Parties or between any Party and a non-Party, which shall remain in all respects in full force and effect. This Agreement represents the entire agreement of the Parties in connection with the subject matter hereof and may be modified only in writing agreed to by all Parties. Further, this Agreement may be executed in counterparts.

12.5 Construction and Interpretation. This Agreement has been arrived at through negotiations and each Party has had a full and fair opportunity to revise the terms of this Agreement. As a result, the normal rule of construction that any ambiguities are to be resolved against the drafting Party shall not apply in the construction or interpretation of this Agreement.

12.6 Partial Invalidity. If, after the date of execution of this Agreement, any provision of this Agreement is held to be illegal, invalid, or unenforceable under present or future laws effective during the term of this Agreement, such provision shall be fully severable. However, in lieu thereof, there shall be added a provision as similar in terms to such illegal, invalid or unenforceable provision as may be possible and be legal, valid and enforceable.

12.7 Necessary Actions. Each Party agrees to execute and deliver additional documents and instruments and to take any additional actions as may be reasonably required to carry out the purposes of this Agreement.

12.8 Third Party Beneficiaries. This Agreement shall not create any right or interest in any non-Party or in any member of the public as a third party beneficiary.

12.9 Authority of Signatories. The signatories hereto represent and warrant that they have been duly authorized to enter into this Agreement by the Party on whose behalf it is indicated that the person is signing and, by such signature, to bind such Party to the

Agreement.

12.10 Jurisdiction and Venue. Any action at law or in equity brought by any of the Parties hereto for the purpose of enforcing a right or rights provided for by this Agreement shall be tried in a court of competent jurisdiction in the County of Riverside, State of California, and the Parties hereby waive all provisions of law providing for a change of venue in such proceedings to any other county.

12.11 Notices. Any notices required to be given, hereunder shall be in writing and shall be personally served or given by mail. Any notice given by mail shall be deemed given when deposited in the United States Mail, certified and postage prepaid, addressed to each Party to be served as follows:

To Riverside
Public Utilities Department
City of Riverside
Attn: Assistant Director – Resources
3901 Orange Street
Riverside, CA 92522

To Muni:
San Bernardino Valley Municipal Water District
1350 S. "E" Street (92408-2725)
P. O. Box 5906 (92412-5906)
San Bernardino, CA
Attn: General Manager

To Western:
Western Municipal Water District of Riverside County
450 Alessandro Boulevard
Riverside, CA 92508
Attn: General Manager

CITY OF RIVERSIDE

By: _____ Dated: 4/2, 2007.
Bradley J. Hudson
City Manager

Attest: _____
City Clerk

Approved as to form only:

By: _____
Susan Wilson
Deputy City Attorney

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By: _____ Dated: 3/16, 2007.
Randy Van Gelder
General Manager

Approved as to form only:

By: _____
David R.E. Aladjem
Downey Brand LLP

WESTERN MUNICIPAL WATER DISTRICT OF RIVERSIDE COUNTY

By: _____ Dated: 3/14, 2007.
John V. Rossi
General Manager

Approved as to form only:

By: _____
David R.E. Aladjem
Downey Brand LLP

AGREEMENT
RELATING TO THE DIVERSION OF WATER
FROM THE SANTA ANA RIVER SYSTEM
AMONG
WESTERN MUNICIPAL WATER DISTRICT OF RIVERSIDE COUNTY
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT
AND
CITY OF RIVERSIDE

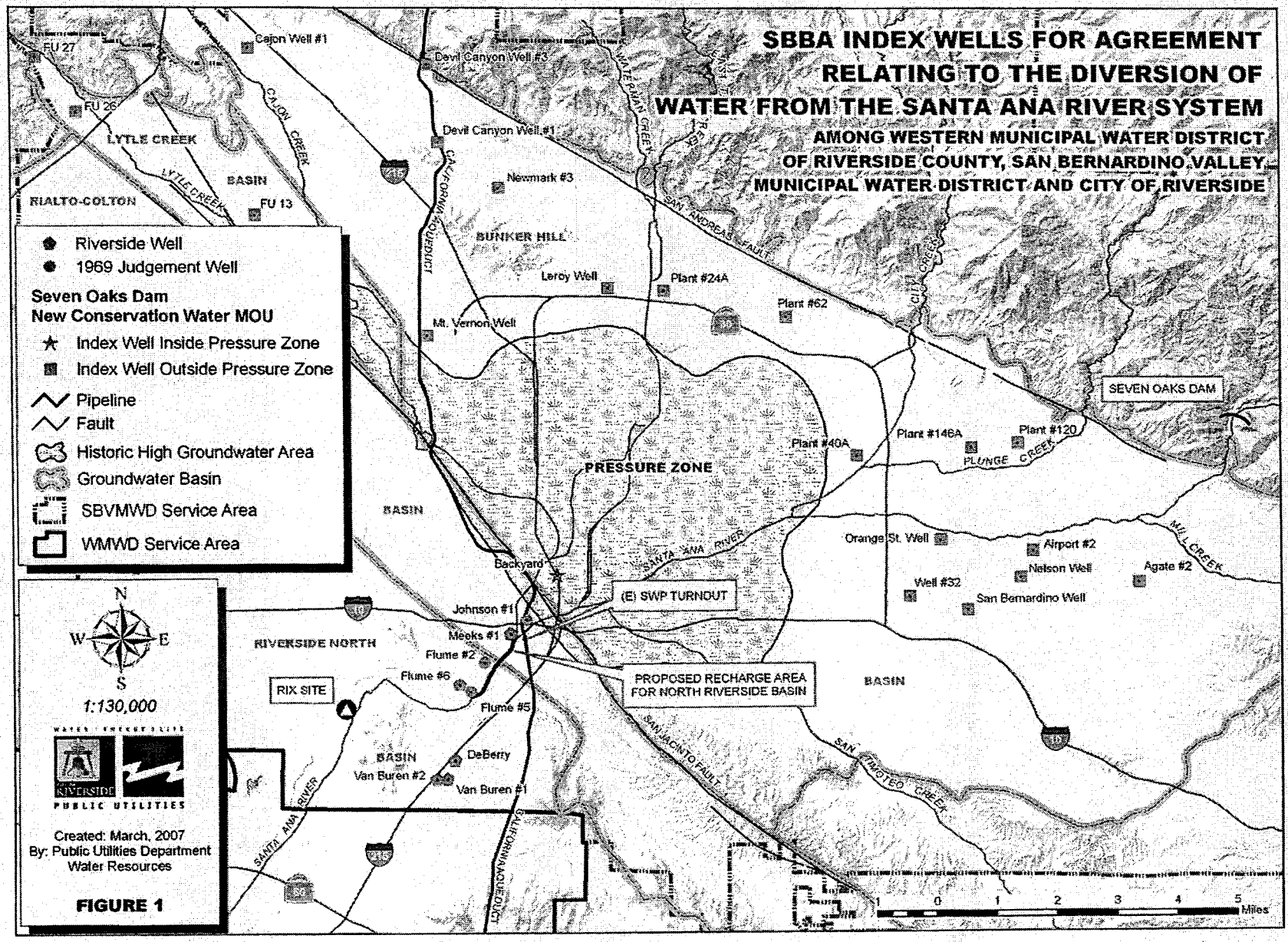
Exhibit A

SBBA INDEX WELLS

OUTSIDE PRESSURE ZONE:
Cajon Well #1
FU #13
Devil Canyon Wells #1 & #3
Newmark #3
Mt. Vernon Well
Well #7
Leroy Well
Plant #24A
Plant #62
Plant #40A
Plant #146A
Plant #120
Orange St. Well
Well #32
Airport #2
Nelson Well
San Bernardino Well
Agate #2

INSIDE PRESSURE ZONE:
USGS/Muni Backyard Well

See attached Figure 1 for locations.


SBBA INDEX WELLS FOR AGREEMENT
RELATING TO THE DIVERSION OF
WATER FROM THE SANTA ANA RIVER SYSTEM
AMONG WESTERN MUNICIPAL WATER DISTRICT
OF RIVERSIDE COUNTY, SAN BERNARDINO VALLEY
MUNICIPAL WATER DISTRICT AND CITY OF RIVERSIDE
Riverside Well
1969 Judgement Well
Seven Oaks Dam
New Conservation Water MOU
Index Well Inside Pressure Zone
Index Well Outside Pressure Zone
Pipeline
Fault
Historic High Groundwater Area
Groundwater Basin
SBVMWD Service Area
WMWD Service Area
N
W
E
S
1:130,000
PUBLIC UTILITIES
Created: March, 2007
By: Public Utilities Department
Water Resources
FIGURE 1
Cajon Well #1
Devil Canyon Well #3
Devil Canyon Well #1
Newmark #3
Leroy Well
Plant #24A
Plant #62
Mt. Vernon Well
Plant #40A
Plant #146A
Plant #120
SEVEN OAKS DAM
Backyard
(E) SWP TURNOUT
Johnson #1
Meeks #1
Flume #2
Flume #6
Flume #5
RIX SITE
PROPOSED RECHARGE AREA
FOR NORTH RIVERSIDE BASIN
DeBerry
Van Buren #2
Van Buren #1
Orange St. Well
Airport #2
Nelson Well
Agate #2
Well #32
San Bernardino Well
FU 27
FU 26
FU 13
LYTLE CREEK
BASIN
RIALTO-COLTON
BUNKER HILL
PRESSURE ZONE
RIVERSIDE NORTH
SANTA ANA RIVER
CAJON CREEK
LYTLE CREEK
WATERMAN CANYON
CITY CREEK
PLUNGE CREEK
MILL CREEK
SAN TIMOTEO CREEK
SAN ANDREAS FAULT
SAN JACINTO FAULT
CALIFORNIA STREET
0 1 2 3 4 5 Miles

AGREEMENT
RELATING TO THE DIVERSION OF WATER
FROM THE SANTA ANA RIVER SYSTEM
AMONG
WESTERN MUNICIPAL WATER DISTRICT OF RIVERSIDE COUNTY
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT
AND
CITY OF RIVERSIDE

Exhibit B

RIVERSIDE NORTH BASIN WELLS

Flume Well 2

Flume Well 3

Flume Well 4

Flume Well 5

Flume Well 6

Van Buren Well 1

Van Buren Well 2

AGREEMENT
RELATING TO THE DIVERSION OF WATER
FROM THE SANTA ANA RIVER SYSTEM
AMONG
WESTERN MUNICIPAL WATER DISTRICT OF RIVERSIDE COUNTY
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT
AND
CITY OF RIVERSIDE

Exhibit C

Coordinated Operating Agreement
Between
Metropolitan Water District of Southern California
And
San Bernardino Valley Municipal Water District

CONSERVED WATER AGREEMENT
BETWEEN
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT
AND
WESTERN MUNICIPAL WATER DISTRICT OF RIVERSIDE COUNTY

Agreement made this 23rd day of MARCH, 2005, between San Bernardino Valley Municipal Water District ("Valley District") and Western Municipal Water District of Riverside County ("Western").

RECITALS

1. Valley District and Western have jointly filed two water rights applications with the State Water Resources Control Board. If granted in their entirety, these applications would permit the two districts to conserve up to 200,000 afy of native (local) water from the Santa Ana River ("Conserved Water").

2. Conserved water under this joint application is shared 72.05% to Valley District and 27.95% to Western for use within its boundaries.

3. The parties hereto anticipate that in wet years some portion of the conserved water may be delivered to The Metropolitan Water District of Southern California ("Metropolitan") in exchange for the subsequent delivery by Metropolitan of an equal quantity of water, less reasonable Metropolitan system losses, ("Exchange Water"), for use within the respective service areas of the parties. To that end, Valley District has entered into an agreement with Metropolitan entitled "Attachment 6" to the Coordinated Operating Agreement between Metropolitan and Valley District, dated July 10, 2000.

4. Such exchanges pursuant to the terms of Attachment 6 are anticipated to improve the water supply reliability and quality of water delivered by Metropolitan to its member agencies, and the use of local water for local needs within the respective service areas of the parties hereto.

TERMS

In consideration of the foregoing facts, it is hereby agreed as follows:

5. Western accepts the provisions of Attachment 6, subject to the terms of this Agreement.

6. In the implementation of Attachment 6, Valley District shall not deliver Western's share of Conserved Water to Metropolitan without Western's prior consent.

7. In the implementation of Attachment 6, Valley District's approval of the delivery by Metropolitan of Western's share of Exchange Water, and the time, place and manner of such delivery (including any in-lieu deliveries) shall be subject to Western's prior consent.

8. Western is an intended beneficiary of Attachment 6 as to its share of Conserved and Exchange Water, and shall be considered as a third party beneficiary of Attachment 6, and entitled to enforce all legal rights arising from such status.

ORIGINAL

9. The term of this Agreement shall be coincident with the term of Attachment 6, or any extension thereof, and is effective as of the date inserted above.

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By _____
Robert L. Reiter
General Manager and Chief Engineer

WESTERN MUNICIPAL WATER DISTRICT OF RIVERSIDE COUNTY

By _____
John V. Rossi
General Manager

ATTACHMENT 6

COORDINATED EXCHANGE AGREEMENT BETWEEN THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA AND SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

Objective

The objective of this Attachment 6 to the Coordinated Operating Agreement for Conveyance Facilities and State Water Project Supplies between The Metropolitan Water District of Southern California ("**Metropolitan**") and San Bernardino Valley Municipal Water District ("**Valley District**") dated July 10, 2000 (the "**Coordinated Operating Agreement**") is to provide an institutional arrangement for the residents of Southern California to obtain the maximum benefits from water conserved as a result of the construction and operation of Seven Oaks Dam and Reservoir. Valley District and Metropolitan are each sometimes referred to below as a "**Party**" and are sometimes collectively referred to below as the "**Parties.**"

Recitals

A. Valley District, in conjunction with Western Municipal Water District of Riverside County ("**Western**"), has filed two water right applications with the State Water Resources Control Board. If granted in their entirety, these applications would permit Valley District and Western to conserve up to 200,000 afy of native (local) water from the Santa Ana River.

B. Valley District anticipates that, in wet years, it will deliver some portion of the water that is conserved from the Santa Ana River pursuant to the water right applications to Metropolitan in exchange for the subsequent delivery to Valley District of an equal quantity of water by Metropolitan, less reasonable Metropolitan system losses.

C. Such an exchange of conserved native Santa Ana River water for water from the State Water Project or other sources available to Metropolitan is anticipated to improve water supply reliability and the quality of water delivered to Metropolitan and its member agencies and is

anticipated to improve water supply reliability and the use of local water for local needs within Valley District's service area.

D. Valley District intends to work cooperatively with the Watermaster Committee to determine the quantities of Conserved Water and Exchange Water, as defined below, delivered by or to Valley District pursuant to this Attachment 6. Valley District intends that the Watermaster Committee confirm, on an annual basis, that such quantities of Conserved Water and Exchange Water constitute "new conservation" as that term is defined in the Judgment pursuant to County of Riverside Superior Court Case 78426.

Terms

a. *Term.*

This Attachment 6 shall have a term identical to the Coordinated Operating Agreement.

2. *Exchange of Water.* Pursuant to paragraphs 1 and 3 of the Coordinated Operating Agreement and paragraph 10.2 of Attachment 2 to the Coordinated Operating Agreement, Metropolitan and Valley District agree to take the following actions:

a. If the water conserved from the Santa Ana River pursuant to the foregoing water right applications ("**Conserved Water**") exceeds the immediate demand for such water within Valley District's service area for direct delivery or groundwater recharge and there is capacity available in Metropolitan's facilities to accept all or a portion of the Conserved Water directly, on an in-lieu basis, or via an exchange, for delivery to Metropolitan, Valley District may request that Metropolitan accept into Metropolitan's facilities all or a portion of the Conserved Water on mutually agreeable terms, conditions and locations. Absent other agreement of the Parties, Conserved Water will be delivered to Metropolitan at the Inland Feeder. Valley District shall consult with Metropolitan regarding the delivery of the Conserved Water on a real-time basis and, each October 1 shall prepare an operations plan for the delivery of Conserved Water, which plan shall be updated each April 1 to reflect precipitation, runoff and other relevant factors. The operations plan shall

be subject to approval by Metropolitan, however, Metropolitan agrees to exercise its best efforts to accept the Conserved Water into its facilities to the extent that Metropolitan, in its sole discretion, determines that (1) sufficient capacity is available within Metropolitan's facilities to accept the Conserved Water and (2) that the Conserved Water is of adequate quality for Metropolitan's purposes. The Conserved Water will be delivered to Metropolitan for beneficial uses within Metropolitan's service area in quantities that will not exceed 200,000 afy.

b. Metropolitan shall, after consultation with Valley District, deliver to Valley a substitute quantity of water obtained by Metropolitan from the State Water Project ("**Exchange Water**") equal in quantity to the Conserved Water delivered to Metropolitan pursuant to paragraph 2(a) above, less reasonable Metropolitan system losses as determined by Metropolitan. Exchange Water shall be delivered to Valley District as promptly as practicable at times, locations and in manners mutually agreeable to Valley District and Metropolitan. Absent other agreement of the Parties, Exchange Water will be delivered by Metropolitan to Valley District at the Devil Canyon Afterbay. Exchange Water will be delivered to Valley District for beneficial uses in quantities that will not exceed 200,000 afy.

c. The Parties agree that they may benefit from this Attachment 6 by virtue of increased water supply reliability and improved water quality. Accordingly, neither Party shall pay the other for services provided under this Attachment 6.

3. *Disputes*. The Parties recognize that there may be disputes regarding the obligations of the Parties or the interpretation of this Attachment 6. The Parties agree that they will attempt to resolve disputes in an amicable fashion without the need for litigation.

4. *General Provisions.*

a. *Authority*. Each signatory of this Attachment 6 represents that s/he is authorized to execute this Attachment 6 on behalf of the Party for which s/he signs. Each

Party represents that it has legal authority to enter into this Attachment 6 and to perform all obligations under this Attachment 6.

b. *Amendment.* This Attachment 6 may be amended or modified only by a written instrument executed by each of the Parties to this Attachment 6.

c. *Partial Invalidity.* If, after the date of execution of this Attachment 6, any provision of this Attachment 6 is held to be illegal, invalid, or unenforceable under present or future laws effective during the term of this Attachment 6, such provision shall be fully severable. However, in lieu thereof, there shall be added a provision as similar in terms to such illegal, invalid or unenforceable provision as may be possible and be legal, valid and enforceable.

d. *Incorporation by Reference.* The provisions of paragraph 15 of Attachment 2 are hereby incorporated herein by reference as if set forth in full and shall apply to the Parties' performance of the terms of this Attachment 6.

Dated: December 21 2004.

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Ronald R. Gastelum
Chief Executive Officer

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

Robert L. Reiter
General Manager and Chief Engineer

ATTACHMENT 5 TO THE
COORDINATED OPERATING AGREEMENT

AGREEMENT BETWEEN
THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA
AND
SAN BERNARDINO VALLEY MUNCIPAL WATER DISTRICT
REGARDING FOOTHILL PUMP STATION

THIS CONTRACT, hereinafter referred to as "Agreement" is entered into as of this 21st day of December, 2004, between The Metropolitan Water District of Southern California, a public agency of the State of California (hereinafter referred to as "Metropolitan") and the San Bernardino Valley Municipal Water District, a public agency of the State of California (hereinafter referred to as "Valley District").

EXPLANATORY RECITALS

A. Metropolitan is a public agency of the State of California engaged in transporting, storing, treating and distributing water at wholesale in portions of the counties of Los Angeles, San Bernardino, Orange, Riverside, San Diego and Ventura, within the State of California.

B. Valley District is a public agency of the State of California engaged in developing, transporting, storing, treating and wholesale delivery of water in portions of the counties of San Bernardino and Riverside within the State of California.

C. The parties have previously entered into a Coordinated Operating Agreement and several subsequent attachments thereto, Attachments 1 through 4.

D. Valley District, as a State Water Project (hereinafter "SWP") contractor takes delivery of SWP water from the Devil Canyon First Afterbay by way of its Foothill Pipeline, which has a capacity of 290 cubic feet per second (hereinafter "cfs"), and extends east from the Devil Canyon Afterbay approximately 17 miles. The Foothill Pipeline connects to other

facilities of the East Branch Extension of the State Water Project, which delivers water to the San Gorgonio Pass area of Riverside County.

E. Metropolitan, also an SWP contractor, is constructing a water conveyance system known as the Inland Feeder, which will take water from the Devil Canyon Second afterbay and deliver it into Metropolitan's service territory. The 144-inch inside diameter Inland Feeder has been fully constructed to a point just north of the Santa Ana River, where it is in close proximity to Valley District's Foothill Pipeline. The remainder of Metropolitan's Inland Feeder, to the north and west is still under construction.

F. In accordance with previous understandings reached between the parties, Metropolitan constructed a 78-inch inside diameter intertie pipeline to connect the Foothill Pipeline with the Inland Feeder, known as the Cone Camp Intertie.

G. Since December 2003, Metropolitan has taken water from the Foothill Pipeline through the Cone Camp Intertie and delivered it into the Inland Feeder at flows up to 240 cfs, as capacity was available. Valley District was compensated for the water delivered to Metropolitan from Valley District's Table A amounts at the rate provided for in Attachment 2 to the Coordinated Operating Agreement.

H. Currently, when more than 80 cfs is diverted from the Foothill Pipeline to the Cone Camp Intertie, there is insufficient head in the Foothill Pipeline to meet the minimum hydraulic gradient requirements at Greenspot Pump Station (easterly of the Foothill Pump Station) and therefore, insufficient head to meet Valley District demands downstream of the Greenspot Pump Station.

I. Pursuant to previous understandings reached between the parties, the Foothill Pump Station has been designed and constructed adjacent to the Foothill Pipeline and Cone

Camp Intertie to increase the hydraulic grade line at the Greenspot Pump Station to enable Valley District to meet demands downstream in the Foothill Pipeline when water is being delivered into the Cone Camp Intertie. The Foothill Pump Station includes eight 300-horsepower horizontal pumps with adjustable (variable) frequency drives. Use of the Foothill Pump Station is only needed to meet downstream demands if and when Metropolitan is taking water through the Cone Camp Intertie.

J. The purpose of this Attachment 5 is to provide for the parties' respective responsibilities regarding: (1) the right-of-way for the Foothill Pump Station, (2) the obligation to deliver water to the Cone Camp Intertie, and (3) payment provisions for Foothill Pump Station power costs, and water delivered to Metropolitan through the Cone Camp Intertie.

TERMS OF AGREEMENT

1. Foothill Pump Station Right-of-Way. For good and valuable consideration, the receipt of which is hereby acknowledged, Metropolitan hereby grants to Valley District an exclusive license ("License") to the use of a portion of the parcel of land owned by Metropolitan on which the Foothill Pump Station has been constructed (the "Property") for the operation, maintenance, repair and replacement of the Foothill Pump Station and related facilities located on the Property, which right shall include, without limitation, the right to construct, maintain, repair and replace a fence around the perimeter of the Property and to control all ingress and egress to and from the Property. The Property is more fully described in Exhibits A and B, which are attached hereto and incorporated herein by this reference.

a. The License shall be irrevocable and non-terminable for a term of ten (10) years commencing on January 1, 2005 and terminating on December 31, 2014. The License shall thereafter automatically be renewed on an annual basis, unless, at least 11 months before the

expiration date for the License, as the same may be extended as provided herein, either Valley District or Metropolitan notifies the other in writing of its decision not to renew the License. Valley District shall not be required to pay to Metropolitan any additional consideration for the License.

b. Valley District and Metropolitan agree to allow reasonable access to the other's staff, employees, contractors and/or agents across the lands subject to the License and/or adjacent rights of way upon reasonable notice.

c. Valley District shall be responsible, at its own cost and expense, for the operation, maintenance, repair, rehabilitation and replacement, as necessary, of the Foothill Pump Station (including, without limitation, the repair of any damage to the Foothill Pump Station due to natural disasters such as earthquake, fire or flood) and shall also be responsible for environmental compliance associated with or relating to the operation, maintenance, repair, rehabilitation and replacement of the Foothill Pump Station.

d. Metropolitan hereby grants to Valley District the right to purchase the Property in the event of the expiration or termination of the License, at a purchase price equal to the then current fair market value (as defined under California law) for the real property (excluding improvements thereon) as determined as provided in this paragraph. In order to exercise this right to purchase, Valley District must give written notice of Valley District's intent to exercise the purchase right ("Valley District's Exercise Notice") within 30 days after the date of expiration or termination of the License. Metropolitan and Valley District shall, within 30 business days after receipt of Valley District's Exercise Notice, mutually determine the fair market value of the Property or a process for making that determination using their good faith judgment. In the event that Metropolitan and Valley District cannot agree upon the fair market

value of the Property or such a process within said 30 day period, either party shall have the right to submit the determination of the fair market value of the Property to neutral binding arbitration: (i) administered by the American Arbitration Association under its commercial arbitration rules, or (ii) conducted according to such other arbitration procedures as may be mutually agreed upon in writing by Valley District and Metropolitan. The License shall remain in full force and effect until the purchase is completed. Metropolitan and Valley District agree to execute any additional instructions and documents as are normal and usual for the sale of real property.

2. Water Deliveries to Cone Camp Intertie. During the term of this Agreement, Valley District agrees, upon Metropolitan's request, to deliver water using any unused capacity in the Foothill Pipeline into Metropolitan's Cone Camp Intertie. Unused capacity is defined as the design capacity (approximately 290 cfs) for the Foothill Pipeline less; (i) demand within Valley District's existing service area, and (ii) the demand in San Gorgonio Pass Water Agency's service area, not to exceed San Gorgonio Pass Water Agency's SWP contract capacity, or 32 cfs. For purposes of this Agreement, the term "demand" includes both the direct delivery of water by Valley District to other water purveyors for immediate use within Valley District's service area and the delivery of water to various facilities for the recharge of groundwater basins within Valley District's service area.

3. Payment for Water and Foothill Pump Station Power Costs. Metropolitan shall pay Valley District for water purchased by Metropolitan from Valley District and for power costs at the Foothill Pump Station associated with the delivery of water to Metropolitan's Cone Camp Intertie as follows:

a. Metropolitan shall, as it has in the past, pay to Valley District the rate as provided by Attachment 2 to the Coordinated Operating Agreement for all water purchased from the

Valley District and delivered through the Foothill Pipeline into Metropolitan's Cone Camp Intertie. Costs for water purchased shall be invoiced to Metropolitan no more frequently than monthly. Payment shall be due to Valley District within 60 days of receipt of invoice.

b. Metropolitan shall pay to Valley District all additional power costs for the Foothill Pump Station required to deliver water through the unused capacity in the Foothill Pipeline to Metropolitan's Cone Camp Intertie. The additional power costs for which Metropolitan is responsible shall be calculated by multiplying the power rate in dollars per acre foot at Foothill Pump Station when the water was delivered to Metropolitan times either; (i) the capacity of the Foothill Pipeline less Valley District demands upstream of the Foothill Pump Station and the flow through the Foothill Pump Station, or (ii) flow through the Foothill Pump Station, whichever is less, times the actual power rate at the Foothill Pump Station when the water was delivered to Metropolitan. For purposes of this paragraph the power rate shall be based upon a the monthly power consumption at the Foothill Pump Station divided by the acre feet of water pumped by the Foothill Pump Station during that month. When water is not delivered to Metropolitan, Metropolitan shall not pay for any power costs associated with the Foothill Pump Station. Costs for power shall be invoiced to Metropolitan no more frequently than monthly. Payment shall be due to Valley District within 60 days of receipt of invoice.

4. Term.

a. This Agreement shall be non-terminable for 10 years from the date hereinabove first written and after 10 years, the term of this Agreement shall be coincidental with the term of the Coordinated Operating Agreement and any attachments thereto.

b. Paragraph 5 of the Coordinated Operating Agreement shall be modified to read as follows:

"5. This Agreement shall remain in force for a period ending December 31, 2014, with the expectation that a definitive agreement with a minimum term of twenty years will be entered into by the parties."

5. Notices. Any notice or communication given under this Agreement shall be effective when deposited, postage prepaid, with the United State Postal Service and addressed to the contracting parties as follows:

If to Metropolitan:

The Metropolitan Water District of Southern California
P. O. Box 54153
Los Angeles, CA 90054-0153
Attention: Ms. Debra Man

If to Valley District:

San Bernardino Valley Municipal Water District
P.O. Box 5906
San Bernardino CA 92412-5906
Attention: Mr. Robert Reiter

Either party may change the address to which notice or communication is to be sent by providing written notice to the other party.

6. Indemnification. Valley District agrees that it is solely responsible for the operation, maintenance, repair, rehabilitation and replacement of the Foothill Pump Station and hereby indemnifies and holds harmless Metropolitan and Metropolitan's directors, officers, employees and agents from any and all liabilities, injuries and/or damages, whether to the Foothill Pump Station, its employees, or to third parties, arising from Valley District's use of the Foothill Pump Station and/or the property (Exhibits A and B) subject to the License provided for by this Agreement. Said indemnification shall include all costs and attorney's fees to defend Metropolitan from any such claim or lawsuit for injury or damages. Metropolitan hereby

indemnifies and holds harmless Valley District and Valley District's directors, officers, employees and agents from any and all liabilities, injuries and/or damages, whether to the Inland Feeder or other facilities, its employees, or to third parties, arising from Metropolitan's activities. Said indemnification shall include all costs and attorney's fees to defend Valley District from any such claim or lawsuit for injury or damages.

7. Jurisdiction and Venue. This Agreement shall be deemed a contract under the jurisdiction and venue of the State of California and for all purposes shall be interpreted in accordance with such laws.

8. Alteration. It is mutually understood and agreed that this Agreement represents the complete understanding of the parties and that no oral understanding or agreement not incorporated herein shall be binding on either party. Except as provided herein, this Agreement may not be modified or altered without formal amendment in writing, signed by both parties thereto.

9. Coordinating Operating Agreement. Except to the extent required by the terms of this Agreement, both parties hereby acknowledge that they remain obligated under the terms of the Coordinating Operating Agreement and Attachments 1 through 4, thereto.

Exhibits:

A. Legal Description of Real Property Subject to the License
B. Map of Real Property Subject to the License

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/
/
/
/

IN WITNESS WHEREOF, the parties have hereunto affixed their names as of the date and year hereinabove first written.

APPROVED AS TO FORM:

By: _____
Lauren R. Brainard
Senior Deputy General Counsel

Date: 12/17/04

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

By: _____
Ronald R. Gastelum
Chief Executive Officer

Date: 12/17/04

APPROVED AS TO FORM:

By: _____
David R. E. Aladjem
Special Counsel

Date 12/22/04

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By: _____
Robert Reiter
General Manager

Date: 12/21/04

In duplicate

O:a\s\contract\MDH_Attachment 5 (Foothill Pump Station) to the Coordinated Operating Agreement 12-15-04.doc

EXHIBIT A

INFED1-27-900RL2287
Revenue Lease RL 2287
MWD to
San Bernardino Valley
Municipal Water District

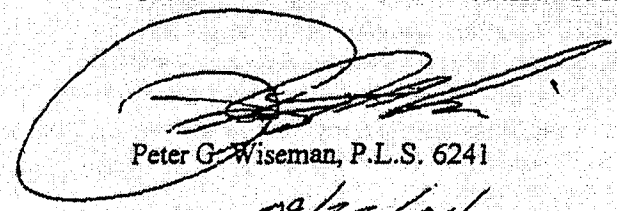
That portion of the southeast quarter (SE¼) of the southeast quarter (SE¼) of Section 1, Township 1 South, Range 3 West, San Bernardino Meridian, in the County of San Bernardino, State of California more particularly described as follows:

COMMENCING at the east quarter corner of said Section 1, marked by 2" I.P. with 3" brass disk stamped "FOR LA DISTRICT U.S. CORPS OF ENGINEERS AND COUNTY OF ORANGE BY JOHNSON-FRANK ASSOC. T1S ¼ S1 S6 LS 4215 R3W R2W 1989" as shown on Record of Survey 04-028 filed in Book 121, page 56 of Record of Surveys, in the Office of the County Recorder of said County; thence S 01° 02' 02" E 2638.77 feet to the southeast corner of said Section 1, marked by a 2-1/2" brass cap stamped "SB COUNTY T1S, R2W, S6 S7, R3W S1 S12", 12" above surface in rock and concrete mound, as shown on said Record of Survey; thence along the southerly line of said SE¼SE¼, S 87° 34' 25" W 53.78 feet to the southeast corner of a triangular shaped parcel of land conveyed to The Metropolitan Water District of Southern California by Grant Deed recorded December 06, 2001 as Document No. 20010553506 of Official Records of said County; thence along the northeasterly line of said triangular parcel of land N 34° 55' 11" W 425.66 feet; thence N 56° 34' 22" W 28.19 feet to the POINT OF BEGINNING; thence leaving said northeasterly line S 88° 44' 43" W 345.98 feet; thence N 00° 32' 52" W 108.87 feet; thence N 89° 27' 08" E 22.00 feet; thence N 00° 32' 52" W 37.00 feet; thence S 89° 27' 08" W 22.00 feet; thence N 00° 32' 52" W 148.72 feet to the southerly line of that certain Grant of Easement to the San Bernardino Valley Municipal Water District recorded June 04, 1973 in Book 8196, page 25 of Official Records of said County; thence along said southerly line S 76° 35' 24" E 106.06 feet to said northeasterly line; thence along said northeasterly line the following courses S 43° 04' 19" E 64.89 feet; thence S 40° 09' 35" E 242.65 feet; thence S 56° 34' 20" E 53.61 feet to the POINT OF BEGINNING,

All as shown on EXHIBIT "B" attached hereto and made a part hereof.

END OF DESCRIPTION

PREPARED UNDER MY SUPERVISION



Peter G. Wiseman, P.L.S. 6241

09/27/04
Date

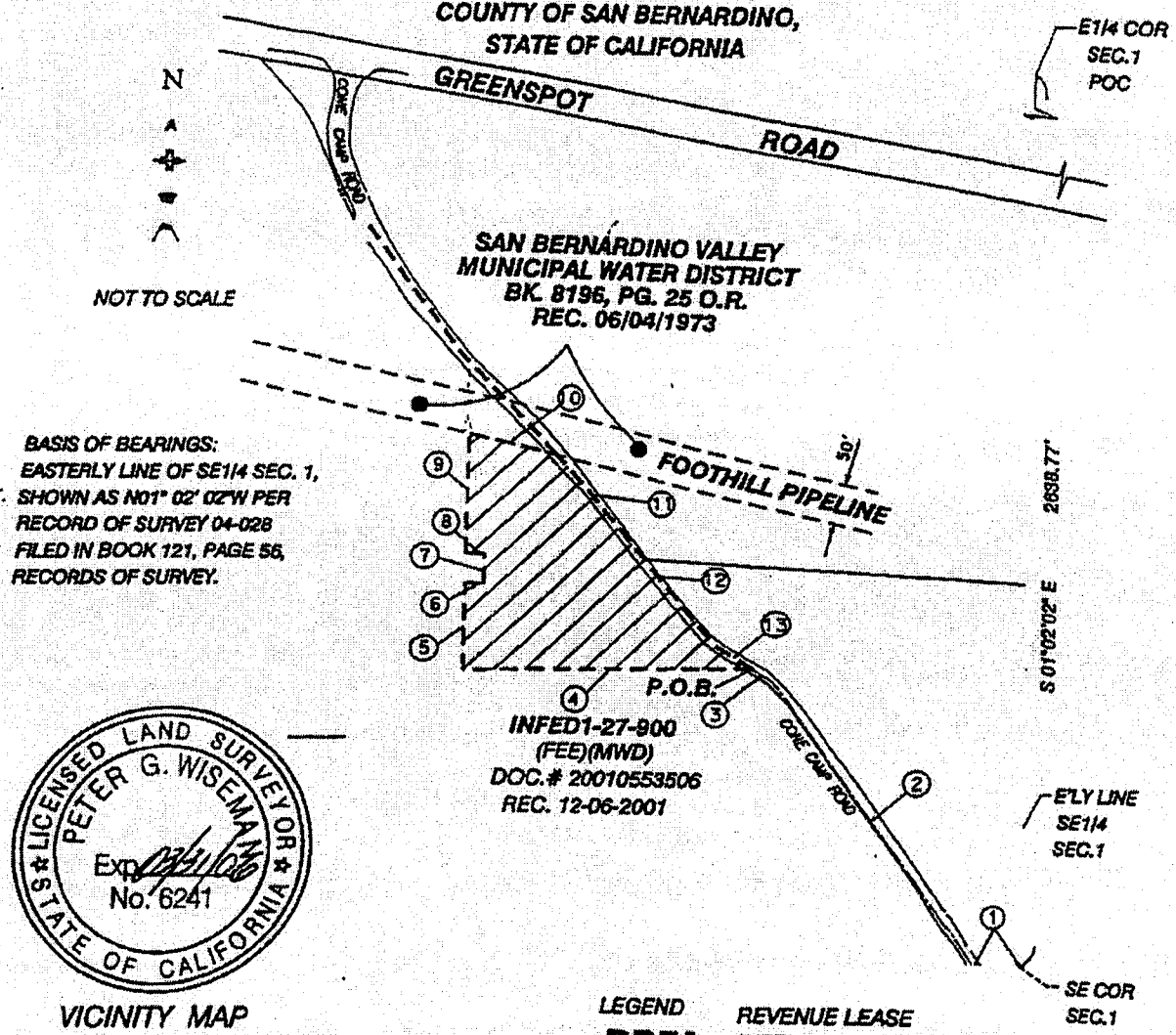


PGW\Inland\row\legals\27\900RL2287.doc

September 22, 2004

EXHIBIT B

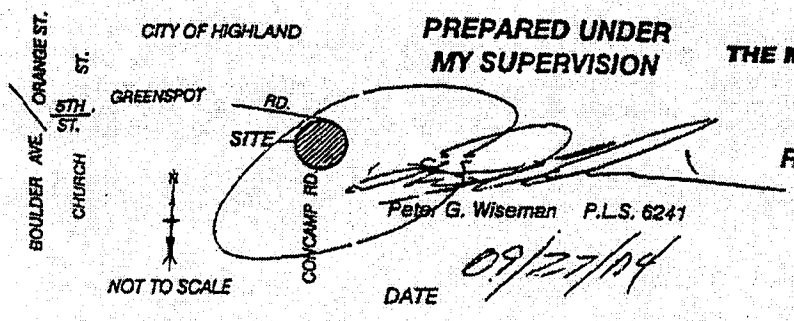
THIS EXHIBIT IS TO BE ATTACHED TO THE LEGAL DESCRIPTION
SE1/4SE1/4 OF SEC. 1, T.1S., R.3W, S.B.M.
COUNTY OF SAN BERNARDINO,
STATE OF CALIFORNIA



BASIS OF BEARINGS:
EASTERLY LINE OF SE1/4 SEC. 1, SHOWN AS N01° 02' 02"W PER RECORD OF SURVEY 04-028 FILED IN BOOK 121, PAGE 56, RECORDS OF SURVEY.

LICENSED LAND SURVEYOR
PETER G. WISEMAN
Exp 03/31/06
No. 6241
STATE OF CALIFORNIA

VICINITY MAP



LEGEND

REVENUE LEASE
INFED1-27-900RL2287
(1.350 ACS.)

PREPARED UNDER
MY SUPERVISION

Peter G. Wiseman P.L.S. 6241

09/27/04
DATE

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

INLAND FEEDER
REVENUE LEASE R.L. 2287
MWD
TO
SAN BERNARDINO VALLEY
MUNICIPAL WATER DISTRICT
INFED1-27-900RL2287

/inland/row/exhib/27/900rl2287.dgn

09/22/2004 PGW/MDT

EXHIBIT B

THIS EXHIBIT IS TO BE ATTACHED TO THE LEGAL DESCRIPTION
SE1/4 SE1/4 OF SEC. 1, T.1S., R.3W, S.B.M.
COUNTY OF SAN BERNARDINO,
STATE OF CALIFORNIA

COURSE TABLE

LINE NO.	COURSE	DIST.
1	S87°34'25"W	53.78'
2	N34°55'11"W	425.66'
3	N56°34'22"W	28.19'
4	S88°44'43"W	345.98'
5	N00°32'52"W	108.87'
6	N89°27'08"E	22.00'
7	N00°32'52"W	37.00'
8	S89°27'08"W	22.00'
9	N00°32'52"W	148.72'
10	S76°35'24"E	106.06'
11	S43 04'19"E	64.89'
12	S40°09'35"E	242.65'
13	S56°34'20"E	53.61'

LICENSED LAND SURVEYOR
PETER G. WISEMAN
Exp 06/30/06
No. 6241
STATE OF CALIFORNIA

PREPARED UNDER
MY SUPERVISION

Peter G. Wiseman P.L.S. 6241

09/27/04
DATE

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

INLAND FEEDER
REVENUE LEASE R.L. 2287
MWD
TO
SAN BERNARDINO VALLEY
MUNICIPAL WATER DISTRICT
INFED1-27-900RL2287

San Bernardino Valley Municipal Water District

1350 SOUTH "E" STREET - P. O. BOX 5906 - SAN BERNARDINO, CALIFORNIA 92412-5906 -(909) 387-9200
FAX (909) 387-9247

December 27, 2004

Stephen N. Arakawa
Manager, Water Resources Management
Metropolitan Water District of Southern California
700 North Alameda Street
Los Angeles, CA 90012

Enclosed please find one fully executed original of Attachments 5 and 6 to the Coordinated Operating Agreement between The Metropolitan Water District of Southern California and San Bernardino Valley Municipal Water District.

Very truly yours,

Randy Van Gelder
Assistant General Manager

Directors and Officers

EDWARD B. KILLGORE
Division I

GEORGE A. AGUILAR
Division II

PAT MILLIGAN
Division III

MARK BULOT
Division IV

STEVE COPELAN
Division V

ROBERT L. REITER
General Manager
and Chief Engineer

AGREEMENT
RELATING TO THE DIVERSION OF WATER
FROM THE SANTA ANA RIVER SYSTEM
AMONG
WESTERN MUNICIPAL WATER DISTRICT OF RIVERSIDE COUNTY
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT
AND
CITY OF RIVERSIDE

Exhibit D

[Sections 12 and 13 of the ICSA Settlement]

in recitals I.D through I.K inclusive as they may exist as of the effective date of this Agreement. Further nothing in this Agreement is intended to modify or affect in any way the judgments initially referred to in recitals I.D, I.F and I.G above. This Agreement shall not be used as evidence in any water rights claim or cause of action.

12. In the event of the failure of the Parties to this Agreement to reach agreement on the ICGMP or if such an agreement has not yet been reached and there is no approved extension of the term of this Agreement, the matter shall be resolved by limited scope mediation and arbitration. The mediation and arbitration shall be conducted by JAMS (sometimes referred to as the mediation service provider), and shall be administered, to the extent practical in the San Bernardino office, or the JAMS office closest to San Bernardino. In the event, for whatever reason, JAMS is not available or lacks the necessary expertise, the parties shall first attempt to use the services of another judicially oriented service, such as IVAMS, and use the American Arbitration Association only after all other judicially based mediation and arbitration services have refused to undertake the mediation and arbitration of the dispute.

The Parties shall promptly initiate the process when they have reached an impasse with regard to any issues preventing complete agreement on the ICGMP. The process shall require the mediation of all disputes as a condition to the initiation of the arbitration process. The mediator shall be selected by mutual agreement of all of the affected Parties, and the cost of the mediator shall be borne on an equal basis by all of the Parties to this Agreement. In the event the Parties are unable to agree on a mediator, the mediation service provider shall select a mediator with civil judicial experience. The Parties shall meet and confer prior to the mediation and provide to the mediator an agreed list of matters to be resolved by the mediation. Unless all of the Parties to the mediation agree otherwise, the only matters to be discussed at the mediation are those matters

submitted to the mediator following the meet and confer meeting of the Parties. Time shall be of the essence during the process and all Parties shall cooperate to promptly complete the process.

In the event the Parties are unsuccessful in resolving any or all of the issues presented to the mediator, a limited scope arbitration shall be conducted promptly following the completion of the mediation. The mediation service provider shall provide to the arbitrating parties a list of available arbitrators. The Parties shall first attempt to agree on an arbitrator having some background or expertise in water law, groundwater contamination or environmental clean-up matters, and failing to do such the mediation service provider shall select an arbitrator with complex civil judicial experience. The scope of the arbitration shall be limited to the issues presented to the arbitrator by the parties to the arbitration. The Parties shall meet and confer prior to the arbitration and provide to the arbitrator an agreed list of issues to be resolved. The arbitrator shall be instructed that the only issues for decision are those issues presented by the arbitrating parties, and that the arbitrator shall comply with California law, unless the subject matter specifically relates to a federal issue. It is specifically agreed that any decision of an arbitrator subjecting any of the Parties directly or indirectly to the Institutional Controls Ordinance is outside the scope and authority of the arbitrator and shall be unenforceable and void. The arbitrator shall have no authority to award costs or attorneys' fees. Each Party agrees that the costs of arbitration shall be shared equally by the Parties and that each Party shall bear their own attorneys fees and preparation costs. Time shall be of the essence during the arbitration process.

The decision of the arbitrator shall be binding as to those matters presented for determination. Any matters included in the decision of the arbitrator outside the issues presented for determination, including without limitation awards of costs and attorneys fees, shall be unenforceable and not binding on the parties. In the event an arbitrator attempts to include matters

or issues outside the scope of the arbitration or any party fails to abide by the terms of this Agreement limiting the scope of the arbitration, any other party shall have the right to file an action for declaratory relief in United States Court for the Central District of California in the consolidated cases, seeking enforcement of the provisions of this Agreement limiting the scope of arbitration.

13. Defined terms that are used in this Agreement and that are also used in the Consent Decree shall have the meaning set forth in the Consent Decree. In the event that there is any inconsistency between the definition of a term in this Agreement and a definition of the same term in the Consent Decree, the definition of the term in the Consent Decree shall control.

14. Each Party shall have access to and the right to examine any of the other Party's pertinent books, documents, papers or other records (including, without limitation, records contained on electronic media) relating to the performance of that Party's obligations pursuant to this Agreement. The Parties shall each retain all such books, documents, papers or other records to facilitate such review. Access to each Party's books, documents, papers and other records shall be during normal business hours only. Nothing in this paragraph shall be construed to operate as a waiver of any applicable privileges.

15. Each signatory of this Agreement represents that s/he is authorized to execute this Agreement on behalf of the Party for which s/he signs. Each Party represents that it has legal authority to enter into this Agreement and to perform all obligations under this Agreement.

16. This Agreement has been arrived at through negotiations and each Party has had a full and fair opportunity to revise the terms of this Agreement. As a result, the normal rule of construction that any ambiguities are to be resolved against the drafting Party shall not apply in the construction or interpretation of this Agreement.

COOPERATIVE AGREEMENT TO PROTECT WATER QUALITY AND ENCOURAGE THE CONJUNCTIVE USES OF IMPORTED WATER IN THE SANTA ANA RIVER BASIN

This Cooperative Agreement to Protect Water Quality and Encourage the Conjunctive Uses of Imported Water in the Santa Ana River Basin ("**Agreement**") is entered into and effective this 18 day of January, ~~2007~~ 2008 by and among the California Regional Water Quality Control Board, Santa Ana Region (the "**Regional Board**") and the entities listed in paragraph 11(n) below. The Regional Board and each of the entities listed in paragraph 11(n) below are individually referred to as a "**Party**" and are collectively referred to as the "**Parties.**"

Recitals

A. Water imported to the Santa Ana River Region, as defined in Water Code section 13200(e) (the "**Region**"), from the State Water Project, the Colorado River and other sources, and to groundwater basins within the Region from other groundwater basins within the Region, is vital to meet present and future demands for water within the Region. Such water is directly used; injected or percolated within groundwater basins; stored in a groundwater basin for later use; may be combined with or used in addition to the native groundwater supplies in a basin; may be exported/imported from one basin to another; and after consumptive use may form a portion of the wastewater that is treated, recharged and reused within the Region. Such conjunctive uses of surface water and groundwater within the Region have been contemplated by the State of California at least since the issuance of the original California Water Plan in 1957 and the adoption by the State Water Quality Control Board of Resolution No. 64-1.

B. The Regional Board is charged by statute with adopting such water quality objectives as may be required to protect the beneficial uses of water within the Region. In particular, the long-term conjunctive use of groundwater in the Region requires that the quality of water in groundwater basins in the Region be managed to meet the water quality objectives for nitrogen and total dissolved solids (collectively, the "**Salinity Objectives**") adopted by the Regional Board in the 1995 Water Quality Control Plan for the Santa Ana River Basin, as amended in 2004 by R8 2004-0001 (the "**Basin Plan**").

C. The Salinity Objectives presently included in the Basin Plan are the result of a multi-year, multi-million dollar cooperative effort among many of the Parties. The Salinity Objectives are a product of the best scientific and technical information available.

D. The Legislature has declared that the facilitation of voluntary transfers of water and water rights is the established policy of the State. The Legislature has further declared that voluntary water transfers between water users can result in a more efficient use of water and can allow more intensive use of developed water resources so as to conserve all available water resources. The Legislature has directed the Regional Board to encourage voluntary transfers of water and water rights.

SBVMWD LEGAL
DOCUMENT 2181

E. The Parties disagree whether the Regional Board may regulate the conjunctive uses of imported water in the Region by means of general waste discharge requirements. Some of the Parties believe the Regional Board lacks authority to regulate the conjunctive uses of water in the Region because, they contend, such water does not constitute "waste" as defined in Water Code section 13050(d); the Regional Board and other Parties believe the Regional Board has such authority.

F. To avoid costly and time-consuming litigation brought to resolve the scope of the Regional Board's authority to regulate imported water and without prejudice to the Parties' competing views on this question, the Parties wish to act cooperatively with the goal of achieving compliance with the Salinity Objectives without the necessity of general waste discharge requirements.

G. The Parties wish to memorialize the terms of their cooperative effort by means of this Agreement.

Agreements

1. *Purpose of Agreement*

This Agreement is intended to allow the Parties to monitor and improve water quality within the Santa Ana River Region in a manner that is consistent both with adopted water quality objectives and with the needs of the inhabitants of the Region for a reliable supply of water. This Agreement is limited in scope to compliance with and implementation of the Salinity Objectives.

2. *Parties*

The Regional Board or any public agency or non-profit mutual water company that imports water to the Region, exports/imports water between basins within the Region, recharges such imported water within the Region, delivers such imported water for potable use within the Region, or treats and/or recharges wastewater within the Region that includes imported water may become a Party to this Agreement.

3. *Term of Agreement*

This Agreement will have an initial term of 10 years and shall automatically renew for subsequent 10-year periods, *provided* that any Party may withdraw at any time by providing one year's written notice of withdrawal to all other Parties.

4. *Preparation of Triennial Water Quality Report*

The Parties that intentionally recharge imported water within the Santa Ana Region (the "**Recharging Parties**") agree voluntarily to collect, compile and analyze the N/TDS water quality data necessary to determine whether the intentional recharge of imported water in the Region may have a significant adverse impact on compliance with the Salinity Objectives within

the Region. To that end, the Recharging Parties will collect, compile and analyze such N/TDS water quality data and prepare, within eighteen months from the effective date of this Agreement and every three years thereafter, a report containing the following information:

a. A summary of the then-current ambient water quality in each groundwater management zone and a comparison of that ambient water quality with the Salinity Objectives. The Recharging Parties shall calculate ambient water quality for each groundwater management zone in a manner that allows for a technically valid comparison with the Salinity Objectives.

b. A summary of the amount and quality of imported water recharged in each groundwater management zone during the previous three-year period.

c. The initial report and each report prepared at six-year intervals thereafter will include a projection of ambient water quality in each groundwater management zone for the subsequent 20 years.

(1) The projection of ambient water quality for each groundwater management zone will be based upon professionally accepted modeling techniques, will reasonably account for surface fluxes of salt input, will reflect the effects of all existing and reasonably foreseeable recharge projects for which there is a certified environmental document and will compare baseline ambient water quality with the Salinity Objectives.

(2) The projections for different groundwater management zones may be based on different modeling techniques.

(3) Each report that includes a 20-year projection of ambient water quality will also present a comparison of then-current water quality in each groundwater management zone with the ambient water quality projection made six years earlier, together with an evaluation of the reason(s) for any differences.

The Recharging Parties will agree among themselves regarding the manner in which they will prepare the report and the manner in which they will share the cost of preparing the report. The Recharging Parties will circulate a draft version of each report to all other Parties for review and written comments for at least a 45-day period. The Recharging Parties shall consider written comments received on the draft report in preparing the final report. Upon completion of the final report, the Recharging Parties shall promptly lodge the final report with the Regional Board.

5. *CEQA Review of Proposed Projects*

Each Recharging Party agrees that, when it serves as a lead agency under the California Environmental Quality Act ("**CEQA**") for a proposed project involving the recharge of imported water within the Region, it will analyze that project as follows:

a. The environmental document will include the water quality data compiled in the most recent triennial report to the Regional Board (see paragraph 4 above) in the analysis of the potential impacts of the proposed project.

b. The environmental document will incorporate professionally acceptable modeling techniques. The Parties agree that the following models meet this standard:

(1) The Wildermuth models used to establish maximum benefit objectives.

(2) The Orange County Basin Groundwater Model.

(3) The USGS/Geoscience/Secor model of the Bunker Hill Groundwater Basin.

(4) The Chino Basin Watermaster/Inland Empire Utilities Agency model.

(5) The Beaumont-Cherry Valley model for the Beaumont management zone

(6) Eastern Municipal Water District's San Jacinto Groundwater Model.

(7) Elsinore Valley Municipal Water District's Elsinore Basin Groundwater Model.

(8) The USGS model of the Beaumont Basin (with MT3D package or equivalent added).

Updates/refinements of these models are presumed to be professionally acceptable.

c. A Recharging Party may base its environmental analysis on a model other than those described above if that model has been presented to the Regional Board at least 180 days prior to the release of the draft environmental document and there has been a determination by the Regional Board or its staff that the alternative model is acceptable.

(1) The Regional Board agrees that an alternative model is acceptable for purposes of this Agreement if the proponent of that model can demonstrate with reasonable certainty that the relative error of the model's calibration for the groundwater management zones in question for a reasonable base period is ± 10% or less when compared with existing groundwater data.

(2) The provisions of the immediately preceding paragraph are not to be construed to preclude other means or methodologies for an alternative model's proponent to demonstrate to the Regional Board that an alternative model is acceptable for purposes of this Agreement.

(3) If an alternative model has not been deemed acceptable by the Regional Board or its staff and a lead agency wishes to include results from that model in the environmental document, the lead agency shall include results from both the alternative model and one of the pre-approved models in the environmental document.

d. The environmental document will include the following analyses:

(1) A summary of the condition of the groundwater management zones, as reflected in the most recent triennial report to the Regional Board, that might be affected by the project.

(2) A 20-year projection of water quality in the groundwater management zone with the proposed project and a comparison of that water quality with conditions expected without the project.

(3) A comparison of the 20-year water quality projection for conditions with the proposed project with the Salinity Objectives for the groundwater management zone.

(4) A description and evaluation of any measures proposed to mitigate the potential effects of the proposed project.

e. The draft environmental document will be circulated to all Parties.

f. Each Recharging Party agrees to adopt the operative guidelines contained in this paragraph 5 as part of its CEQA implementing procedures pursuant to section 15022 of the CEQA Guidelines.

g. The environmental document shall include, if required under CEQA, an effective mitigation monitoring and reporting plan that enables the lead agency to demonstrate compliance with applicable regulatory standards and any performance standards adopted in the environmental document.

6. *Basin Planning Updates*

The Regional Board will review and, if appropriate, revise water quality objectives for the purpose of facilitating the recharge of imported water in groundwater management zones within the Region. The Parties agree to cooperate in such efforts and agree to work cooperatively to develop a program that addresses the use and allocation of assimilative capacity as part of overall Basin planning and management.

7. *Enforcement*

If the Recharging Parties fail timely to prepare the triennial report described in paragraph 4 above or if a Recharging Party fails to include the analyses described in paragraph 5 above in an environmental document prepared in connection with a proposed project involving the recharge of imported water, then any other Party may enforce the terms of this Agreement as

follows.

If the dispute relates to the triennial report on water quality, the Regional Board will hold a hearing asking the Recharging Parties to provide an explanation for the delay or failure to prepare the report. Such a hearing will precede an action for specific performance of the terms of this Agreement by the Regional Board. In the event that the dispute relates to the failure of a Party to provide the appropriate analysis in an environmental document, that dispute will be addressed by the Party(ies) using the remedies available under CEQA.

The Parties recognize that nothing in this Agreement can or is intended to divest the Regional Board of its authority under the Porter-Cologne Water Quality Control Act. Furthermore, nothing in this Agreement shall be construed as a waiver by any Party of any remedies it may have against a non-Party for interference with the implementation of this Agreement.

8. *Books and Records*

Each Party shall have access to and the right to examine any of the other Parties' pertinent books, documents, papers or other records (including, without limitation, records contained on electronic media) relating to the performance of that Party's obligations pursuant to this Agreement. The Parties shall each retain all such books, documents, papers or other records for at least four years after the termination of this Agreement to facilitate such review. Access to each Party's books and records shall be during normal business hours only. Nothing in this paragraph shall be construed to operate as a waiver of any applicable privileges.

9. *No Admissions*

Nothing in this Agreement shall be construed as an admission by any Party regarding any subject matter of this Agreement, including but not limited to the authority of the Regional Board to regulate the importation of water to the Region. The Parties agree that Evidence Code sections 1152 and 1154 render this Agreement inadmissible as evidence against any of the Parties in any adjudicative proceeding, except a proceeding to enforce or interpret the terms or conditions of this Agreement.

10. *Preservation of Rights*

The Parties agree that this Agreement is in settlement of a dispute and preserves all rights of the Parties as they may exist as of the effective date of this Agreement.

11. *General Provisions*

a. *Authority.* Each signatory of this Agreement represents that s/he is authorized to execute this Agreement on behalf of the Party for which s/he signs. Each Party represents that it has legal authority to enter into this Agreement and to perform all obligations under this Agreement.

b. *Amendments.* This Agreement may only be amended with the approval of all Parties.

c. *Jurisdiction and Venue.* This Agreement shall be governed by and construed in accordance with the laws of the State of California, except for its conflicts of law rules. Any suit, action, or proceeding brought under the scope of this Agreement shall be brought and maintained to the extent allowed by law in the County of Riverside, California.

d. *Representations and Warranties.* Each representation and warranty contained herein or made pursuant hereto shall be deemed to be material and to have been relied upon and shall survive the execution, delivery and termination of this Agreement.

e. *Entire Agreement.* This Agreement constitutes the entire agreement of the Parties with respect to the subject matter of this Agreement and supersedes any prior oral or written agreement, understanding, or representation relating to the subject matter of this Agreement.

f. *Successors and Assigns.* This Agreement shall be binding on and inure to the benefit of the successors and assigns of the respective Parties to this Agreement. No Party may assign its interests in or obligations under this Agreement without the written consent of the other Parties, which consent shall not be unreasonably withheld or delayed.

g. *Advice of Counsel; Drafting by Negotiations.* This Agreement has been arrived at through negotiations and each Party has had a full and fair opportunity to revise the terms of this Agreement. As a result, the normal rule of construction that any ambiguities are to be resolved against the drafting Party shall not apply in the construction or interpretation of this Agreement. Each Party represents that it has sought and obtained any legal advice it deems necessary from its own separate counsel before entering into this Agreement.

h. *Waiver.* No waiver of any violation or breach of this Agreement shall be considered to be a waiver of any other violation or breach of this Agreement, and forbearance to enforce one or more of the remedies provided in this Agreement shall not be deemed to be a waiver of that remedy.

i. *Severability.* If, after the date of execution of this Agreement, any provision of this Agreement is held to be illegal, invalid, or unenforceable under present or future laws effective during the term of this Agreement, such provision shall be fully severable. However, in lieu thereof, there shall be added a provision as similar in terms to such illegal, invalid or unenforceable provision as may be possible and be legal, valid and enforceable.

j. *Compliance with Laws.* In performing their respective obligations under this Agreement, the Parties shall comply with and conform to all applicable laws, rules, regulations and ordinances.

k. *No Third-Party Beneficiaries.* This Agreement shall not create any right or interest in any non-Party or in any member of the public as a third party beneficiary.

l. *Necessary Actions.* Each Party agrees to execute and deliver additional documents and instruments and to take any additional actions as may be reasonably required to carry out the purposes of this Agreement.

m. *Counterparts.* This Agreement may be executed in one or more counterparts, which may be executed and delivered via facsimile transmission, each of which shall be deemed to be an original, but all of which together shall constitute but one and the same instrument.

n. *Notices.* All notices, requests, demands or other communications required or permitted under this Agreement shall be in writing unless provided otherwise in this Agreement and shall be deemed to have been duly given and received on: (i) the date of service if served personally or served by facsimile transmission on the Party to whom notice is to be given at the address(es) provided below, (ii) on the first day after mailing, if mailed by Federal Express, U.S. Express Mail, or other similar overnight courier service, postage prepaid, and addressed as provided below, or (iii) on the third day after mailing if mailed to the Party to whom notice is to be given by first class mail, registered or certified, postage prepaid, addressed as follows:

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

California Regional Water Quality Control Board
Santa Ana Region
3737 Main St., Suite 500
Riverside, CA 92501
(951) 782-4130 ph
(951) 781-6288 fax

CITY OF CORONA

City of Corona
400 S. Vicentia Avenue
Corona, CA 92882-2187
(951) 736-2239 ph
(951) 736-2231 fax

CITY OF RIVERSIDE

City of Riverside
5950 Acorn Street
Riverside, CA 92504-1036
(951) 351-6080 ph
(951) 351-6267 fax

EASTERN MUNICIPAL WATER DISTRICT

Eastern Municipal Water District
2270 Trumble Road
Perris, CA 92570
P.O. Box 8300
Perris, CA 92572-8300
(951) 928-3777 ph
(951) 928-6177 fax

ELSINORE VALLEY MUNICIPAL WATER DISTRICT

Elsinore Valley Municipal Water District
31315 Chaney Street
Lake Elsinore, CA 92530
P.O. Box 3000
Lake Elsinore, CA 92531-3000

ORANGE COUNTY WATER DISTRICT

Orange County Water District
10500 Ellis Avenue
Fountain Valley, CA 92708-6921
P.O. Box 8300
Fountain Valley, CA 92728-8300
(714) 378-3200 ph
(714) 378-3371 fax

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

San Bernardino Valley Municipal Water District
1350 South "E" Street
San Bernardino, CA 92408-2725
P.O. Box 5906
San Bernardino, CA 92412-5906
(909) 387-9200 ph
(909) 387-9247 fax

SAN GORGONIO PASS WATER AGENCY

San Gorgonio Pass Water Agency
1210 Beaumont Avenue
Beaumont, CA 92223
(951) 845-2577 ph
(951) 845-0281 fax

WESTERN MUNICIPAL WATER DISTRICT

Western Municipal Water District
450 E. Alessandro Blvd.
Riverside, CA 92508-2449
P.O. Box 5286
Riverside, CA 92517-5286
(951) 789-5000 ph
(951) 780-3837 fax

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

By: _____
Title: Executive Officer

APPROVED AS TO FORM ONLY:

By: _____

CITY OF CORONA

By: _____
Title: CITY MANAGER
Beth Groves

APPROVED AS TO FORM ONLY:

By: _____
Best Best & Krieger, LLP
City of Corona Counsel

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SAN GORGONIO PASS WATER AGENCY

San Gorgonio Pass Water Agency
1210 Beaumont Avenue
Beaumont, CA 92223
(951) 845-2577 ph
(951) 845-0281 fax

WESTERN MUNICIPAL WATER DISTRICT

Western Municipal Water District
450 E. Alessandro Blvd.
Riverside, CA 92508-2449
P.O. Box 5286
Riverside, CA 92517-5286
(951) 789-5000 ph
(951) 780-3837 fax

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

By:_____
Title:

APPROVED AS TO FORM ONLY:

By:_____

CITY OF CORONA

By:_____
Title: CITY MANAGER
Beth Groves

APPROVED AS TO FORM ONLY:

By:_____
Best Best & Krieger, LLP
City of Corona Counsel

831058.3

CITY OF RIVERSIDE

By: _____
Title:

APPROVED AS TO FORM ONLY:

By: Susan Wilson
Deputy City Attorney

Attest: _____
City Clerk

EASTERN MUNICIPAL WATER DISTRICT

By: _____
Title:

APPROVED AS TO FORM ONLY:

By: _____

ELSINORE VALLEY MUNICIPAL WATER DISTRICT

By: _____
Title:

APPROVED AS TO FORM ONLY:

By: _____

CITY OF RIVERSIDE

By:_____
Title:

APPROVED AS TO FORM ONLY:

By:_____

EASTERN MUNICIPAL WATER DISTRICT

By:_____
Title: General Manager

APPROVED AS TO FORM ONLY:

By:_____

ELSINORE VALLEY MUNICIPAL WATER DISTRICT

By:_____
Title:

APPROVED AS TO FORM ONLY:

By:_____

CITY OF RIVERSIDE

By:_____
Title:

APPROVED AS TO FORM ONLY:

By:_____

EASTERN MUNICIPAL WATER DISTRICT

By:_____
Title:

APPROVED AS TO FORM ONLY:

By:_____

ELSINORE VALLEY MUNICIPAL WATER DISTRICT

By:_____
Title: General Manager

APPROVED AS TO FORM ONLY:

By:_____

ORANGE COUNTY WATER DISTRICT

By: _____
Title: President

By: _____
Title: Acting General Manager

APPROVED AS TO FORM ONLY:

By: _____

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By: _____
Title:

APPROVED AS TO FORM ONLY:

By: _____

SAN GORGONIO PASS WATER AGENCY

By: _____
Title:

APPROVED AS TO FORM ONLY:

By: _____

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ORANGE COUNTY WATER DISTRICT

By:_____

Title:

APPROVED AS TO FORM ONLY:

By:_____

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By:_____

Title: President

APPROVED AS TO FORM ONLY:

By:_____

SAN GORGONIO PASS WATER AGENCY

By:_____

Title:

APPROVED AS TO FORM ONLY:

By:_____

ORANGE COUNTY WATER DISTRICT

By:_____
Title:

APPROVED AS TO FORM ONLY:

By:_____

SAN BERNARDINO VALLEY
MUNICIPAL WATER DISTRICT

By:_____
Title:

APPROVED AS TO FORM ONLY:

By:_____

SAN GORGONIO PASS WATER
AGENCY

By: Jeffrey W Davis
Title: General Manager

APPROVED AS TO FORM ONLY:

By:_____

WESTERN MUNICIPAL WATER DISTRICT

By: _____
Donald D. Galleano
President, Board of Directors

APPROVED AS TO FORM ONLY:

By: _____

CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

By: Stacy Adelstadt
Title: GENERAL MANAGER

APPROVED AS TO FORM ONLY:

By:_____

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD,
SANTA ANA REGION

RESOLUTION NO. R8-2008-0019

Authorizing the Executive Officer to Sign and Execute the Cooperative Agreement
To Protect Water Quality and Encourage the Conjunctive Use
Of Imported Water in the Santa Ana River Basin

WHEREAS:

1. In Resolution No. R8-2004-0001, the Regional Board revised the Basin Plan to adopt new water quality objectives for N/TDS based upon the recommendations of a stakeholder process;

2. The N/TDS Task Force, as the stakeholder effort has become known, is a model for the cooperative and collaborative development of water policy initiatives;

3. At its May 19, 2006 meeting, the Regional Board considered draft Resolution No. R8-2006-0042 and draft Order No. R8-2006-0005, which would have adopted general waste discharge requirements for the injection/percolation of imported State Project Water, Colorado River Water or imported well water to recharge groundwater management zones within the Santa Ana Region;

4. At the close of the May 19, 2006 meeting, the Regional Board directed staff to work with appropriate stakeholders – largely the same stakeholders that had participated in the development of the new water quality objectives for N/TDS through the N/TDS Task Force – to investigate the feasibility of a cooperative program to manage salinity within the Region that would serve as an alternative approach to achieve the objectives of draft Resolution R8-2006-0042 and draft Order No. R8-2006-0005;

5. The stakeholder group has met regularly with Regional Board staff and has negotiated a proposed Cooperative Agreement to Protect Water Quality and Encourage the Conjunctive Uses of Imported Water in the Santa Ana River Basin (Attachment A);

6. The City of Corona, the City of Riverside, the City of San Bernardino Municipal Water Department, Eastern Municipal Water District, Elsinore Valley Municipal Water District, Orange County Water District, San Bernardino Valley Municipal Water District, San Gorgonio Pass Water Agency, and Western Municipal Water District of Riverside County have all executed the proposed cooperative agreement and, in doing so, have voluntarily agreed to an enhanced program to manage salinity within the Region;

7. Most water supply agencies in the State, including Metropolitan Water District of Southern California (MWDSC), are already required to collect and report routine chemical analyses to the California Department of Public Health (CDPH). In order to avoid redundant monitoring programs, MWDSC has offered to provide a copy of its annual water quality report, characterizing State Project Water, to the Regional Board. MWDSC's report to CDPH provides substantially the same

information that was originally specified in Table 1 of draft Order No. R8-2006-0005 (see Attachment B) and is a reasonable alternative approach;

8 The Regional Board wishes to obtain increased understanding of so-called "emerging contaminants" that may be present in imported water being used within the Region, however, there is significant uncertainty regarding the methods used to study emerging contaminants, including analytic methods and protocols;

9. The many issues associated with emerging contaminants are presently the subject of a number of studies, including a major study being undertaken by the National Water Research Institute (NWRI), the Metropolitan Water District of Southern California (MWDSC), and the Orange County Water District (OCWD) (NWRI/MWDSC/OCWD Study), estimated to be completed in 2009;

10. Regional Board staff believes that the NWRI/MWDSC/OCWD Study will provide data to satisfy the need for information concerning emerging contaminants for the calendar years 2008 and 2009;

11. For calendar years following 2008 and 2009, until a watershed-specific monitoring plan is developed and approved by the Regional Board, the Santa Ana River Dischargers Association (SARDA) has voluntarily agreed to provide an annual analysis of State Project Water imported to the Region for the suite of parameters sampled as part of the NWRI/MWDSC/OCWD Study;

12. The Cooperative Agreement signatories have agreed to develop a watershed-specific alternative list of emerging contaminants to be submitted for Regional Board consideration as an alternative to the parameters to be monitored during the NWRI/MWDSC/OCWD Study.

13. The Regional Board wishes to encourage voluntary programs to manage salinity and to better understand issues relating to emerging contaminants by partnering with stakeholders in a manner similar to the N/TDS Task Force. The results of the NWRI/MWDSC/OCWD study and other available data will be used in the stakeholder process to inform a program of study and investigation that includes an adaptively managed monitoring program.

14. The Cooperative Agreement and the monitoring program being developed by the stakeholder agencies within the Region obviates the need to bring back to the Board for consideration draft Resolution No. R8-2006-0042 and draft Order No. R8-2006-0005.

NOW, BE IT RESOLVED:

1. In lieu of the adoption of draft Resolution No. R8-2006-0042 and draft Order No. R8-2006-0005, the Regional Board hereby approves the proposed Cooperative Agreement to Protect Water Quality and Encourage the Conjunctive Uses of Imported Water in the

Santa Ana River Basin ("Agreement") and authorizes the Executive Officer to execute the Agreement on behalf of the Regional Board.

2. The Regional Board's execution of the Cooperative Agreement is contingent on the understanding that the other Cooperative Agreement signatories (the "Water Agencies") will, at their own expense, develop and implement a voluntary study program intended to better characterize the presence, extent, distribution and persistence of certain unregulated constituents in imported water used in the Santa Ana Region. The Regional Board supports this voluntary effort to manage water resources so as to avoid the need for future regulatory programs.

   a. The study program will be based on the best available science. Additional data may be collected, as appropriate, as part of the annual plans for investigation described below.

   b. The Water Agencies will, no later than December 31, 2008, prepare a report that provides a preliminary characterization of the presence, extent, distribution and persistence of unregulated constituents (also known as "emerging contaminants") that are indicators of the broader spectrum of constituents of water imported to the Santa Ana Region that may, in the future, be determined by appropriate regulatory agencies (e.g. USEPA or CDPH) to pose concerns for human health ("Imported Water Constituents"). This initial report will use data collected by the Department of Water Resources, the United States Geological Survey, the MWDSC/OCWD/NWRI study and other sources, as may be appropriate, that are developed consistent with generally accepted scientific data analysis protocols. The report shall be distributed to all signatories to this Agreement.

   c. The Water Agencies will, no later than December 31, 2009, and annually thereafter, prepare a plan for investigation (including a summary of the results of all prior monitoring efforts) that addresses at least the following questions for the Imported Water Constituents:

      i. Are there reliable and scientifically accepted protocols to test water for the presence and concentrations of these constituents?

      ii. What is known about the presence, extent, distribution and persistence of these constituents?

      iii. What is known about the toxicity, if any, of these constituents in terms of potential impacts on human health?

      iv. Should additional data be collected on any of these constituents, and, if so, under what sampling and analytical protocols?

   d. The annual plans for investigation described immediately above are not intended to substitute for the process used by USEPA and CDPH to develop MCLs or other water quality standards.

e. It is understood that the constituents that are the subject of the annual plans for investigation will, in all likelihood, change over time as their relative importance or unimportance to human health becomes better known. The Water Agencies will select constituents that they believe will best assist in understanding the potential impacts of imported water on human health.

f. The Regional Board may participate in the development of the report prepared pursuant to paragraph 2(b) above or the annual plans for investigation described in paragraph 2(c) above; however, such participation is not a prerequisite or condition for the development of such plan or reports.

g. The Water Agencies will promptly prepare a status update on the progress of either the report prepared pursuant to paragraph 2(b) above or the current annual plan for investigation prepared pursuant to paragraph 2(c) above upon request by the Regional Board.

h. The Water Agencies will promptly provide a copy of the report prepared pursuant to paragraph 2(b) above, the annual plans for investigation prepared pursuant to paragraph 2(c) above, and the results of analyses conducted pursuant to the Cooperative Agreement and this Resolution to all signatories to this Agreement, including the Regional Board.

I, Gerard J. Thibeault, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Santa Ana Region, on January 18, 2008.

Gerard J. Thibeault
Executive Officer

Table I			
Chemical	***Units***	***Type of Sample***	***Minimum Frequency of Sampling and Analysis***
Total Water Flow	*Mgd*	Flow meter/totalizer	Continuous
Total Nitrogen[1]	*mg/L*	Grab[2]	Annually
Nitrate Nitrogen	*mg/L*	Grab[3]	Annually
Total Inorganic Nitrogen	"	"	"
Total Organic Carbon	"	"	"
Total Dissolved Solids	"	"	"
Total Trihalomethanes (TTHM)[4]	"	"	"
N-Nitrosodimethylamine (NDMA)	"	"	"
Methyl-tert-butyl ether (MTBE)	"	"	"
Perchlorate	*µg/L*	Grab	Annually
Inorganic Chemical			
Aluminum	*µg/L*	Grab	Annually
Antimony	"	"	"
Arsenic	"	"	"
Asbestos	*MFL*	"	"
Barium	*µg/L*	Grab	"
Beryllium	"	"	"
Cadmium	"	"	"
Chromium	"	"	"
Cyanide	"	"	"
Fluoride	"	"	"
Mercury	"	"	"
Nickel	"	"	"
Selenium	"	"	"
Thallium	*µg/L*	Grab	Annually
Volatile Organic Chemicals (VOC)			
Benzene	*µg/L*	Grab	Annually
Carbon Tetrachloride	"	"	"
1,2-Dichlorobenzene	"	"	"
1,4-Dichlorobenzene	"	"	"
1,1-Dichloroethane	*µg/L*	Grab	Annually

1 *Total Nitrogen is defined as the sum of nitrate, nitrite, ammonia, and organic nitrogen concentrations, expressed as nitrogen.*

2 *Grab sample is an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples shall be collected during normal peak loading conditions for the parameter of interest, which may or may not be during hydraulic peaks.*

3 *Grab sample is an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples shall be collected during normal peak loading conditions for the parameter of interest, which may or may not be during hydraulic peaks.*

4 *Sum of bromodichloromethane, dibromochloromethane, bromoform, and chloroform.*

Table I			
Chemical	***Units***	***Type of Sample***	***Minimum Frequency of Sampling and Analysis***
1,2-Dichloroethane	*µg/L*	Grab	Annually
1,1-Dichloroethylene	"	"	"
Cis-1,2-Dichloroethylene	"	"	"
trans-1,2-Dichloroethylene	"	"	"
Dichloromethane	"	"	"
1,2-Dichloropropane	"	"	"
1,3-Dichloropropene	"	"	"
Ethylbenzene	"	"	"
Monochlorobenzene	"	"	"
Styrene	"	"	"
1,1,2,2-Tetrachloroethane	"	"	"
Tetrachloroethylene	"	"	"
Toluene	"	"	"
1,2,4-Trichlorobenzene	"	"	"
1,1,1Trichloroethane	"	"	"
1,1,2-Trichloroethane	"	"	"
Trichloroethylene	"	"	"
Trichlorofluoromethane	"	"	"
1,1,2-Trichloro-1,2,2-Trifluoroethane	"	"	"
Vinyl Chloride	"	"	"
Xylenes[5]	*µg/L*	Grab	Annually
Non-Volatile Synthetic Organic Chemicals (SOCs)			
Alachlor	*µg/L*	Grab	Annually
Atrazine	"	"	"
Bentazon	"	"	"
Benzo(a)pyrene	"	"	"
Carbofuran	"	"	"
Chlordane	"	"	"
2,4-D	"	"	"
Dalapon	"	"	"
Dibromochloropropane (DBCP)	"	"	"
Di(2-ethylhexyl)adipate	"	"	"
Di(2-ethylhexyl)phthalate	"	"	"
Dinoseb	"	"	"
Diquat	"	"	"
Endothall	"	"	"
Endrin	"	"	"
Ethylene Dibromide (EDB)	"	"	"
Glyphosate	"	"	"
Heptachlor	*µg/L*	Grab	Annually

5 *Limit is for either a single isomer or the sum of the isomers.*

Table I			
Chemical	***Units***	***Type of Sample***	***Minimum Frequency of Sampling and Analysis***
Heptachlor Epoxide	*µg/L*	Grab	Annually
Hexachlorobenzene	"	"	"
Hexachlorocyclopentadiene	"	"	"
Lindane	"	"	"
Methoxychlor	"	"	"
Molinate	"	"	"
Oxamyl	"	"	"
Pentachlorophenol	"	"	"
Picloram	"	"	"
Polychlorinated Biphenyls	"	"	"
Simazine	"	"	"
Thiobencarb	"	"	"
Toxaphene	"	"	"
2,3,7,8-TCDD (Dioxin)	"	"	"
2,4,5-TP (Silvex)	*µg/L*	Grab	Annually
Disinfection By-products			
	µg/L	Grab	Annually
Total Haloacetic acids (five) (HAA5)[6]	"	"	"
Notification Levels			
Copper	*µg/L*	Grab	Annually
Lead	*µg/L*	Grab	Annually
Radionuclides			
Combined Radium-226 and Radium-228	*pCi/l*	Grab	Annually
Gross Alpha particle activity (including Radium-226 but excluding Radon and Uranium)	"	"	"
Tritium	"	"	"
Strontium-90	"	"	"
Gross Beta particle activity	"	"	"
Uranium	*pCi/l*	Grab	Annually

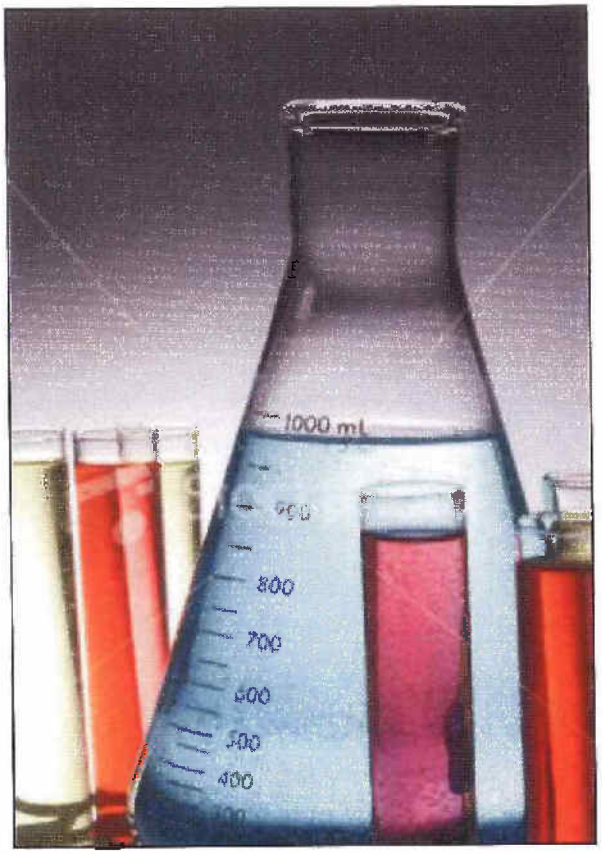
6 *Sum of monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid),*

Phase-II Report

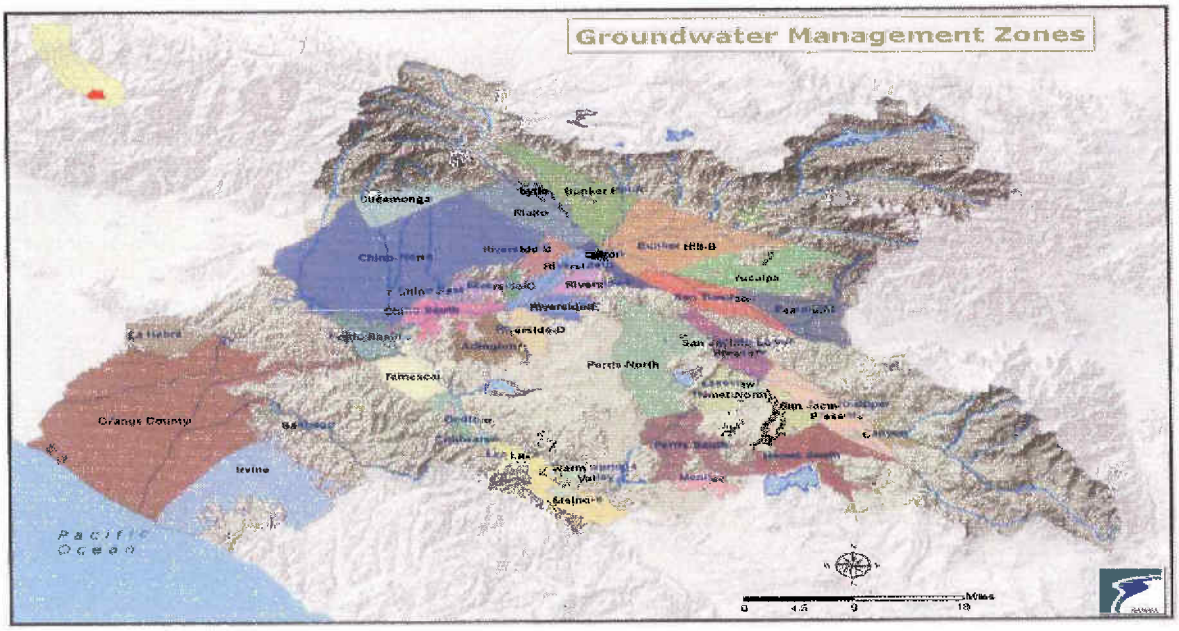
of the

Emerging Constituents Workgroup





A Proposed Work Plan to Characterize Select EC Concentrations in Surface Waters, Imported Waters & Recycled Waters Recharging Groundwaters of the Santa Ana River Watershed.



Proposed Work Plan for Santa Ana Watershed Project Authority's Emerging Constituents Workgroup in 2010-2011

1.0 Introduction

Water quality is routinely sampled at tens of thousands of locations across the U.S. Samples are collected from rain water, storm water runoff, freshwater streams, lakes and reservoirs, groundwater wells and tap water to characterize the quality of various supply sources. Additional samples from the sewage systems are analyzed to ensure pollution prevention programs and wastewater treatment plants are meeting all federal and state water quality standards.

Most sampling programs focus on a few hundred of the most common chemical constituents to assess overall water quality. These chemicals were selected from the larger universe of known chemicals because there is sufficient scientific evidence to indicate they may pose an increased risk to humans, plants or animals (including aquatic organisms) when they occur at elevated concentrations.

Several different regulatory agencies share responsibility for determining the acceptable concentration of potential pollutants. This is a formidable task as there are tens of thousands of chemical compounds in common use. Consequently, state and federal authorities rely on sales/usage information and monitoring data to establish appropriate research priorities for setting new water quality standards through a sophisticated and thorough regulatory review process.[1]

Improvements in analytical technology over the last decade have dramatically increased the number of chemicals we can detect and greatly decreased the concentration at which we can detect them.[2] Today, we are able to identify and quantify some potential pollutants in the range of one part-per-trillion (ppt) or less.[3] For perspective, 1 ppt is approximately equal to a plot of land the size of a postage stamp in an area the size of Orange County.

This new ability to detect infinitesimally small chemical concentrations has fundamentally altered our understanding of what's in the water. Trace levels (approx. 1-100 ppt) of many different man-made chemicals, particularly pesticides, pharmaceuticals and personal care products, have been found in waters across the United States. Collectively, these compounds are referred to as "Emerging Constituents" (ECs) because their presence is just starting to be revealed by rapid advances in analytical technology.[4]

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1 See, for example, U.S. EPA's process for identifying Candidate Contaminant List (CCL).

2 Vanderford, B.J., et al. "Analysis of Endocrine Disrupters and Personal Care Products in Water Using Liquid Chromatography and Tandem Mass Spectrometry." Analytical Chemistry. 2003 (75:6265-6274)

3 Vanderford, B.J. and Shane Snyder. "Analysis of Pharmaceuticals in Water by Isotope Dilution Liquid Chromatography/Tandem Mass Spectrometry." Environmental Science and Technology. 2006 (p. 7312-7320).

4 Emerging Constituents is one of several similar phrases used to describe the same phenomena. Synonyms include: emerging contaminants of concern, chemicals of emerging concern (CEC), micro-constituents, micro-pollutants, trace organics, etc. Such phrases may mistakenly imply that it is the concern that is emerging rather than the knowledge that certain chemicals may be present in a water sample. Similarly, referring to such compounds as Emerging Pollutants or Emerging Contaminants may mistakenly imply that the levels detected

Once new chemicals are detected, the question naturally arises as to what effect, if any, these compounds have on the municipal drinking water supplies. As part of the Recycled Water Policy adopted in early 2009, the California State Water Resources Control Board ("State Board") recently convened a Blue Ribbon Panel of Experts to address this concern.[5] The Panel's mission is to recommend appropriate water quality monitoring strategies for ECs based on the best available pharmacological and toxicological information taking into consideration the fate and transport of such chemicals through advanced treatments systems and the natural environment. The Panel is expected to publish its final recommendations in mid-2010.

2.0 Regulatory Context

In general, chemical compounds can be divided into two categories: regulated and unregulated. Regulated chemicals include those where a formal water quality standard or a state notification level has been established.[6] State and federal authorities may issue orders governing the release of such compounds into the environment. These regulations may range from relatively simple monitoring and reporting requirements to strict discharge prohibitions.

Unregulated chemicals are those for which no water quality standard or state notification level have been established. By definition, ECs are usually considered unregulated chemicals. However, that status may change as new information is developed. To that end, additional data are needed to characterize the presence and persistence of ECs throughout the water supply system. This information, along with epidemiological and toxicological data, may be used to set priorities for developing new water quality criteria, Maximum Contaminant Levels (MCLs), state notification levels and future water quality monitoring requirements.

Because the analytical techniques used to support EC characterization studies are still in the earliest stages of development, great care must be exercised when using the results of those studies. The data generated from the non-standard methods employed during the preliminary characterization studies are not sufficiently accurate for regulatory purposes such as: 303(d) listing decisions, antidegradation analyses, or translating narrative criteria into numeric effluent limits. These legal determinations depend on detailed risk assessments that are not yet available. However, the data from such studies is useful for determining which ECs, if any, should be prioritized for additional method development in order to determine whether more formal regulatory assessments may be needed in the future.

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pose a known hazard to people or the environment. The Emerging Constituents Workgroup in the Santa Ana region has chosen to use the phrase "emerging constituents" to describe a large group of chemicals that may or may not pose a risk to human health and the environment. The California Office of Environmental Health Hazard Assessment and U.S. EPA have primary legal responsibility for making the necessary risk assessments and publishing appropriate water quality standards for all chemicals including Emerging Constituents.

5 SWRCB. Recycled Water Policy. Resolution No. 2009-0011 (adopted 2/3/09). A summary of the Blue Ribbon Panel's work-in-progress is available at www.sccwrp.org

6 Concentrations of concern may be expressed as Maximum Contaminant Levels (MCLs), Public Health Goals (PHGs), State Notification Levels, 304(a) Criteria, Basin Plan objectives, TMDL targets, wasteload allocations, or receiving water limitations. Some of these also serve as formal regulatory thresholds.

Pending development of additional water quality standards, the California Department of Public Health ("DPH") previously suggested that periodic monitoring for trace organic chemicals may serve as a useful indicator of groundwater quality downgradient of recycled water projects.[7] Such data may also be used to corroborate the effectiveness of soil-aquifer treatment and the multi-barrier approach to preventing pathogen pollution. Therefore, as part of the proposed Groundwater Recharge Reuse Regulations, DPH prepared a draft list of ECs to guide planning and permitting efforts for recycled water projects.[8]

Acting on DPH's draft recommendations, Regional Boards began adding EC monitoring requirements to the permits for recycled water projects. As the use of recycled water has increased, so have the number of permits containing such provisions.[9] By 2006, some form of EC monitoring, often based on DPH's preliminary suggestions, was rapidly becoming a permit condition for all direct and indirect recharge of recycled water.[10]

Recognizing that the draft monitoring list for ECs was being misunderstood, DPH subsequently revised the draft Groundwater Recharge Reuse Regulation to clarify its original intent. DPH eliminated the list of specific chemicals and instead proposed that recycled water projects analyze for representative compounds within broad chemical categories (hormones, pharmaceuticals, personal care products, industrial chemicals, pesticides, etc.). The specific choice of chemical would be left to the project proponent and the permitting authorities.[11]

The SWRCB adopted the Recycled Water Policy and convened the aforementioned Blue Ribbon Panel of Experts to review the available science and make appropriate recommendations for future EC monitoring. California's Blue Ribbon Panel is only one of many different groups undertaking similar efforts. Recent news articles and a number of scientific papers and technical reports increased public awareness of the issue and provided impetus for additional EC investigations around the country.[12]

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7 DPH serves several different regulatory roles with respect to groundwater recharge projects. DPH is responsible, under statute, for establishing water quality criteria for groundwater recharge projects. DPH also acts as a consultant to the Regional Boards on the permit requirements for specific groundwater recharge projects. And, DPH has a co-equal role with the Regional Boards in establishing permit requirements for groundwater recharge projects that rely on direct injection rather than surface percolation.

8 http://www.cdph.ca.gov/certlic/drinkingwater/Documents/Recharge/DraftRechargeReg2008.pdf (see Endnote 5). See also http://www.cdph.ca.gov/certlic/drinkingwater/Pages/EmergingContaminants.aspx

9 See, for example, Monitoring and Reporting Program for Regional Board Order No. R8-2005-0033 for Phase I of the Chino Basin Recycled Water Groundwater Recharge Project.

10 See, for example, the NPDES permit issued to Donald C. Tillman Water Reclamation Plant (NPDES No. CA0056227) and the proposed draft NPDES Permit for the Henry N. Wochholz Regional Water Recycling Facility operated by the Yucaipa Valley Water District (NPDES No. CA0105619). Attachment K: List of Unregulated Chemicals: Endocrine Disrupting Chemicals & Pharmaceuticals and Other Chemicals (2007).

11 A more detailed discussion of the history of EC monitoring as it relates to NPDES permitting requirements in California is provided in the Phase-I Report of the Emerging Constituents Task Force. Santa Ana Watershed Project Authority. April, 2009. Available for download at: http://www.sawpa.org

12 Jeff Donn, Martha Mendoza and Justin Pritchard, Associated Press. "AP Probe Finds Drugs in Drinking Water." March 10, 2008.

3.0 Current Studies to Characterize Emerging Constituents

Recently, several large-scale water quality characterization studies began testing for select ECs. The U.S. Geological Survey's National Ambient Water Quality Assessment (NAWQA) and Groundwater Ambient Monitoring Assessment (GAMA) are probably the largest and best known of these research efforts. Results from samples collected throughout the nation indicate that ECs have been detected at trace levels in some surface and groundwater samples.

Subsequent investigations have detected the presence of similar chemicals in both source waters and tap waters.[13] And, follow-on studies found trace amounts of some ECs in highly treated recycled waters.[14] The concentration of trace organic compounds fluctuates greatly from location to location and from day to day. New research is underway to determine if additional treatment can reduce or eliminate ECs cost-effectively.[15]

Given these findings, and the significant role recycled water plays in Southern California, a coordinated effort to characterize the presence of ECs in the Santa Ana River watershed was recently initiated. In 2007-8, the USGS collected and analyzed local groundwater samples as part of the GAMA program. Results of this effort were published in November, 2009 and the EC data are summarized in Table 1.

TABLE 1: EC Characterization for Select Ground Waters in the Santa Ana Region

Compound	Use	# Detections	Detection %	LRL*
Acetaminophen	Analgesic	3 of 89 wells	3%	25 ng/L
Caffeine	Stimulant	3 of 89 wells	3%	15 ng/L
Carbamazepine	Anti-convulsant	5 of 89 wells	6%	30 ng/L
Sulfamethoxazole	Antibiotic	0 of 89 wells	0%	10 ng/L

*LRL = Laboratory Reporting Level

Other pharmaceutical compounds evaluated included: Codeine (narcotic), Continine (nicotine metabolite), Dehydronifedipine (anti-angina metabolite), Diltiaem (anti-angina), Diphenhydramine (antihistamine), Salbutamol (bronchodilator), Thiabendazole (anthelmintic), Trimethoprim (antibacterial), Warfarin (anti-coagulant).

13 Benotti, M.J., R.A. Trenholm, B.J. Vanderford, J.C. Holady, B.D. Stanford and S. A. Snyder. "Pharmaceuticals and endocrine disrupting compounds in U.S. drinking water." Environmental Science and Technology. 2009

14 Snyder, Shane. Southern Nevada Water Authority - Applied R&D Center. Testimony before the Senate Subcommittee on Transportation Safety, Infrastructure Security and Water Quality on Pharmaceuticals in the Nation's Water: Assessing Potential Risks and Actions to Address the Issue. April 15, 2008.

15 See, for example, Dickenson, E.R., J.E. Drewes, D.L. Sedlak, E.C. Wert and S.A. Snyder. "Applying surrogates and indicators to assess removal efficiency of trace organic chemicals during chemical oxidation of wastewaters." Environmental Science and Technology. 2009.

The GAMA study also analyzed for nine other pharmaceutical compounds (listed above). None of these other chemicals were detected in any of the groundwater samples. USGS concluded that:

> *"No pharmaceutical compound was detected in more than five wells, and all of the concentrations were low. Health-based thresholds do not exist for concentrations of pharmaceuticals in drinking water. However, to reach concentrations of the two detected medications (acetaminophen and carbamazepine) equal to dosages typically recommended or prescribed would, in all cases, require consuming more than one million liters of the sampled water. The sampled concentrations of caffeine were, in all cases, less than one-millionth of the concentration of caffeine in regular coffee."*[16] *(pg. 13)*

In addition, three water agencies undertook a focused sampling program to characterize EC concentrations in surface waters including water imported to the region from the State Water Project and the Colorado River. The agencies also evaluated samples collected from the Santa Ana River, its tributaries, and select wastewater discharges to these streams.[17] Consistent with previous studies performed elsewhere, preliminary data from the Santa Ana investigation detected the presence of some ECs in surface waters throughout the region (see Table 2).

TABLE 2: Partial EC Characterization for Surface Waters in Santa Ana River (n=32)[18]

Compound	Use	Minimum	Median	Maximum
Caffeine	Stimulant	9 ng/L	47 ng/L	1620 ng/L
Carbamazepine	Anti-convulsant	49 ng/L	135 ng/L	267 ng/L
Gemfibrozil	Anti-cholesterol	<5 ng/L	48 ng/L	590 ng/L
Primidone	Anti-convulsant	41 ng/L	90 ng/L	146 ng/L
Sulfamethoxazole	Antibiotic	4 ng/L	160 ng/L	721 ng/L

This finding is not surprising considering that recycled water often comprises more than 90% of the flow in the Santa Ana River and trace levels of some ECs were also detected in the treated municipal wastewater discharged to the river (see Table 3).

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[16] Kent, Robert and Kenneth Belitz. Unites States Geological Survey (USGS). Ground-Water Quality Data in the Upper Santa Ana Watershed Study Unit, November 2006 - March 2007: Results from the California GAMA Program. Data Series 404. November, 2009.

17 Guo, Y.C. et al, "Occurrence, Fate and Transport of PPCPs in Three California Watersheds." AWWA Water Quality Technology Conference, November, 2009. Seattle, WA (Research co-sponsored by Metropolitan Water District of Southern California, Orange County Water District, and National Water Research Institute).

[18] Eight stream sites were each sampled four times between April, 2008 and April, 2009.

TABLE 3: Partial EC Characterization for Municipal Effluents (n=16)[19]

Compound	Use	Minimum	Median	Maximum
Caffeine	Stimulant	<5 ng/L	14 ng/L	1883 ng/L
Carbamazepine	Anti-convulsant	123 ng/L	208 ng/L	331 ng/L
Gemfibrozil	Anti-cholesterol	<5 ng/L	22 ng/L	1178 ng/L
Primidone	Anti-convulsant	84 ng/L	146 ng/L	171 ng/L
Sulfamethoxazole	Antibiotic	4 ng/L	417 ng/L	1593 ng/L

Finally, trace concentrations of some ECs were identified in water imported to the Santa Ana Region from the State Project (see Table 4) and the Colorado River (see Table 5).

TABLE 4: Partial EC Characterization for State Project Water (n=8)[20]

Compound	Use	Minimum	Median	Maximum
Caffeine	Stimulant	<5 ng/L	7 ng/L	37 ng/L
Carbamazepine	Anti-convulsant	<1 ng/L	2 ng/L	4 ng/L
Gemfibrozil	Anti-cholesterol	<5 ng/L	<5 ng/L	5 ng/L
Primidone	Anti-convulsant	< 2 ng/L	2 ng/L	10 ng/L
Sulfamethoxazole	Antibiotic	5 ng/L	10 ng/L	11 ng/L

TABLE 5: Partial EC Characterization for Colorado River Water (n=4)[21]

Compound	Use	Minimum	Median	Maximum
Caffeine	Stimulant	<5 ng/L	<5 ng/L	<5 ng/L
Carbamazepine	Anti-convulsant	<1 ng/L	<1 ng/L	2 ng/L
Gemfibrozil	Anti-cholesterol	<5 ng/L	<5 ng/L	<5 ng/L
Primidone	Anti-convulsant	<2 ng/L	2 ng/L	3 ng/L
Sulfamethoxazole	Antibiotic	<1 ng/L	<1 ng/L	1 ng/L

[19] Four wastewater treatment plans were each sampled four times between April, 2008 and April, 2009. The four plants include three that discharge to the Santa Ana river system and one that discharges to the Colorado River in Nevada.

[20] Two samples locations, representing the east and west branches of the State Project Water in Southern California, were sampled four times each between April, 2008 and April, 2009.

[21] Four samples were collected from Lake Mathews, the terminal reservoir for Colorado River imported to Southern California, between April 2008 and April 2009.

After confirming that ECs were present, water and wastewater agencies throughout the Santa Ana region elected to continue their characterization studies and to coordinate those efforts with one another. This voluntary program is intended to supplement the existing knowledge base pending recommendations from the Blue Ribbon Panel of Experts and potential new policy guidance from DPH and/or the State Board. At this time, it is not known what those recommendations will be or what actions DPH and the State Board will take based on those recommendations.

4.0 Purpose

The water and wastewater agencies serving the Santa Ana region are committed to develop an EC investigation program that addresses the public's desire to know more about what chemicals may be in their water supplies. Such efforts are essential to increase public acceptance and encourage greater use of recycled water.

The rationale for this voluntary program was recently described in a report entitled: "Managing Contaminants of Emerging Concern in California." The report summarizes results and recommendations from a forum of regulatory and scientific experts convened to assist the State Board in developing a scope-of-work for the Blue Ribbon Panel. Workshop participants found that more data characterizing the presence and persistence of ECs will: 1) establish a baseline to evaluate fate and transport mechanisms and potential trends in water quality which is essential to develop a risk-based approach to understanding and managing exposure to ECs; 2) aid federal and state authorities as they set priorities for and determine whether to develop new water quality criteria; and 3) be useful for evaluating the effectiveness of pollution prevention and source control programs.

The report also identified three steps that should be taken as agencies collaborate to characterize and understand the effects of ECs on public health and the environment. The first step will be filling data gaps through investigative monitoring and targeted research. The second step will be identifying, developing and testing accurate and reliable methods for detecting ECs at very low levels. The third step will be to incorporate the measurement of ECs into on-going water quality studies, such as those that have been undertaken by Inland Empire Utilities Agency, the Metropolitan Water District of Southern California, National Water Research Institute and Orange County Water District. The workshop participants stressed that:

"In lieu of regulations or compliance monitoring...investigative chemical monitoring should be used as the first step towards development of a management strategy in California." [A key element] *"of this process will be our ability to adapt the strategy as new information becomes available. Since relatively little is known about CECs at this time, new information and technology will undoubtedly affect our ability to monitor and establish thresholds for CECs. Preliminary CEC monitoring lists will be subject to trial and error."*[22]

As noted earlier, the draft DPH Groundwater Recharge and Reuse regulations do not identify the specific ECs that must be monitored. Rather, DPH states that this determination must be made on a project-by-project basis and will vary based on a number of considerations including the source of the recharge water, the type of treatments applied to the recycled water and the nature of soil conditions in the area and other factors that may affect the fate, transport and degradation of ECs in the environment. DPH also acknowledges that, for some projects, other chemicals (such as the relative amounts of inorganic tracers or total organic carbon) may provide a better indication of the sources influencing groundwater quality than the specific concentration of various trace organic compounds. It is the responsibility of the project proponents to recommend and justify an appropriate monitoring strategy to the state permitting authorities.

Because analytical technology is constantly improving and our knowledge of which chemicals may pose an unacceptable risk to people and the environment is always growing, it is agreed that any EC investigation program must be updated regularly. Therefore, it is likely that the list of chemicals recommended for future characterization studies will change over time. The water and wastewater agencies proposing to undertake this investigation are committed to a process of adaptive management to ensure the EC characterization program fulfills its stated purpose using the best available science.

To facilitate early implementation of these recommendations, stakeholders in the Santa Ana region propose to undertake a water quality characterization study in 2010-11 to fill some of the aforementioned data gaps. Samples collected from select surface water streams, imported water sources and wastewater treatment plants will be analyzed for a representative group of ECs using the best analytical technology presently available.

The EC Workgroup will prepare a written Sampling and Analysis Plan (SAP) describing the specific data quality objectives, sampling locations, sampling protocols, sampling frequency, analytical methods, QA/QC procedures, database management and reporting requirements. The plan will also discuss the appropriate and inappropriate uses of the data given the various method limitations. The SAP will be submitted to the Regional Board staff by March 15, 2010 for review and comment. The general specifications for the 2010-2011 EC Characterization Study are described in Section 5.

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[22] "Managing Contaminants of Emerging Concern in California." California CEC Workshop. Co-sponsored by the Southern California Coastal Water Research Project (SCCWRP), California Ocean Protection Council, California Ocean Science Trust, National Water Research Institute, San Francisco Estuary Institute and the Urban Water Research Center at the University of California-Irvine. Held: April 28-29, 2009. Report published in Sept., 2009 and is available at: ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/600_CEC_wkshp2009.pdf

5) 2010-11 Characterization Study

A) Proposed Analytes

Table 6 identifies the trace organic compounds that the stakeholders propose to assess during the 2010 characterization period. The list may be revised for the 2011 characterization period based on recommendations from the Blue Ribbon Panel of Experts or new guidance from the State Board.

Table 6: ECs to be Analyzed

Chemical	Category	Common Use	Notes
Acetaminophen (aka "Tylenol")	Pharmaceutical	Over-the Counter Analgesic	3,4,5,8
Bisphenol-A (BPA)	Industrial	Plastic Manufacturing	7
Caffeine (coffee, tea, soft drinks)	Food Additive	Non-Prescription Stimulant	3,5,6,8
Carbamazepine	Pharmaceutical	Prescription Anti-Convulsant	1,2,3,4, 5,6,8
DEET (aka "Off")	Pesticide	Household Insect Repellent	1,2,6
Diuron	Herbicide	Weed Control	6
Ethynylestradiol/Ethinylestradiol	Hormone	Prescription	1,2,4,6
Gemfibrozil	Pharmaceutical	Prescription Anti-Cholesterol	1,2,3,4,5,6
Ibuprofen (aka "Advil")	Pharmaceutical	Over-the-Counter Analgesic	3,4,5
Sulfamethoxazole	Pharmaceutical	Prescription Antibiotic	1,2,3,5,6,8
TCEP	Industrial	Flame Retardant	1,2,3,6

Selection Criteria Notes:

1) Commonly detected in national studies of water supply sources.
2) Commonly detected in national studies of finished drinking water.
3) Detected in SAR surface waters and/or effluents in MWDSC/NWRI/OCWD study.
4) Detected in Inland Empire Utility Agency's existing EC monitoring program.
5) Detected in previous USGS studies of the Tualatin River system in Oregon.
6) Recommended by expert panel assembled to review an advanced reclamation project proposed for the West Basin.
7) Recently added to U.S. EPA's Candidate Contaminant List (CCL)
8) Detected by the USGS GAMA program in Santa Ana groundwater samples.

B) Proposed Sampling

Table 7: Sampling Locations, Frequency, Type & Responsibilities

Sampling Site	Sampling Frequency	Sample Type	Responsible Agency[23]
Final Effluent from All Wastewater Treatment Plants[24]	Annually	24-hour Composite	Permitted Operator
State Project Water @ Devil Canyon	Annually	Representative Grab	MWDSC
Colorado River @ San Jacinto West Portal	Annually	Representative Grab	MWDSC
Santa Ana River near MWD Crossing	2x/year	Representative Grab	OCWD
Santa Ana River near Prado Dam	2x/year	Representative Grab	OCWD

Water samples will be collected by June of each year. Second samples, when needed, will be collected by September of each year. Due to the time required to analyze samples, review QA/QC and summarize results, data from the summer collection period will be included in the next year's report.[25]

C) Proposed Methods

At present, there are no standardized or certified methods for analyzing most ECs.[26] Until EPA approves such methods, the EC Workgroup is committed to using the best analytical technology commercially available: LC-MS-MS with isotope dilution. In general, this technique is capable of detecting select ECs in de-ionized laboratory water at concentrations of 1 to 10 ng/L. However, the specific reporting detection level (RDL) will vary over time and between laboratories in more complex water matrices. Therefore, more detailed data quality objectives and QA/QC requirements will be specified in the Sampling and Analysis Plan submitted to the Regional Board.

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[23] Pending approval and funding authorization from each agency.

[24] Includes all wastewater treatment plants operating under a valid NPDES permit or Waste Discharge Requirement (WDR) issued by the California Regional Water Quality Control Board – Santa Ana Region and/or U.S. EPA regardless of whether the discharge is to waters of the U.S. or waters of the state.

[25] Therefore, the report submitted in November, 2010 will include only the results for samples collected in May, 2010. The report submitted in November, 2011 will include the results for samples collected in August, 2010 and May, 2011.

[26] U.S. EPA approves analytical methods pursuant to 40 CFR Part 136.

D) Proposed Reporting

Participating stakeholders will submit copies of all sampling documents (field notes and chain of custody forms) and laboratory reports to the Santa Ana Watershed Project Authority (SAWPA). SAWPA will input the data to the SAWDMS database and prepare an annual report summarizing results of the EC characterization program. A draft copy of the EC report will be distributed for review and comment and SAWPA will convene a stakeholder meeting shortly thereafter to discuss suggested revisions to the draft document. The final report will be submitted to the Regional Board, on behalf of the stakeholders, by December 31st of each year.

The annual report will include a detailed description of the chemical analytes, sampling locations, sampling dates and protocols, analytical methods, QA/QC procedures and relevant results. Where appropriate, the report will also include any recommended changes to future EC sampling efforts (including revised analytes or sampling locations).

Finally, to facilitate public understanding of the new information, the report will describe the toxicological relevance of the measured EC concentrations. The purpose of this discussion is to provide, where possible, a scientific context for evaluating the relative health risks of these trace organic compounds.[27]

E) Proposed Schedule for 2010-11 Study Period

Task	Description	Deadline
1	Prepare and Submit EC Sampling and Analysis Plan	Mar. 15, 2010
2	Collect and Analyze Initial Samples from All Locations in Table 7	June 30, 2010
3	Submit Initial Sample Results and Related Documentation to SAWPA	July 31, 2010
4	ECW Meeting to Review and Discuss Initial Sample Results	Aug. 31, 2010
5	Collect and Analyze Second Surface Water Samples	Sept. 30, 2010
6	Distribute Draft Annual Report to Emerging Constituents Workgroup	Oct. 31, 2010
7	ECW Meeting to Review and Finalize Annual Report	Nov. 30, 2010
8	Submit First Annual Report to Regional Board	Dec. 31, 2010
9	Submit Second Surface Water Sample Results from 2010 to SAWPA	Jan. 31, 2011

[27] See, for example, "Toxicological Relevance of Endocrine Disrupting Chemicals and Pharmaceuticals in Water" American Water Works Association Research Foundation Report No. 3085/WRF 04-003.

E) Emerging Constituents Workgroup

SAWPA will periodically coordinate meetings of the Emerging Constituents Workgroup (ECW) to organize the next phase of the EC characterization study. This includes reviewing new water quality data, preparing the annual EC report, and integrating new EC policies enacted by the State Board and DPH.

During 2010, and after reviewing the final published results from the GAMA study and the MWDSC/NWRI/OCWD study, the ECW will determine whether it is useful and appropriate to expand the investigation effort to include storm water samples and select groundwater locations in 2011.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

By: _____
Title:

APPROVED AS TO FORM ONLY:

By: _____

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

By: _____
Title:

APPROVED AS TO FORM ONLY:

By: _____

CITY OF CORONA

By: _____
Title:

APPROVED AS TO FORM ONLY:

By: _____

CITY OF RIVERSIDE

By: _____
Title:

APPROVED AS TO FORM ONLY:

By: _____

EASTERN MUNICIPAL WATER DISTRICT

By: _____
Title:

APPROVED AS TO FORM ONLY:

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ELSINORE VALLEY MUNICIPAL WATER DISTRICT

By: _____
Title:

APPROVED AS TO FORM ONLY:

By: _____

ORANGE COUNTY WATER DISTRICT

By: _____
Title:

APPROVED AS TO FORM ONLY:

By: _____

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By: _____
Title:

APPROVED AS TO FORM ONLY:

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WESTERN MUNICIPAL WATER DISTRICT

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Title:

APPROVED AS TO FORM ONLY:

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WESTERN RIVERSIDE COUNTY REGIONAL WASTEWATER AUTHORITY

By: _____
Title:

APPROVED AS TO FORM ONLY:

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CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT

By:_____
Title:

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YUCAIPA VALLEY WATER DISTRICT

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Title:

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CITY OF REDLANDS

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APPROVED AS TO FORM ONLY:

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CITY OF RIALTO

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INLAND EMPIRE UTILITIES AGENCY

By:_____
Title:

APPROVED AS TO FORM ONLY:

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LEE LAKE WATER DISTRICT

By:_____
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APPROVED AS TO FORM ONLY:

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CITY OF BEAUMONT

By:_____
Title:

APPROVED AS TO FORM ONLY:

By:_____

SAN GORGONIO PASS WATER AGENCY

By:_____
Title:

APPROVED AS TO FORM ONLY:

By:_____

SANTA ANA WATERSHED PROJECT AUTHORITY

By:_____
Title:

APPROVED AS TO FORM ONLY:

By:_____

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

SAN GORGONIO PASS WATER AGENCY

DEMONSTRATION PROJECT

WATER EXCHANGE AGREEMENT

RECITALS

A. San Bernardino Valley Municipal Water District ("VALLEY") is a public agency organized pursuant to the California Municipal Water District Law of 1911 (Water Code §§ 71000 et seq.) with broad powers to acquire and sell water. VALLEY has a Water Supply Contract with the California Department of Water Resources ("DWR") that provides VALLEY with a Table A Amount of up to 102,600 acre-feet per annum of water ("AFA") from the State Water Project ("SWP").

B. San Gorgonio Pass Water Agency ("AGENCY") is a public agency organized in accordance with San Gorgonio Pass Water Agency Law (Water Code Appendix §§ 101-1 et seq.) with broad powers to acquire and sell water. AGENCY has a Water Supply Contract with DWR that provides it with a Table A Amount of up to 8,650 AFA in 2007, increasing to 17,300 AFA in 2008 and thereafter.

C. VALLEY and AGENCY have previously entered into cooperative agreements to provide facilities and capacity to achieve and maximize delivery of SWP water to their respective service areas.

D. VALLEY and AGENCY intend by this Agreement to implement a Demonstration Project to exchange water for an initial period of one year to determine the long-term feasibility, including evaluation of benefits, costs, and beneficial distribution of supplemental water to VALLEY and AGENCY.

E. VALLEY and AGENCY desire to enter into this Water Exchange Agreement whereby VALLEY will acquire up to 1,000 AF of SWP water from AGENCY ("INITIAL DELIVERY") in exchange for delivery of a like amount of water from VALLEY to AGENCY ("EXCHANGE WATER") within three years of the INITIAL DELIVERY ("RETURN PERIOD").

F. VALLEY has a need for the INITIAL DELIVERY on or before March, 2009 to improve reliability of supply to existing water users within VALLEY.

SBVMWD LEGAL
DOCUMENT 2205

G. AGENCY has up to 1,000 AF of SWP water available from its 2008 allocation of SWP water for the INITIAL DELIVERY provided it can receive the EXCHANGE WATER from VALLEY within three years to enable it to meet anticipated demands for water within its service area.

IN CONSIDERATION OF THE MUTUAL PROMISES of the Parties as set forth herein, it is agreed as follows:

1. **Description of the Exchange and Procedures.**

a. On or before December 1, 2008, AGENCY will in writing request the California Department of Water Resources ("DWR") to deliver up to 1,000 AF of the AGENCY's SWP Table A Amount to VALLEY ("INITIAL DELIVERY") at its designated point of delivery. A copy of such written request shall be delivered to VALLEY. After written confirmation to AGENCY from VALLEY of such INITIAL DELIVERY, at the written request of AGENCY, VALLEY shall deliver a like amount of SWP water or water of equal or better quality ("EXCHANGE WATER") to AGENCY, in whole or in part as specified in such request. AGENCY shall not make such request any earlier than October, 2009. VALLEY and AGENCY shall meet and confer in advance of such delivery date to schedule the delivery of the EXCHANGE WATER over the Return Period. VALLEY shall complete delivery of the EXCHANGE WATER no later than December, 2011. VALLEY's obligation to deliver EXCHANGE WATER shall be from any source provided it is equal to or better than the water quality standards established by DWR for the State Water Project. AGENCY'S obligation for the INITIAL DELIVERY shall be subject to the availability of water from the SWP, and meeting the needs of the Agency to provide water for replenishment and meeting the needs of water retailers within the AGENCY as determined in good faith in the sole discretion of the AGENCY.

b. If AGENCY requests delivery of EXCHANGE WATER in a year which DWR has declared to be critically dry ("Critically Dry Year"), VALLEY and AGENCY agree to confer in good faith to adjust the quantity of EXCHANGE WATER to be delivered in that year so as to minimize adverse impacts on the ability of both parties to satisfy the needs of their respective customers. Further, if this Agreement is the subject of a legal challenge, AGENCY may, at its sole discretion, by written notice to VALLEY, cancel this Agreement. If the INITIAL DELIVERY has occurred before the written cancellation notice, VALLEY shall promptly cause the INITIAL DELIVERY to be returned to AGENCY unless, at the time of the notice, it is a Critically Dry Year, in which event VALLEY and AGENCY shall confer in good faith to determine the schedule for such return.

2. **Points of Delivery and Measurement.**

a. VALLEY. The point of delivery and measurement of the Initial Water from AGENCY shall be from DWR at Reach 26a as measured at the Devil Canyon Powerplant Afterbay.

b. AGENCY. The point of delivery and measurement of the Exchange Water from VALLEY to AGENCY shall be from VALLEY at Reach 26a as measured at the Devil Canyon Powerplant Afterbay.

3. **Charges.**

a. Neither VALLEY nor AGENCY shall charge any costs to the other for use of either agency's facilities to the point of delivery.

b. VALLEY shall be responsible for all delivery costs of the INITIAL DELIVERY. AGENCY shall be responsible for all delivery costs of the EXCHANGE WATER.

4. **Conditions Precedent and Covenants.**

4.1 **DWR Approval.** No provisions of this Agreement requiring DWR approval shall become operative until DWR approves of those provisions. VALLEY and AGENCY shall use their best efforts to promptly obtain such approvals.

4.2 **State Water Contractors.** VALLEY and AGENCY agree they will each with due diligence and in good faith seek to obtain the support and approval of this Agreement by the State Water Contractors and request DWR approve the exchange of water as set forth herein.

5. **Future Banking and Conjunctive Use Projects.**

VALLEY and AGENCY believe that coordinated operation and development of water supplies within their respective service areas will lead to improved reliability and supply of water to meet the needs of their respective water users. In that regard, VALLEY and AGENCY agree to work together in good faith and with due diligence to determine the technical and financial feasibility and implementation of such arrangements subject to compliance with applicable laws, including California Environmental Quality Act as follows:

a. Water banking and storage within the service areas of VALLEY and AGENCY for their mutual benefit.

b. Increased use of recycled water by VALLEY for beneficial uses in its service area to create additional water for use by AGENCY.

6. **Notices.**

All written notices required to be given pursuant to the terms of this Agreement shall be either (i) personally delivered, (ii) deposited in the United States express mail or first class mail, (iii) delivered by overnight courier service, or (iv) delivered by facsimile transmission, provided that the original of such notice is sent by certified United States mail, postage prepaid, no later than one (l) business day following such facsimile transmission. All such notices shall be deemed delivered upon actual receipt (or upon first attempt at delivery pursuant to the methods specified in clauses (i), (ii) or (iii) above if the intended recipient refuses to accept delivery). All such notices shall be delivered to the following addresses or to such other address as the receiving party may from time to time specify by written notice to the other party:

VALLEY:

San Bernardino Valley Municipal Water District
380 East Vanderbilt Way
P.O. Box 5906
San Bernardino, CA 92412-5906

Attention: General Manager
Telephone: (909) 387-9211
Facsimile: (909) 387-9247

AGENCY:

San Gorgonio Pass Water Agency
1210 Beaumont Avenue
Beaumont, CA 92223

Attention: General Manager
Telephone: (951) 845-2577
Facsimile: (951) 845-0281

7. **Miscellaneous.**

7.1 **No Assignment.** No party shall assign or otherwise transfer its rights or obligations under this Agreement without the prior written consent of the other party.

7.2 **Successors and Permitted Assigns.** All covenants and agreements contained in this Agreement by or on behalf of any of the parties shall bind and inure to the benefit of their respective successors and permitted assigns, wither so expressed or not.

7.3 **No Modification of Existing Contracts.** This Agreement shall not be interpreted to modify the terms or conditions of the water supply contracts between the DWR and AGENCY and between DWR and VALLEY or to modify the terms or conditions of the EBX and other water facility agreements between DWR, AGENCY and VALLEY.

7.4 **Governing Law/Venue.** This Agreement shall be construed and enforced in accordance with the laws of the State of California. Venue for any actions brought regarding this Agreement shall be in the County of Riverside, provided that, in accordance with the provisions of the Code of Civil Procedure Section 394, a disinterested judge from a neutral county is assigned to hear such action and all proceedings in connection therewith.

7.5 **Ministerial Actions.** Due to increasing State-wide demands for water, water exchanges, water storage, banking and recovery, and various water quality issues throughout the State, the Parties agree that this Project is unique and cannot be duplicated and there is not a plain, speedy, and adequate remedy at law for VALLEY or AGENCY should either refuse or fail to perform their respective obligations as set forth in this Agreement. Consequently, VALLEY and AGENCY agree that the terms of this Agreement are enforceable by writ of mandate and specific performance.

7.6 **Counterparts.** This Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which, taken together, shall constitute one and the same instrument. Signatures sent by facsimile shall be deemed originals and treated in all respects as originals.

7.7 **Further Action.** The parties agree to and shall take such further action and execute such additional documents as may be reasonably required to effectuate the terms and conditions of this Agreement and to the extent consistent with terms thereof.

7.8 **Interpretation.** This Agreement has been jointly negotiated and drafted. The language of this Agreement shall be construed as whole according to its fair meaning and without regard to or aid of Civil Code Section 1654 or similar judicial rules of construction. Each party acknowledges that it has had the opportunity to seek the advice of experts and legal counsel prior to executing this Agreement and that it is fully aware of and understands all of its terms and the legal consequences thereof. The headings used in this Agreement are for reference only and shall not affect the construction of this Agreement.

DATE: 11/6/2008

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By _____

DATE: 11-6-08

SAN GORGONIO PASS WATER AGENCY

By _____

Notice of Exemption

To: Clerk of the Board
County of San Bernardino
385 N. Arrowhead, 2nd Floor
San Bernardino, CA 92415

From: San Bernardino Valley Municipal Water District
380 E. Vanderbilt Way
San Bernardino, CA 92408

Project Title: San Bernardino Valley Municipal Water District/San Gorgonio Pass Water Agency Demonstration Project Water Exchange Agreement (the "Project").

Project Location: The Project facilities are located in Riverside and San Bernardino Counties in the service areas of San Gorgonio Pass Water Agency ("Agency") and San Bernardino Valley Municipal Water District ("Valley").

Project Description: The Project consists of a short-term agreement to exchange water between Valley and Agency. The Project involves the collection of data and information relating to exchanges of water between Valley and Agency in order to determine the long-term feasibility of distribution of water to Valley and the Agency. The Project involves an initial delivery of up to 1,000 acre-feet of water from Agency to Valley on or before March 2009. Thereafter, no earlier than October 2009 and no later December 2011, Valley will deliver a like amount of water back to the Agency.

The Project will not require the construction of any facilities for the initial delivery and return of the water exchanged pursuant to the Project. The Agency does not currently need the water that it intends to deliver to Valley and the water received by Valley will not be growth-inducing because it will only be used to improve reliability of supply to its existing water users within Valley. There is no possibility that the Project may have a significant effect on the environment.

Public Agency Approving the Project: San Bernardino Valley Municipal Water District, 380 E. Vanderbilt Way, San Bernardino, CA 92408.

Persons Carrying Out the Project: San Gorgonio Pass Water Agency, San Bernardino Valley Municipal Water District, the California Department of Water Resources.

Exempt Status: The Project is exempt from the provisions of the California Environmental Quality Act ("CEQA") pursuant to CEQA's commonsense exemption set forth in CEQA Guidelines section 15061(b)(3). In addition, the Project is also exempt from the provisions of CEQA pursuant to the statutory exemption set forth in CEQA Guidelines section 15262. The Project is also exempt pursuant to the categorical exemption set forth in CEQA Guidelines section 15301. Finally, the Project is also exempt from the provisions of CEQA pursuant to the categorical exemption set forth in CEQA Guidelines section 15306.

Reasons why Project is Exempt: As set forth above, the Project involves the short-term exchange(s) of water between Valley and Agency in order to determine the long-term feasibility of distribution of water to Valley and the Agency. The activities involved in the Project require the operation of existing facilities, without an expansion of their use. The water delivered to Valley will not be growth-inducing because it will only be used to improve reliability of supply to its existing water users within Valley.

As set forth in CEQA Guidelines section 15061(b)(3), the commonsense exemption is proper "[w]here it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment." It can be seen with certainty that that there is no possibility that this Project may have a significant effect on the environment because it will have no impacts on the environment.

The Project also qualifies for the statutory exemption set forth in CEQA Guidelines section 15262. That exemption applies to "feasibility or planning studies for possible future actions." By definition, this Project is intended to determine the long-term feasibility of distribution of water to Valley and the Agency. In accordance with CEQA Guidelines section 15262, environmental factors of the Project have been considered and the Project will have no impacts on the environment.

The Project also qualifies for the categorical exemption set forth in CEQA Guidelines section 15301. That exemption applies when a project consist of "the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination." The Project involves the operation of existing facilities with no expansion of use.

Finally, the Project also qualifies for the categorical exemption set forth in CEQA Guidelines section 15306. That exemption applies for "information collection activities" which can include "basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource." The purpose of this Project is to collect information to determine the long-term feasibility of distribution of water to Valley and Agency. Because the Project will not have any impacts on the environment, the Project will not result in a serious or major disturbance to an environmental resource.

Exceptions to Categorical Exemption:

CEQA does not permit a project to use a categorical exemption if an exception to exemption listed in CEQA Guidelines section 15300.2 is applicable. However, for this Project, none of the exceptions to the CEQA categorical exemption set forth in CEQA Guidelines sections 15301 and 15306 are applicable.

Lead Agency Contact Person: Randy Van Gelder, General Manager
Area Code/Telephone: (909) 387-9218

Lead Agency Signature: _____

Date: 11/10/2008

Title: General Manager

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 942360001
(916) 653-5791

MAR 11 2009

Mr. Jeff Davis
General Manager
San Gorgonio Pass Water Agency
1210 Beaumont Avenue
Beaumont, California 92223

Mr. Randy Van Gelder
General Manager
San Bernardino Valley Municipal Water District
Post Office Box 5906
San Bernardino, California 94212-5906

This Letter Agreement is in response to San Gorgonio Pass Water Agency's (SGPWA) letter requesting the Department of Water Resources' (DWR) approval for the exchange of up to 1,000 acre-feet of State Water Project (SWP) Table A water between San Bernardino Valley Municipal Water District (SBVMWD) and SGPWA. SBVMWD will take delivery of, and store within its groundwater basin, up to 1,000 acre-feet of SGPWA's 2008 Table A water by December 31, 2008. SBVMWD will return a portion of its allocation of Table A water by December 31, 2011 to SGPWA as a 1 acre-foot for 1 acre-foot exchange. There will be no monetary payments between SGPWA and SBVMWD for this exchange of Table A water.

DWR will file a Notice of Exemption based on California Environmental Quality Act Guidelines Section 15301 with the following description of this exchange of water: the proposed project is a water management operation using only existing facilities for the exchange of water from one SWP Contractor to another SWP Contractor, the limited term transfer will not support new development or a change in land use, and the transfer is wholly within the SWP place of use. DWR is willing to approve the delivery of up to 1,000 acre-feet of SGPWA's 2008 SWP Table A water to SBVMWD in exchange for the return of a portion of SBVMWD's Table A water subject to the following terms and conditions:

GENERAL PROVISIONS

1. DWR's approval under this Agreement is unique and shall not be considered a precedent for future agreements.

2. This Agreement shall become effective on the date of execution by all the parties and shall provide for the delivery of water to SBVMWD as of December 31, 2008. This Agreement shall terminate upon the delivery of all return water to SGPWA under this Agreement or by December 31, 2011, whichever comes first.

3. The delivery and return of water pursuant to this Agreement shall be contingent on, and subject to, any necessary approvals and shall be governed by the terms and conditions of such approval(s) and any other applicable regulations. SGPWA and SBVMWD shall be responsible for complying with all applicable laws and regulations and for securing any required consent, permit, or order. SGPWA and SBVMWD shall furnish to DWR copies of all approvals and agreements required for the delivery of water under this Agreement.

4. DWR will maintain records documenting the conveyance of up to 1,000 acre-feet of SGPWA's 2008 SWP Table A water to SBVMWD and the return delivery of water to SGPWA. SGPWA and SBVMWD shall certify to the State Water Project Analysis Office (Attention: Chief, Water Contracts Branch, Fax (916) 653-9628) the amount of SGPWA's approved 2008 Table A water delivered to SBVMWD and the return delivery of water from SBVMWD to SGPWA under this Agreement by January 31st of the year following the actual delivery.

WATER DELIVERY FROM SGPWA TO SBVMWD

5. The water delivered to SBVMWD shall be from SGPWA's allocation of 2008 approved Table A water.

6. The delivery of a portion of SGPWA's 2008 Table A water to SBVMWD shall be in accordance with a schedule reviewed and approved by DWR. DWR's approval is dependent upon the times and amounts of the delivery and the overall delivery capability of the SWP. DWR shall not be obligated to deliver the water at times when such delivery would adversely impact SWP operations, facilities, and other SWP contractors.

7. Pursuant to Paragraph 6, SGPWA shall obtain SBVMWD's approval for the water delivery schedule before submitting a schedule to DWR. All water delivery schedules and revisions shall be in accordance with Article 12 of SGPWA's and SBVMWD's respective long-term Water Supply contracts with DWR.

8. Pursuant to Paragraphs 5, 6, and 7, DWR will deliver up to 1,000 acre-feet of SGPWA's 2008 Table A water to SBVMWD's service area turnouts at Reaches EBX-1 (Devil Canyon Powerplant), EBX-2B (Greenspot Pump Station), or EBX-3A (Crafton Hills Pump Station) located within the East Branch Extension of the California Aqueduct by December 31, 2008.
9. SGPWA and SBVMWD shall submit to the State Water Project Analysis Office for approval (Attention: Chief, Water Deliveries Section, FAX (916) 653-9628) a revised 2008 water delivery schedule and shall reference this Agreement, SWPAO #08064.

10. SGPWA and SBVMWD shall submit a weekly schedule to the Southern Field Division (Attention: Chief, Water Operations Section, FAX (661) 294-3651) showing the deliveries to SBVMWD. The schedules shall be submitted by 10:00 a.m. Wednesday for the following two weeks ahead (Monday through Sunday) and shall be concurrently faxed to the following at the State Water Project Operations Control Office:

    Chief, Pre-Scheduling Section at (916) 574-2782
    Chief, Operations Scheduling at (916) 574-2785

RETURN WATER DELIVERED FROM SBVMWD TO SGPWA

11. SBVMWD shall return all water to SGPWA by December 31, 2011. The return water delivered to SGPWA shall be Table A water allocated to SBVMWD in the year water is returned. In the event that all water is not returned to SGPWA by August 31, 2011, DWR, in coordination with SGPWA and SBVMWD, shall expedite the return of water to SGPWA by so scheduling SBVMWD's Table A by December 31, 2011.

12. The return of water under this Agreement by SBVMWD to SGPWA shall be in accordance with a schedule reviewed and approved by DWR. DWR's approval is dependent upon the times and amounts of the delivery and the overall delivery capability of the SWP. DWR shall not be obligated to deliver the water at times when such delivery would adversely impact SWP operations, facilities, or other SWP Contractors.

13. Pursuant to Paragraph 11, SBVMWD shall obtain SGPWA's approval for the proposed delivery schedule, before submitting a schedule to DWR. All water delivery schedules and revisions shall be in accordance with Article 12 of SGPWA's and SBVMWD's long-term Water Supply contracts with DWR.

14. Pursuant to Paragraphs 11 and 12, DWR will deliver a portion of SBVMWD's Table A water scheduled for delivery to SBVMWD's service area to SGPWA's service area turnouts in Reaches EBX-4A (Crafton Hills Pump Station) or EBX-4B (Cherry Valley Pump Station) located within the East Branch Extension of the California Aqueduct by December 31, 2011.

NO IMPACT

15. This Agreement shall not be administered or interpreted in any way that would cause adverse impacts of SWP approved Table A water or of any other SWP approved water allocations, water deliveries, and SWP/CVP operations and facilities. SGPWA and SBVMWD shall be responsible for any adverse impacts, as determined by DWR, that may result from the exchange of water.

SWP ALLOCATION

16. Water returned to SGPWA pursuant to this Agreement shall not be considered by DWR in the determination of approved annual Table A deliveries to or allocation of other SWP water to SGPWA under Article 18 of SGPWA's long-term Water Supply contract with DWR.

CHARGES

17. SGPWA and SBVMWD shall pay the following charges, including all future adjustments, which shall be calculated in the same manner as charges are calculated for SWP Table A deliveries and shall be in accordance with the provisions of SGPWA's and SBVMWD's long-term Water Supply contracts with DWR. Charges shall be determined for the year the water is delivered, and the year the water is returned.

    a. When a portion of SGPWA's approved 2008 Table A water is delivered to SBVMWD, SBVMWD shall pay to DWR the charges associated with the delivery of the water from the Delta to the point of delivery at SBVMWD's turnouts at Reaches EBX-1 (Devil Canyon Powerplant), EBX-2B (Greenspot Pump Station), or EBX-3A (Crafton Hills Pump Station) located within the East Branch Extension of the California Aqueduct. The charges associated with such delivery will be the 2008 Variable Operation, Maintenance, Power, and Replacement components of the Transportation Charge and the 2008 Off-Aqueduct Power Facilities Cost for each acre-foot of water delivered.

b. In any year that a portion of SBVMWD's future Table A water is returned to SGPWA pursuant to this Agreement, SGPWA shall pay to DWR the charges associated with the delivery of the return water from the Delta to SGPWA's turnouts at Reaches EBX-4A (Crafton Hills Pump Station) or EBX-4B (Cherry Valley Pump Station) located within the East Branch Extension of the California Aqueduct. The charges associated with the return water will be the Variable Operation, Maintenance, Power, and Replacement components of the Transportation charges and the Off-Aqueduct Power Facilities Cost for each acre-foot of water delivered in effect for the year in which the water is returned to SGPWA.

18. In addition to the charges identified above, SGPWA and SBVMWD agree to pay to DWR any additional identified demonstrable increase in costs that would otherwise be borne by the SWP contractors not signatory to this Agreement or by DWR, as a result of activities pursuant to this Agreement.

19. Payment terms shall be in accordance with SGPWA's and SBVMWD's long-term Water Supply contracts with DWR.

LIABILITY

20. Responsibility for water delivered pursuant to this Agreement shall be governed by Article 13 of SGPWA's and SBVMWD's long-term Water Supply contracts, with responsibilities under the terms of that article shifting from DWR to SGPWA and SBVMWD when the water passes through their respective turnouts.

21. In the event of a claim of liability against DWR or its Directors, officers, or employees, jointly or severally, that arises as a result of this Letter Agreement, SGPWA and SBVMWD shall defend, indemnify, and hold DWR and any of its Directors, officers, employees harmless from any such claim, except to the extent that such claim arises from the sole negligence or willful misconduct of DWR.

EXECUTION

22. This Letter Agreement may be executed in counterpart. The parties agree to accept facsimile signatures as original signatures. The Agreement shall take effect as soon as all parties have signed.

23. Immediately after execution, SGPWA and SGPWA shall transmit a copy of the executed Letter Agreement by facsimile to Robert Cooke, Chief, State Water Project Analysis Office at (916) 653-9628 and to each other at:
SGPWA: (951) 845-0218
SBVMWD: (909) 387-9247

If SGPWA or SBVMWD needs a Board of Directors' approval of this Letter Agreement, that party shall send a facsimile of the board approval to the other two parties. If you have any questions or need additional information, please contact me at (916) 653-4313 and refer to SWPAO #08064.

Sincerely,

Robert B. Cooke

Robert B. Cooke, Chief
State Water Project Analysis Office

ACCEPTED:

SAN GORGONIO PASS
WATER AGENCY

Jeffrey W Davis
Signature

General Manager
Title

4-30-09
Date

SAN BERNARDINO VALLEY
MUNICIPAL WATER DISTRICT

Signature

General Mgr
Title

5/14/2009
Date

cc: Mr. Terry Erlewine
General Manager
State Water Contractors
1121 L Street, Suite 1050
Sacramento, California 95814

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

CRESTLINE-LAKE ARROWHEAD WATER AGENCY

DEMONSTRATION PROJECT

WATER EXCHANGE AGREEMENT

RECITALS

A. San Bernardino Valley Municipal Water District ("VALLEY") is a public agency organized pursuant to the California Municipal Water District Law of 1911 (Water Code §§ 71000 et seq.) with broad powers to acquire and sell water. VALLEY has a Water Supply Contract with the California Department of Water Resources ("DWR") that provides VALLEY with a Table A Amount of up to 102,600 acre-feet per annum of water ("AFA") from the State Water Project ("SWP").

B. Crestline-Lake Arrowhead Water Agency ("AGENCY") is a public agency organized in accordance with Crestline-Lake Arrowhead Water Agency Law (Water Code Appendix §§ 104-1 et seq.) with broad powers to acquire and sell water. AGENCY has a Water Supply Contract with DWR that provides it with a Table A Amount of 5,800 AFA.

C. VALLEY and AGENCY intend by this Agreement to implement a Demonstration Project to exchange water for an initial period of one year to determine the long-term feasibility, including evaluation of benefits, costs, and beneficial distribution of supplemental water to VALLEY and AGENCY.

D. VALLEY and AGENCY desire to enter into this Water Exchange Agreement whereby VALLEY will acquire up to 1,000 AF of SWP water from AGENCY ("INITIAL DELIVERY") in exchange for delivery of a like amount of water from VALLEY to AGENCY ("EXCHANGE WATER") within three years of the INITIAL DELIVERY ("RETURN PERIOD").

E. VALLEY has a need for the INITIAL DELIVERY before December 31, 2008, to improve reliability of supply to existing water users within VALLEY.

F. AGENCY has up to 1,000 AF of SWP water available from its 2008 allocation of SWP water for the INITIAL DELIVERY provided it can receive the EXCHANGE WATER from VALLEY within three years to enable it to meet anticipated demands for water within its service area.

SBVMWD LEGAL
DOCUMENT **2206**

IN CONSIDERATION OF THE MUTUAL PROMISES of the Parties as set forth herein, it is agreed as follows:

1. **Description of the Exchange and Procedures.**

On or before December 1, 2008, AGENCY will in writing request the California Department of Water Resources ("DWR") to deliver up to 1,000 AF of the AGENCY's SWP Table A Amount to VALLEY ("INITIAL DELIVERY") at its designated point of delivery. A copy of such written request shall be delivered to VALLEY. After written confirmation to AGENCY from VALLEY of such INITIAL DELIVERY, at the written request of AGENCY, VALLEY shall deliver a like amount of SWP water or water of equal or better quality ("EXCHANGE WATER") to AGENCY, in whole or in part as specified in such request. AGENCY shall not make such request any earlier than January, 2010. VALLEY and AGENCY shall meet and confer in advance of such delivery date to schedule the delivery of the EXCHANGE WATER over the Return Period. VALLEY shall complete delivery of the EXCHANGE WATER no later than December, 2011. VALLEY's obligation to deliver EXCHANGE WATER shall be from any source provided it is equal to or better than the water quality standards established by DWR for the State Water Project. If AGENCY requests delivery of EXCHANGE WATER in a year which DWR has declared to be critically dry, VALLEY and AGENCY agree to confer in good faith to adjust the quantity of EXCHANGE WATER to be delivered in that year so as to minimize adverse impacts on the ability of both parties to satisfy the needs of their respective customers. AGENCY'S obligation for the INITIAL DELIVERY shall be subject to the availability of water from the SWP.

2. **Points of Delivery and Measurement.**

a. VALLEY. The point of delivery and measurement of the Initial Water from AGENCY shall be from DWR at Silverwood Lake.

b. AGENCY. The point of delivery and measurement of the Exchange Water from VALLEY to AGENCY shall be from VALLEY at Silverwood Lake.

3. **Charges.**

a. Neither VALLEY nor AGENCY shall charge any costs to the other for use of either agency's facilities to the point of delivery.

b. VALLEY shall be responsible for all costs of, and entitled to all power credits generated by, the INITIAL DELIVERY downstream

from the point of delivery. AGENCY shall be responsible for all delivery costs of the EXCHANGE WATER.

4. **Conditions Precedent and Covenants.**

4.1 **DWR Approval.** No provisions of this Agreement requiring DWR approval shall become operative until DWR approves of those provisions. VALLEY and AGENCY shall use their best efforts to promptly obtain such approvals.

4.2 **State Water Contractors.** VALLEY and AGENCY agree they will each with due diligence and in good faith seek to obtain the support and approval of this Agreement by the State Water Contractors and request DWR approve the exchange of water as set forth herein.

5. **Future Banking and Conjunctive Use Projects.**

VALLEY and AGENCY believe that water exchange agreements and coordinated deliveries could lead to improved reliability and more efficient utilization of their respective supplies to meet the needs of their respective water users. In that regard, VALLEY and AGENCY agree to work together in good faith and with due diligence to determine the technical and financial feasibility and implementation of such arrangements subject to compliance with applicable laws, including California Environmental Quality Act.

6. **Notices.**

All written notices required to be given pursuant to the terms of this Agreement shall be either (i) personally delivered, (ii) deposited in the United States express mail or first class mail, (iii) delivered by overnight courier service, or (iv) delivered by facsimile transmission, provided that the original of such notice is sent by certified United States mail, postage prepaid, no later than one (l) business day following such facsimile transmission. All such notices shall be deemed delivered upon actual receipt (or upon first attempt at delivery pursuant to the methods specified in clauses (i), (ii) or (iii) above if the intended recipient refuses to accept delivery). All such notices shall be delivered to the following addresses or to such other address as the receiving party may from time to time specify by written notice to the other party:

VALLEY:

San Bernardino Valley Municipal Water District
380 East Vanderbilt Way
P.O. Box 5906
San Bernardino, CA 92412-5906

Attention: General Manager
Telephone: (909) 387-9211
Facsimile: (909) 387-9247

AGENCY:

Crestline-Lake Arrowhead Water Agency
24116 Crest Forest Drive
P.O. Box 3880
Crestline, CA 92325-3880

Attention: General Manager
Telephone: (909) 338-1779
Fax: (909) 338-3686

7. **Miscellaneous.**

7.1 **No Assignment.** No party shall assign or otherwise transfer its rights or obligations under this Agreement without the prior written consent of the other party.

7.2 **Successors and Permitted Assigns.** All covenants and agreements contained in this Agreement by or on behalf of any of the parties shall bind and inure to the benefit of their respective successors and permitted assigns, wither so expressed or not.

7.3 **No Modification of Existing Contracts.** This Agreement shall not be interpreted to modify the terms or conditions of the water supply contracts between the DWR and AGENCY and between DWR and VALLEY, or to modify the terms or conditions of any other water purchase or exchange agreements between AGENCY and VALLEY.

7.4 **Governing Law/Venue.** This Agreement shall be construed and enforced in accordance with the laws of the State of California. Venue for any actions brought regarding this Agreement shall be in the County of San Bernardino, provided that, in accordance with the provisions of the

Code of Civil Procedure Section 394, a disinterested judge from a neutral county is assigned to hear such action and all proceedings in connection therewith.

7.5 **Ministerial Actions.** Due to increasing State-wide demands for water, water exchanges, water storage, banking and recovery, and various water quality issues throughout the State, the Parties agree that this Project is unique and cannot be duplicated and there is not a plain, speedy, and adequate remedy at law for VALLEY or AGENCY should either refuse or fail to perform their respective obligations as set forth in this Agreement. Consequently, VALLEY and AGENCY agree that the terms of this Agreement are enforceable by writ of mandate and specific performance.

7.6 **Counterparts.** This Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which, taken together, shall constitute one and the same instrument. Signatures sent by facsimile shall be deemed originals and treated in all respects as originals.

7.7 **Further Action.** The parties agree to and shall take such further action and execute such additional documents as may be reasonably required to effectuate the terms and conditions of this Agreement and to the extent consistent with terms thereof.

7.8 **Interpretation.** This Agreement has been jointly negotiated and drafted. The language of this Agreement shall be construed as whole according to its fair meaning and without regard to or aid of Civil Code Section 1654 or similar judicial rules of construction. Each party acknowledges that it has had the opportunity to seek the advice of experts and legal counsel prior to executing this Agreement and that it is fully aware of and understands all of its terms and the legal consequences thereof. The headings used in this Agreement are for reference only and shall not affect the construction of this Agreement.

DATE: 11/7/2008

SAN BERNARDINO VALLEY
MUNICIPAL WATER DISTRICT

By _____

DATE: 11/7/08

CRESTLINE-LAKE ARROWHEAD
WATER AGENCY

By Roxanne M. Holmes

NOTICE OF EXEMPTION

(California Environmental Quality Act)

To: Clerk of the Board of Supervisors
County of San Bernardino
385 N. Arrowhead Ave., 2nd Floor
San Bernardino, CA 92415

Office of Planning and Research
1400 Tenth Street, Room 222
Sacramento, CA 95814
Attn: State Clearinghouse

From: San Bernardino Valley Municipal Water District
380 East Vanderbilt Way
P.O. Box 5906
San Bernardino, CA 92412-5906
Phone: (909) 387-9211

Project Title: The Project entails the approval of a Water Exchange Agreement, which allows for the exchange of 1,000 acre-feet ("AF") of State Water Project ("SWP") water from Crestline-Lake Arrowhead Water Agency ("Agency") to San Bernardino Valley Municipal Water District ("Valley") and vice versa.

Project Location: Within the service areas of Crestline-Lake Arrowhead Watery Agency, see Map attached as Exhibit "1," and San Bernardino Valley Municipal Water District, see Map attached as Exhibit "2," in the County of San Bernardino.

Description of Nature, Purpose, and Beneficiaries of Project: On November 5, 2008, the Board of Directors of Valley approved the execution of the Water Exchange Agreement ("Agreement") with Agency. This Agreement authorizes Valley to acquire up to 1,000 AF of SWP water from Agency, and requires Agency to submit a written request to the California Department of Water Resources on or before December 1, 2008, to deliver up to 1,000 AF of Agency's share of SWP Table A water to Valley. In exchange for delivery of that water, Valley will deliver a like amount of water of equal or better quality to Agency within three years of the initial delivery of water to Valley. This same Agreement was approved by Agency on November 6, 2008.

Name of Public Agency Approving Project: San Bernardino Valley Municipal Water District

Exempt Status (check one):

___ Ministerial Action.
___ Declared Emergency
___ Emergency Project
_X_ Categorical Exemption (State CEQA Guidelines § 15301 [Existing Facilities]; State CEQA Guidelines §15304 [Minor Alterations to Land, Water, or Vegetation].)
_X_ Statutory Exemption (State CEQA Guidelines § 15282(u) [Temporary Transfer or Exchange of Water or Water Rights].)
_X_ Other The Project is also exempt under State CEQA Guidelines section 15061(b)(3) because it can be seen with certainty that there is no possibility the Project may have a significant impact on the environment. The Project is merely an exchange of water. No physical facilities will be constructed to produce or transport water because all such required facilities already exist. In addition, no new water production or transportation capacity is created by the Project.

Reasons why project is exempt: The water exchange approved by Valley will entail no change in type of use or expansion of use, but consist merely of the continued operation of existing facilities and the use of those facilities to temporarily transport water to a different location. State CEQA Guidelines section 15301 provides that environmental review is not required for "the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination." In addition, the exchange of water is a minor, temporary alteration to the condition of water that does not require the removal of any trees and thus is also exempt pursuant to State CEQA Guidelines section 15304 as "minor public or private alterations in the condition of land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees." The Project's proposed exchange of water is temporary and thus is also exempt pursuant to the State CEQA Guidelines, section 15282(u) exemption for the temporary transfer of water or water rights. Because the water exchange will merely temporarily change the location in which water is used and will be delivered via existing facilities, there is no possibility the Project may have a significant impact on the environment. Accordingly, the Agreement and the water exchange that it authorizes are exempt from environmental review under CEQA. Moreover, the water transfer does not involve cumulative impacts, potentially significant impacts, unusually sensitive environments, or any other unique or unusual environmental impacts that might merit environmental review.

Contact Person & Telephone Number: Randy Van Gelder, General Manager
Phone: (909) 387-9218

11/7/2008
Date

for San Bernardino Valley Municipal Water District

RVPUB\755560.1

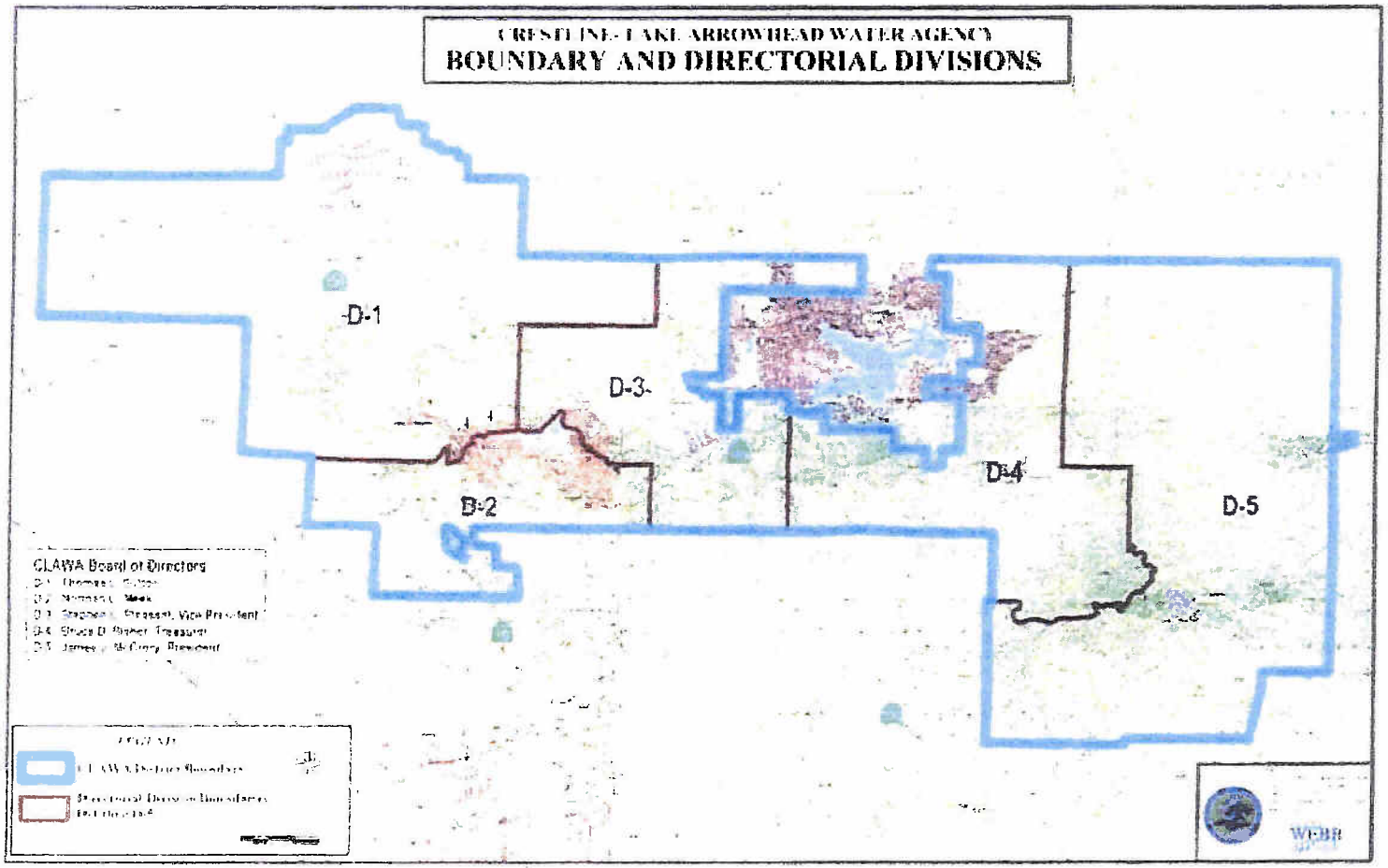
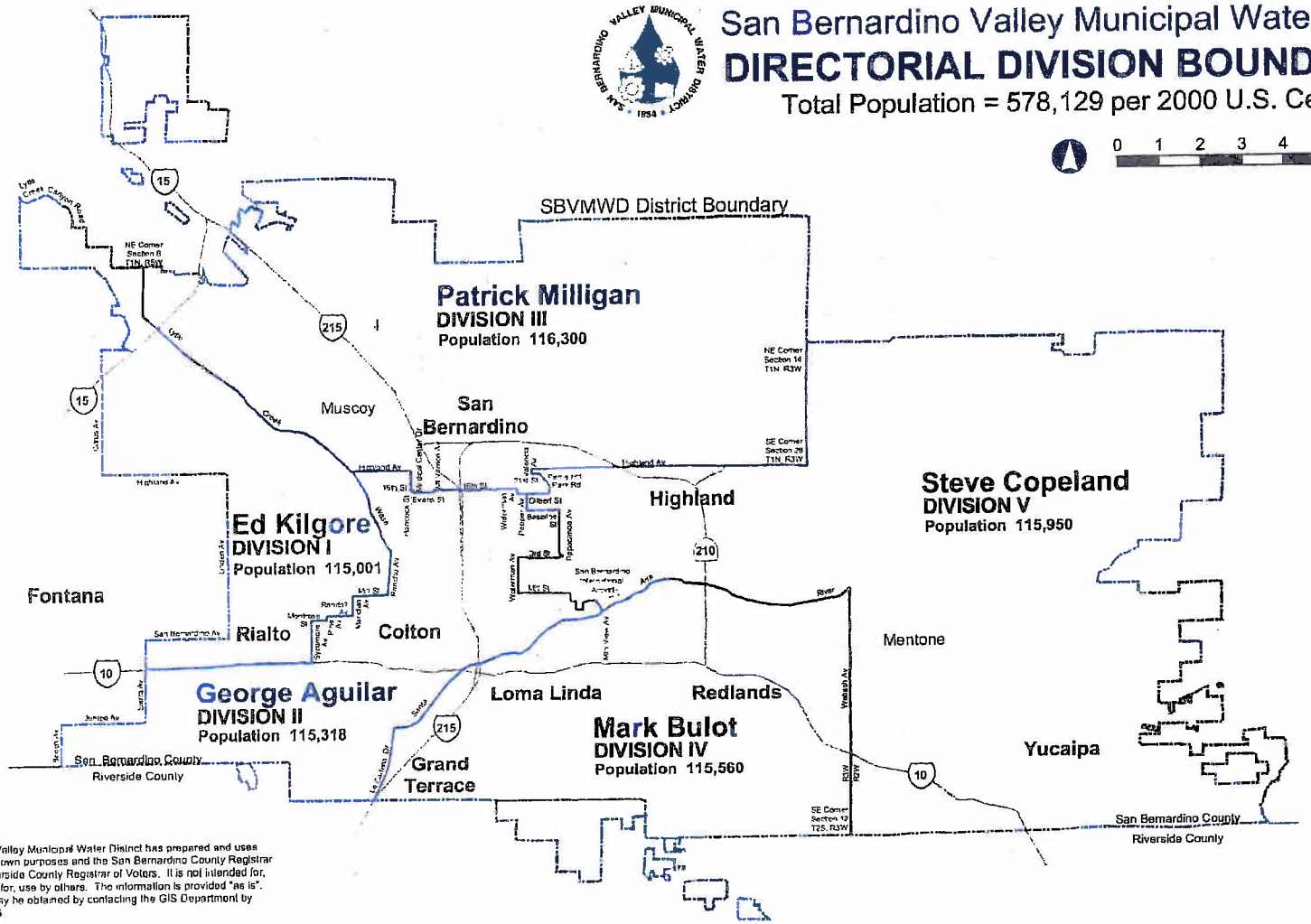

CRESTLINE-LAKE ARROWHEAD WATER AGENCY
BOUNDARY AND DIRECTORIAL DIVISIONS
D-1
D-2
D-3
D-4
D-5
CLAWA Board of Directors

Exhibit 1

San Bernardino Valley Municipal Water District
DIRECTORIAL DIVISION BOUNDARIES

Total Population = 578,129 per 2000 U.S. Census



The San Bernardino Valley Municipal Water District has prepared and uses this information for its own purposes and the San Bernardino County Registrar of Voters and the Riverside County Registrar of Voters. It is not intended for, nor may it be suitable for, use by others. The information is provided "as is". Further information may be obtained by contacting the GIS Department by calling (909) 387-9275

GIS Dept. August, 2004

Exhibit 2

STATE OF CALIFORNIA -- THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 942360001
(916) 653-5791

DEC 17 2008

Ms. Roxanne Holmes
General Manager
Crestline-Lake Arrowhead Water Agency
Post Office Box 3880
Crestline, California 92325

Mr. Randy Van Gelder
General Manager
San Bernardino Valley Municipal Water District
Post Office Box 5906
San Bernardino, California 94212-5906

This Letter Agreement is in response to Crestline-Lake Arrowhead Water Agency's (CLAWA) letter requesting the Department of Water Resources (DWR) approval for the exchange of up to 1,000 acre-feet of State Water Project (SWP) Table A water between San Bernardino Valley Municipal Water District (SBVMWD) and CLAWA. SBVMWD will take delivery of, and store within its groundwater basin, up to 1,000 acre-feet of CLAWA's 2008 Table A water by December 31, 2008. SBVMWD will return a portion of its allocation of Table A water by December 31, 2011 to CLAWA as a 1 acre-foot for 1 acre-foot exchange. There will be no monetary payments between CLAWA and SBVMWD for this exchange of Table A water.

DWR will file a Notice of Exemption based on California Environmental Quality Act Guidelines Section 15301 with the following description of this exchange of water: the proposed project is a water management operation using only existing facilities for the exchange of water from one SWP Contractor to another SWP Contractor, the limited term transfer will not support new development or a change in land use, and the transfer is wholly within the SWP place of use. DWR is willing to approve the delivery of up to 1,000 acre-feet of CLAWA's 2008 SWP Table A water to SBVMWD in exchange for the return of a portion of SBVMWD's Table A water subject to the following terms and conditions:

GENERAL PROVISIONS

1. DWR's approval under this Agreement is unique and shall not be considered a precedent for future agreements.

2. This Agreement shall become effective on the date of execution by all the parties and shall provide for the delivery of water to SBVMWD as of December 31, 2008. This Agreement shall terminate upon the delivery of all return water to CLAWA under this Agreement or by December 31, 2011, whichever comes first.

3. The delivery and return of water pursuant to this Agreement shall be contingent on, and subject to, any necessary approvals and shall be governed by the terms and conditions of such approval(s) and any other applicable regulations. CLAWA and SBVMWD shall be responsible for complying with all applicable laws and regulations and for securing any required consent, permit, or order. CLAWA and SBVMWD shall furnish to DWR copies of all approvals and agreements required for the delivery of water under this Agreement.

4. DWR will maintain records documenting the conveyance of up to 1,000 acre-feet of CLAWA's 2008 SWP Table A water to SBVMWD and the return delivery of water to CLAWA. CLAWA and SBVMWD shall certify to the State Water Project Analysis Office (Attention: Chief, Water Contracts Branch, Fax (916) 653-9628) the amount of CLAWA's approved 2008 Table A water delivered to SBVMWD and the return delivery of water from SBVMWD to CLAWA under this Agreement by January 31st of the year following the actual delivery.

WATER DELIVERY FROM CLAWA TO SBVMWD

5. The water delivered to SBVMWD shall be from CLAWA's allocation of 2008 approved Table A water.

6. The delivery of a portion of CLAWA's 2008 Table A water to SBVMWD shall be in accordance with a schedule reviewed and approved by DWR. DWR's approval is dependent upon the times and amounts of the delivery and the overall delivery capability of the SWP. DWR shall not be obligated to deliver the water at times when such delivery would adversely impact SWP operations, facilities, and other SWP contractors.

7. Pursuant to Paragraph 6, CLAWA shall obtain SBVMWD's approval for the water delivery schedule before submitting a schedule to DWR. All water delivery schedules and revisions shall be in accordance with Article 12 of CLAWA's and SBVMWD's respective long-term Water Supply contracts with DWR.

8. Pursuant to Paragraphs 5, 6, and 7, DWR will deliver up to 1,000 acre-feet of CLAWA's 2008 Table A water to SBVMWD's service area, Reach 26A of the California Aqueduct by December 31, 2008.

9. CLAWA and SBVMWD shall submit to the State Water Project Analysis Office for approval (Attention: Chief, Water Deliveries Section, FAX (916) 653-9628) a revised 2008 water delivery schedule and shall reference this Agreement, SWPAO #08063.

10. CLAWA and SBVMWD shall submit a weekly schedule to the Southern Field Division (Attention: Chief, Water Operations Section, FAX (661) 294-3651) showing the deliveries to SBVMWD. The schedules shall be submitted by 10:00 a.m. Wednesday for the following two weeks ahead (Monday through Sunday) and shall be concurrently faxed to the following at the State Water Project Operations Control Office:

    Chief, Pre-Scheduling Section at (916) 574-2782
    Chief, Operations Scheduling at (916) 574-2785

RETURN WATER DELIVERED FROM SBVMWD TO CLAWA

11. SBVMWD shall return all water to CLAWA by December 31, 2011. The return water delivered to CLAWA shall be Table A water allocated to SBVMWD in the year water is returned. In the event that all water is not returned to CLAWA by August 31, 2011, DWR, in coordination with CLAWA and SBVMWD, shall expedite the return of water to CLAWA by so scheduling SBVMWD's Table A by December 31, 2011.

12. The return of water under this Agreement by SBVMWD to CLAWA shall be in accordance with a schedule reviewed and approved by DWR. DWR's approval is dependent upon the times and amounts of the delivery and the overall delivery capability of the SWP. DWR shall not be obligated to deliver the water at times when such delivery would adversely impact SWP operations, facilities, or other SWP Contractors.

13. Pursuant to Paragraph 11, SBVMWD shall obtain CLAWA's approval for the proposed delivery schedule, before submitting a schedule to DWR. All water delivery schedules and revisions shall be in accordance with Article 12 of CLAWA's and SBVMWD's long-term Water Supply contracts with DWR.

14. Pursuant to Paragraphs 11 and 12, DWR will deliver a portion of SBVMWD's Table A water scheduled for delivery to SBVMWD's service area to CLAWA's service area in Reach 24 of the California Aqueduct.

NO IMPACT

15. This Agreement shall not be administered or interpreted in any way that would cause adverse impacts of SWP approved Table A water or of any other SWP approved water allocations, water deliveries, and SWP/CVP operations and facilities. CLAWA and SBVMWD shall be responsible for any adverse impacts that may result from the exchange of water as determined by DWR.

SWP ALLOCATION

16. Water returned to CLAWA pursuant to this Agreement shall not be considered by DWR in the determination of approved annual Table A deliveries to or allocation of other SWP water to CLAWA under Article 18 of CLAWA's long-term Water Supply contract with DWR.

CHARGES

17. CLAWA and SBVMWD shall pay the following charges, including all future adjustments, which shall be calculated in the same manner as charges are calculated for SWP Table A deliveries and shall be in accordance with the provisions of CLAWA's and SBVMWD's long-term Water Supply contracts with DWR. Charges shall be determined for the year the water is delivered, and the year the water is returned.
    a. When a portion of CLAWA's approved 2008 Table A water is delivered to SBVMWD, SBVMWD shall pay to DWR the charges associated with the delivery of the water from the Delta to the point of delivery at SBVMWD's turnouts on the California Aqueduct, Reach 26A. The charges associated with such delivery will be the 2008 Variable Operation, Maintenance, Power, and Replacement components of the Transportation Charge and the 2008 Off-Aqueduct Power Facilities Cost for each acre-foot of water delivered.

    b. In any year that a portion of SBVMWD's future Table A water is returned to CLAWA pursuant to this Agreement, CLAWA shall pay to DWR the charges associated with the delivery of the return water from the Delta to CLAWA's turnouts in Reach 24 of the California Aqueduct. The charges associated with the return water will be the Variable Operation, Maintenance, Power and Replacement components of the Transportation charges and the Off-Aqueduct Power Facilities Cost for each acre-foot of water delivered in effect for the year in which the water is returned to CLAWA.

18. In addition to the charges identified above, CLAWA and SBVMWD agree to pay to DWR any additional identified demonstrable increase in costs that would otherwise be borne by the SWP contractors not signatory to this Agreement or by DWR, as a result of activities pursuant to this Agreement.

19. Payment terms shall be in accordance with CLAWA's and SBVMWD's long-term Water Supply contracts with DWR.

LIABILITY

20. Responsibility for water delivered pursuant to this Agreement shall be governed by Article 13 of CLAWA's and SBVMWD's long-term Water Supply contracts, with responsibilities under the terms of that article shifting from DWR to CLAWA and SBVMWD when the water passes through their respective turnouts.

21. In the event of a claim of liability against DWR or its Directors, officers, or employees, jointly or severally, that arises as a result of this Letter Agreement, CLAWA and SBVMWD shall defend, indemnify, and hold DWR and any of its Directors, officers, employees harmless from any such claim, except to the extent that such claim arises from the sole negligence or willful misconduct of DWR.

EXECUTION

22. This Letter Agreement may be executed in counterpart. The parties agree to accept facsimile signatures as original signatures. The Agreement shall take effect as soon as all parties have signed.

23. Immediately after execution, SBVMWD and CLAWA shall transmit a copy of the executed Letter Agreement by facsimile to Robert Cooke, Chief, State Water Project Analysis Office at (916) 653-9628 and to each other at.
    CLAWA: (909) 338-3686
    SBVMWD: (909) 387-9247

If CLAWA or SBVMWD needs a Board of Directors' approval of this Letter Agreement, that party shall send a facsimile of the board approval to the other two parties. If you have any questions or need additional information, please contact me at (916) 653-4313 and refer to SWPAO #08063.

Sincerely,

Robert B Cooke

Robert B. Cooke, Chief
State Water Project Analysis Office

ACCEPTED:

CRESTLINE-LAKE ARROWHEAD WATER DISTRICT

_____
Signature

_____
Title

_____
Date

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

_____
Signature

General Manager
Title

12/22/2008
Date

cc: Mr. Terry Erlewine
General Manager
State Water Contractors
1121 L Street, Suite 1050
Sacramento, California 95814

ACCEPTED:

CRESTLINE-LAKE ARROWHEAD WATER DISTRICT

Roxanne M. Holmes
Signature

General Manager
Title

12/22/08
Date

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

Signature

Title

Date

cc: Mr. Terry Erlewine
General Manager
State Water Contractors
1121 L Street, Suite 1050
Sacramento, California 95814

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

CRESTLINE-LAKE ARROWHEAD WATER AGENCY

WATER EXCHANGE AGREEMENT AND AMENDMENT OF DEMONSTRATION PROJECT

RECITALS

A. On November 7, 2008, San Bernardino Valley Municipal Water District ("Valley") and Crestline-Lake Arrowhead Water Agency ("Agency") entered into an agreement titled "Demonstration Project Water Exchange Agreement" (the "2008 Exchange Agreement"). Pursuant to the terms of the 2008 Exchange Agreement, the Agency arranged for the delivery of 1,000 acre-feet of water from the Agency's State Water Project Table A allocation in exchange for Valley's agreement to allow the Agency to take back a total of 1,000 acre-feet of water from Valley's State Water Project Table A allocations in 2010 and/or 2011 (the "2008 Exchange Arrangement").

B. The Agency and Valley wish to amend the 2008 Exchange Agreement to allow the Agency to take back a total of 1,000 acre-feet of water from Valley's State Water Project Table A allocations in any year or years between 2010 and 2018, inclusive, subject to such reductions in the quantity of water to be returned to the Agency due to high groundwater conditions within Valley's service area as are hereinafter provided.

C. In addition, the Agency and Valley wish to provide for the delivery to Valley of 1,000 acre-feet of water from the Agency's State Water Project Table A allocation in 2009, in exchange for Valley's agreement to allow the Agency to take back a total of 650 acre-feet of water from Valley's State Water Project allocations in any year or years between 2010 and 2018, inclusive, subject to such reductions in the quantity of water to be returned to the Agency due to high groundwater conditions within Valley's service area as are hereinafter provided (the "2009 Exchange Arrangement").

D. The purpose of this Agreement is to amend the terms of the 2008 Exchange Agreement and to set forth the terms of the 2009 Exchange Arrangement.

IN CONSIDERATION OF THE MUTUAL PROMISES set forth herein, the Agency and Valley agree as follows:

1. **Amendment of 2008 Exchange Agreement.**

(a) Return of Exchange Water. The sixth sentence of Section 1 of the 2008 Exchange Agreement, titled "Description of the Exchange and Procedures" is hereby amended to provide as follows:

"VALLEY shall complete delivery of the EXCHANGE WATER no later than December 2018."

In addition, within Paragraphs D and F of the Recitals in the 2008 Exchange Agreement, the term "three years" is hereby amended to read "ten years."

(b) Quantity of Exchange Water. The 2008 Exchange Agreement is further amended to provide that the quantity of "Exchange Water" (as defined therein) to be returned to the Agency during the "Return Period" (as also defined therein) shall be subject to the same reductions as may be applied to the return of water under the 2009 Exchange Arrangement, due to high groundwater conditions within Valley's service area, as provided in Section 2(c) of this Agreement.

2. **2009 Exchange Arrangement.**

(a) Initial Delivery to Valley. Prior to December 1, 2009, Agency will, in writing, request the California Department of Water Resources ("DWR") to deliver 1,000 acre-feet of the Agency's 2009 State Water Project Table A allocation to Valley, at Silverwood Lake. A copy of such written request shall be delivered to Valley.

(b) Return of Exchange Water. After written confirmation that 1,000 acre-feet of water from the Agency's State Water Project Table A allocation in 2009 has been delivered to Valley, Valley shall thereafter deliver to the Agency, at Silverwood Lake, up to a total of 650 acre-feet of water when requested by the Agency, between the years 2010 and 2018, inclusive (the "Exchange Water"). The Exchange Water shall be State Water Project water or water of equal or better quality. If the Agency requests delivery of Exchange Water in a year which DWR has declared to be critically dry, the Agency and Valley agree to confer in good faith to adjust the quantity of Exchange Water to be delivered in that year so as to minimize adverse impacts on the ability of both parties to satisfy the needs of their respective customers.

(c) Quantity of Exchange Water To Be Returned. As of the date of this Agreement, the total quantity of 2008 Exchange Water and 2009 Exchange Water to be returned to the Agency pursuant to the 2008

Exchange Agreement and the 2009 Exchange Arrangement is 1,650 acre-feet. Because water within the San Bernardino Valley Groundwater Basin is lost from the Basin during high groundwater conditions resulting from high precipitation, the Agency and Valley agree that during any year from 2010 to 2018, inclusive, that the Basin Technical Advisory Committee ("BTAC") makes a determination that high groundwater conditions exist in the San Bernardino Basin Area, the balance of the 2008 Exchange Water and the 2009 Exchange Water which has not been returned to the Agency prior to that year shall each be reduced by an amount equal to 10% of the then existing quantity of 2008 Exchange Water and the 2009 Exchange Water not yet returned, for each such year that a declaration of high groundwater conditions is made, and the parties shall jointly advise DWR in writing of such reduction. The declaration of high groundwater conditions shall be made pursuant to the protocol attached hereto as Exhibit "A" as amended by Valley from time to time.

(d) Charges. The Agency shall be responsible for all costs of delivering 1,000 acre-feet of State Water Project to Valley at Silverwood Lake in 2009. Valley shall be responsible for all costs of delivering up to 650 acre-feet of Exchange Water to the Agency at Silverwood Lake, in the year that such water is delivered, pursuant to the terms of this Agreement. The charges for the Agency's delivery of water to Valley, and Valley's delivery of Exchange Water back to the Agency, pursuant to the 2008 Exchange Arrangement shall be as set forth in the 2008 Exchange Agreement. For purposes of this paragraph, Exchange Water returned to the Agency shall be credited first to the exchange obligations set forth in the 2008 Exchange Agreement, until such Exchange Water is fully depleted, and then shall be credited to the exchange obligations created by the 2009 Exchange Arrangement.

3. **Conditions Precedent and Covenants.**

(a) DWR Approval. No provisions of this Agreement requiring DWR approval shall become operative until DWR approves of those provisions. The Agency and Valley shall use their best efforts to promptly obtain such approvals.

(b) State Water Contractors. The Agency and Valley agree that they will each with due diligence and good faith seek to obtain the support and approval of this Agreement by the State Water Contractors.

4. **Notices.**

All written notices required to be given pursuant to the terms of this Agreement shall be (i) personally delivered, (ii) deposited in the United States express mail or first-class mail, (iii) delivered by overnight courier service or (iv) delivered by facsimile transmission, provided that the

original of such notice is sent by certified United States mail, postage prepaid, no later than one business day following such facsimile transmission. All such notices shall be deemed delivered upon actual receipt or upon first attempt at delivery pursuant to the methods specified herein if the intended recipient refuses to accept delivery. All such notices shall be delivered to the following addresses or to such other address as the receiving party may from time to time specify by written notice to the other party:

AGENCY:

Crestline-Lake Arrowhead Water Agency
24116 Crest Forest Drive
P.O. Box 3880
Crestline, CA 92325-3880

Attention: General Manager
Telephone: (909) 338-1779
Facsimile: (909) 338-3686

VALLEY:

San Bernardino Valley Municipal Water District
380 East Vanderbilt Way
P.O. Box 5906
San Bernardino, CA 92412-5906

Attention: General Manager
Telephone: (909) 387-9211
Facsimile: (909) 387-9247

5. **Miscellaneous.**

(a) No Assignment. No party shall assign or otherwise transfer its rights or obligations under this Agreement without the prior written consent of the other party.

(b) Successors and Permitted Assigns. All covenants and agreements contained in this Agreement by or on behalf of any of the parties shall bind and inure to the benefit of their respective successors and permitted assigns, whether so expressed or not.

(c) No Modification of Existing Contracts. This Agreement shall not be interpreted to modify the terms or conditions of the water supply contracts between the DWR and the Agency, and between DWR and Valley.

(d) Governing Law/Venue. This Agreement shall be construed and enforced in accordance with the laws of the State of California. Venue for any actions brought regarding this Agreement shall be in the County of San Bernardino, provided that, in accordance with the provisions of the Code of Civil Procedure Section 394, a disinterested judge from a neutral county is assigned to hear such action and all such proceedings in connection therewith.

(e) Ministerial Actions. Due to increasing State-wide demands for water, water exchanges, water storage, banking and recovery, and various water quality issues throughout the State, the parties agree that this project is unique and cannot be duplicated and there is not a plain, speedy, and adequate remedy at law for the Agency or Valley should either refuse or fail to perform their respective obligations as set forth in this Agreement. Consequently, the Agency and Valley agree that the terms of this Agreement are enforceable by a writ of mandate and specific performance.

(f) Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which, taken together, shall constitute one and the same instrument. Signatures sent by facsimile shall be deemed originals and treated in all respects as originals.

(g) Further Action. The parties agree to and shall take such further action and execute such additional documents as may be reasonably required to effectuate the terms and conditions of this Agreement and to the extent consistent with the terms thereof.

(h) Interpretation. This Agreement has been jointly negotiated and drafted. The language of this Agreement shall be construed as a whole according to its fair meaning and without regard to or aid of Civil Code Section 1654 or similar judicial rules of construction. Each party acknowledges that it has had the opportunity to seek the advice of experts and legal counsel prior to executing this Agreement and that it is fully aware of and understands all of the terms and the legal consequences thereof. The headings used in this Agreement are for reference only and shall not affect the construction of this Agreement.

CRESTLINE-LAKE ARROWHEAD WATER AGENCY

By: Loxanne M. Holmes
General Manager

Date: October 22, 2009

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By: _____
General Manager

Date: 10/22/2009

EXHIBIT A

In December 2007, fourteen agencies adopted the *Upper Santa Ana Watershed Integrated Regional Water Management Plan* (Integrated Plan). One of the primary water resources identified in the Integrated Plan is groundwater. The largest groundwater basin in the study area is the San Bernardino Basin Area (SBBA). When the SBBA is too full, high groundwater levels can occur in an area known as the Pressure Zone. Some of the reasons high groundwater levels are undesirable is that they can cause water to flow out of the SBBA and can also prevent water from recharging (rejected recharge).

The Integrated Plan charges the Basin Technical Advisory Committee with monitoring and assessing water levels in the pressure zone and presenting their findings in the annual *Regional Water Management Plan*. The general methodology used each year to assess whether high groundwater conditions exist is as follows:

1. In October of each year, the Basin Technical Advisory Committee collects water level data for a series of wells in the Pressure Zone.
2. Water levels in the Pressure Zone are considered to be "high" if they are shallower than 50 feet below ground surface.
3. The BTAC presents their findings on high groundwater conditions in the annual *Regional Water Management Plan.*
4. In November of each year, the annual *Regional Water Management Plan* is reviewed and approved by the Boards of Directors of the San Bernardino Valley Municipal Water District and Western Municipal Water District.

BEST BEST & KRIEGER LLP
ATTORNEYS AT LAW

3750 University Avenue, Suite 400
Post Office Box 1028
Riverside, California 92502-1028
(951) 686-1450
(951) 686-3083 Fax
BBKlaw.com

INDIAN WELLS
(760) 568-2611

IRVINE
(949) 263-2600

LOS ANGELES
(213) 617-8100

ONTARIO
(909) 989-8584

SACRAMENTO
(916) 325-4000

SAN DIEGO
(619) 525-1300

WALNUT CREEK
(925) 977-3300

Michael T. Riddell
(909) 826-8210
Michael.Riddell@bbklaw.com

October 23, 2009

Ms. Roxanne M. Holmes
General Manager
CRESTLINE-LAKE ARROWHEAD
WATER AGENCY
24116 Crest Forest Drive
P.O. Box 3880
Crestline, CA 92325-3880

Re: 2009 Exchange Agreement with San Bernardino Valley Municipal Water District

Dear Roxanne:

Enclosed is the duplicate original of the 2009 Exchange Agreement with San Bernardino Valley Municipal Water District, signed by Randy Van Gelder on behalf of that District. You should sign this yourself and then keep it in your file so that you have a fully executed duplicate original.

By copy of this letter to Randy Van Gelder, I am also sending to him the duplicate original of the same agreement, signed by you, so that he may do likewise.

DWR is preparing the necessary agreement that it will need to have you and Randy sign as well. That should be ready soon. In addition, in our office we are preparing the Notice of Exemption which should be signed and filed by both the Agency and the District. It is filed with the County of San Bernardino and also with the State Clearinghouse. I will be providing that to both of you, along with some more detailed instructions.

Thanks very much. Please let me know if you have any questions,

Sincerely yours,

Mike

Michael T. Riddell
of BEST BEST & KRIEGER LLP

MTR:mb

Enclosure

Cc: Randy Van Gelder, General Manager
San Bernardino Valley Municipal Water District

Receipt #374032
CLERK OF THE BOARD
NOV - 2 2009
COUNTY OF
SAN BERNARDINO

NOTICE OF EXEMPTION

(California Environmental Quality Act)

To: Clerk of the Board of Supervisors
County of San Bernardino
385 N. Arrowhead Ave., 2nd Floor
San Bernardino, CA 92415

Office of Planning and Research
1400 Tenth Street, Room 222
Sacramento, CA 95814
Attn: State Clearinghouse

From: San Bernardino Valley Municipal
Water District
380 East Vanderbilt Way
San Bernardino, CA 92408
Phone: (909) 387-9200

Project Title: The Project entails the approval of a Water Exchange Agreement, which allows for the delivery of 1,000 acre-feet ("AF") of State Water Project ("SWP") water from Crestline-Lake Arrowhead Water Agency ("Agency") to San Bernardino Valley Municipal Water District ("Valley") in 2009, in exchange for the return of 650 AF of SWP water by Valley to Agency no later than the end of 2018. The Water Exchange Agreement also amends a similar agreement between the same two parties in 2008 by extending the term for the return of 1,000 AF of SWP water from Valley to Agency, from 2011 to 2018.

Project Location: Within the service areas of Crestline-Lake Arrowhead Watery Agency, see Map attached as Exhibit "1," and San Bernardino Valley Municipal Water District, see Map attached as Exhibit "2," in the County of San Bernardino.

Description of Nature, Purpose, and Beneficiaries of Project: On October 1, 2009, the Board of Directors of Agency approved the execution of the Water Exchange Agreement ("Agreement") with Valley. This Agreement provides for the delivery of 1,000 AF of SWP water from Agency to Valley in 2009, and requires Agency submit a written request to the California Department of Water Resources on or before December 1, 2009, to deliver 1,000 AF of Agency's share of SWP Table A water to Valley. In exchange for delivery of that water, Valley will deliver 650 AF of water of equal or better quality to Agency by the end of 2018. This same Agreement was approved by Valley and then executed by Valley on October 22, 2009.

Name of Public Agency Approving Project: Crestline-Lake Arrowhead Water Agency

Exempt Status (check one):

___ Ministerial Action.
___ Declared Emergency
___ Emergency Project
_X_ Categorical Exemption (State CEQA Guidelines § 15301 [Existing Facilities]; State CEQA Guidelines §15304 [Minor Alterations to Land, Water, or Vegetation].)
_X_ Statutory Exemption (State CEQA Guidelines § 15282(u) [Temporary Transfer or Exchange of Water or Water Rights].)
_X_ Other The Project is also exempt under State CEQA Guidelines section 15061(b)(3) because it can be seen with certainty that there is no possibility the Project may have a significant impact on the environment. The Project is merely an exchange of water. No physical facilities will be constructed to produce or transport water

DATE FILED & POSTED

because all such required facilities already exist. In addition, no new water production or transportation capacity is created by the Project.

Reasons why project is exempt: The water exchange will entail no change in type of use or expansion of use, but consist merely of the continued operation of existing facilities and the use of those facilities to temporarily transport water to a different location. State CEQA Guidelines section 15301 provides that environmental review is not required for "the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination." In addition, the exchange of water is a minor, temporary alteration to the condition of water that does not require the removal of any trees and thus is also exempt pursuant to State CEQA Guidelines section 15304 as "minor public or private alterations in the condition of land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees." The Project's proposed exchange of water is temporary and thus is also exempt pursuant to the State CEQA Guidelines, section 15282(u) exemption for the temporary transfer of water or water rights. Because the water exchange will merely temporarily change the location in which water is used and will be delivered via existing facilities, there is no possibility the Project may have a significant impact on the environment. Accordingly, the Agreement and the water exchange that it authorizes are exempt from environmental review under CEQA. Moreover, the water transfer does not involve cumulative impacts, potentially significant impacts, unusually sensitive environments, or any other unique or unusual environmental impacts that might merit environmental review.

Contact Person & Telephone Number: Randy Van Gelder, General Manager
Phone: (909) 387-9200

10/30/2009
Date

for San Bernardino Valley Municipal Water District

State of California—The Resources Agency
DEPARTMENT OF FISH AND GAME

2009 ENVIRONMENTAL FILING FEE CASH RECEIPT

RECEIPT# 374032

STATE CLEARING HOUSE # *(If applicable)*

SEE INSTRUCTIONS ON REVERSE. TYPE OR PRINT CLEARLY

LEAD AGENCY: San Bernardino Valley Municipal Water District

DATE: 11-2-09

COUNTY/STATE AGENCY OF FILING: San Bernardino, CA

DOCUMENT NUMBER:

PROJECT TITLE: Water Exchange Agreement · (AF). (SWP) Crestline-Lake Arrowhead Water.

PROJECT APPLICANT NAME: San Bernardino Valley Municipal Water District

PHONE NUMBER: 909 387-9200

PROJECT APPLICANT ADDRESS: 380 E. Vanderbilt Way

CITY: San Bernardino

STATE: CA

ZIP CODE: 92408

PROJECT APPLICANT *(Check appropriate box):*

☒ Local Public Agency ☐ School District ☐ Other Special District ☐ State Agency ☐ Private Entity

CHECK APPLICABLE FEES:

☐	Environmental Impact Report	$2,768.25	$
☐	Negative Declaration	$1,993.00	$
☐	Application Fee Water Diversion *(State Water Resources Control Board Only)*	$850.00	$
☐	Projects Subject to Certified Regulatory Programs	$941.25	$
☒	County Administrative Fee	$50.00	$ 50.00
☐	Project that is exempt from fees		
	☒ Notice of Exemption		
	☐ DFG No. Effect Determination (Form Attached)		
☐	Other _____		$

PAYMENT METHOD:

☐ Cash ☐ Credit ☒ Check #391771 ☐ Other _____

TOTAL RECEIVED $ 50.00

SIGNATURE: X Norma Tite

TITLE: Deputy Clerk.

WHITE - PROJECT APPLICANT | YELLOW - DFG/ASB | PINK - LEAD AGENCY | GOLDEN ROD - COUNTY CLERK | FG 753.5a (Rev. 7/08)

TRANSMISSION VERIFICATION REPORT

TIME : 11/02/2009 14:24
NAME : SBVMWD
FAX : 9093879247
SER.# : BROD8F869364

DATE,TIME	11/02 14:23
FAX NO./NAME	819163233018
DURATION	00:00:48
PAGE(S)	03
RESULT	OK
MODE	STANDARD ECM

San Bernardino Valley Municipal Water District
380 E. Vanderbilt Way, P.O. Box 5906 • San Bernardino, CA 92412
Phone (909) 387-9200 • Fax (909) 387-9247

FACSIMILE TRANSMITTAL

DATE: November 2, 2009

TIME: 1:16 PM

TO FAX NO.: 916-323-3018

SUBJECT: Notice of Exemption

FROM: Randy Van Gelder

PLEASE DIRECT THIS TO THE ATTENTION OF: State Clearinghouse - Office of Planning

NUMBER OF PAGES OF THIS TRANSMISSION, INCLUDING THIS PAGE: 3

MESSAGE/SPECIAL COMMENTS:

- ☐ A copy of this transmission will follow by regular mail.
- ☐ Please call sender upon receipt of this transmission.
- ☐ Other:

Water Exchange Agreement – Crestline Lake Arrowhead Water Agency and San Bernardino Valley Municipal Water District dated October 30, 2009

THIS MESSAGE IS INTENDED ONLY FOR THE USE OF THE INDIVIDUAL OR ENTITY TO WHICH IT IS ADDRESSED AND MAY CONTAIN INFORMATION THAT IS PRIVILEGED. CONFIDENTIAL AND EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAW. IF THE READER OF THIS MESSAGE IS NOT THE INTENDED RECIPIENT, OR THE EMPLOYEE OR AGENT RESPONSIBLE FOR DELIVERING THE MESSAGE TO THE INTENDED RECIPIENT, YOU ARE HEREBY NOTIFIED THAT ANY DISSEMINATION, DISTRIBUTION OR COPYING OF THIS COMMUNICATION IS STRICTLY PROHIBITED. IF YOU HAVE RECEIVED THIS COMMUNICATION IN ERROR, PLEASE NOTIFY US IMMEDIATELY BY TELEPHONE, AND RETURN THE ORIGINAL MESSAGE TO US AT THE ABOVE ADDRESS VIA THE U.S. POSTAL SERVICE. THANK YOU.

THIS DOCUMENT CONTAINS MULTIPLE SECURITY FEATURES. SEE REVERSE FOR DETAILS.

391771

Valley MUNICIPAL WATER DISTRICT SAN BERNARDINO

P.O. BOX 5906
SAN BERNARDINO, CA 92412
(909) 387-9200

GENERAL FUND

Wells Fargo Bank, N.A.
California

16-24-1220

11/2/2009

Security features. Details on back.

PAY
TO THE
ORDER OF CLERK OF THE BOARD

$ **50.00

Fifty and 00/100********** DOLLARS

CLERK OF THE BOARD
SAN BERNARDINO COUNTY

MEMO

AUTHORIZED SIGNATURE

⑈391771⑈ ⑆122000247⑆060768588O⑈

San Bernardino Valley Municipal Water District

391771

CLERK OF THE BOARD		11/2/2009	
60 · TAXES & LICENSES	NOE - WATER EXCHANGE AGREEMENT 1000 AF OF SWP FROM CLAWA TO SBVMWD		50.00

CHECKING 50.00

San Bernardino Valley Municipal Water District

391771

CLERK OF THE BOARD		11/2/2009	
60 · TAXES & LICENSES	NOE - WATER EXCHANGE AGREEMENT 1000 AF OF SWP FROM CLAWA TO SBVMWD		50.00

CHECKING 50.00

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 942360001
(916) 653-5791

December 7, 2009

Ms. Roxanne Holmes, General Manager
Crestline-Lake Arrowhead Water Agency
Post Office Box 3880
Crestline, California 92325

Mr. Randy Van Gelder, General Manager
San Bernardino Valley Municipal Water District
Post Office Box 5906
San Bernardino, California 94212-5906

This Letter Agreement is in response to Crestline-Lake Arrowhead Water Agency's (CLAWA) letter requesting the Department of Water Resources' (DWR) approval for the exchange of up to 1,000 acre-feet of State Water Project (SWP) Table A water between San Bernardino Valley Municipal Water District (SBVMWD) and CLAWA. SBVMWD will take delivery of, and store within its groundwater basin, up to 1,000 acre-feet of CLAWA's 2009 Table A water by December 31, 2009. In exchange CLAWA may take back from SBVMWD's future Table A water allocations 650 acre-feet of water at CLAWA's option, no later than December 31, 2018 as an unequal exchange. However, to remain a bona fide exchange, at least one half of the water delivered to SBVMWD under this Agreement must be returned to CLAWA by December 18, 2019. There will be no monetary payments between CLAWA and SBVMWD for this exchange of Table A water. The point of exchange shall be Silverwood Lake.

In the event that the SBVMWD Basin Technical Advisory Committee makes a determination in any year that high groundwater conditions exist in the San Bernardino Basin, resulting in the flow of water out of the that basin, the quantity of water not yet returned to CLAWA will be reduced by 10 percent. In the event that such conditions do occur in any year, however, SBVMWD and CLAWA would advise DWR of the reduction in the quantity of water remaining to be returned to CLAWA pursuant to this Agreement.

DWR will file a Notice of Exemption based on California Environmental Quality Act Guidelines Section 15301 with the following description of this exchange of water: the proposed project is a water management operation using only existing facilities for the exchange of water from one SWP contractor to another SWP contractor, the limited term transfer will not support new development or a change in land use, and the transfer is wholly within the SWP place of use. DWR is willing to approve the delivery of up to 1,000 acre-feet of CLAWA's 2009 SWP Table A water to SBVMWD in exchange for the return of up to 650 acre-feet of SBVMWD's Table A water subject to the following terms and conditions:

GENERAL PROVISIONS

1. DWR's approval under this Agreement is unique and shall not be considered a precedent for future agreements.

2. This Agreement shall become effective on the date of execution by all the parties and shall provide for the delivery of water to SBVMWD as of December 31, 2009. This Agreement shall terminate upon the delivery of all return water to CLAWA under this Agreement or by December 31, 2018, whichever comes first.

3. The delivery and return of water pursuant to this Agreement shall be contingent on, and subject to, any necessary approvals and shall be governed by the terms and conditions of such approval(s) and any other applicable regulations. CLAWA and SBVMWD shall be responsible for complying with all applicable laws and regulations and for securing any required consent, permit, or order. CLAWA and SBVMWD shall furnish to DWR copies of all approvals and agreements required for the delivery of water under this Agreement.

4. DWR will maintain records documenting the conveyance of up to 1,000 acre-feet of CLAWA's 2009 SWP Table A water to SBVMWD and the return delivery of water to CLAWA. CLAWA and SBVMWD shall certify to the State Water Project Analysis Office (Attention: Chief, Water Contracts Branch, Fax (916) 653-9628) the amount of CLAWA's approved 2009 Table A water delivered to SBVMWD and the return delivery of water from SBVMWD to CLAWA under this Agreement by January 31st of the year following the actual delivery.

WATER DELIVERY FROM CLAWA TO SBVMWD

5. The water delivered to SBVMWD shall be from CLAWA's allocation of 2009 approved Table A water.

6. The delivery of a portion of CLAWA's 2009 Table A water to SBVMWD shall be in accordance with a schedule reviewed and approved by DWR. DWR's approval is dependent upon the times and amounts of the delivery and the overall delivery capability of the SWP. DWR shall not be obligated to deliver the water at times when such delivery would adversely impact SWP operations, facilities, or other SWP contractors.

7. Pursuant to Paragraph 6, CLAWA shall obtain SBVMWD's approval for the water delivery schedule before submitting a schedule to DWR. All water delivery schedules and revisions shall be in accordance with Article 12 of CLAWA's and SBVMWD's respective long-term Water Supply contracts with DWR.

8. Pursuant to Paragraphs 5, 6, and 7, DWR will deliver up to 1,000 acre-feet of CLAWA's 2009 Table A water to SBVMWD's service area, Reach 26A of the California Aqueduct by December 31, 2009.

9. CLAWA and SBVMWD shall submit revised monthly water delivery schedules for approval to the State Water Project Analysis Office, Water Deliveries Section, indicating timing and point of delivery requested pursuant to this Agreement with reference to SWPAO #09079. Revised schedules shall be sent by electronic mail to SWPDeliveries@water.ca.gov or by FAX to (916) 653-9628, Attention: Chief, Water Deliveries Section.

10. CLAWA and SBVMWD shall submit weekly water schedules for the delivery of water pursuant to this Agreement to the Southern Field Division, Water Operations Section, indicating timing and point of delivery requested with reference to SWPAO #09079. Schedules shall be sent by electronic mail to SFDwaterschedule@water.ca.gov or by FAX to (661) 294-3651, Attention: Chief, Water Operations Section.

RETURN WATER DELIVERED FROM SBVMWD TO CLAWA

11. SBVMWD shall return at least half of the quantity of water advanced by CLAWA by December 31, 2018. The return water delivered to CLAWA shall be Table A water allocated to SBVMWD in the year water is returned. In the event that at least half of the water advanced is not returned to CLAWA by August 31, 2018, DWR, in coordination with CLAWA and SBVMWD, shall expedite the return of water to CLAWA by so scheduling SBVMWD's Table A by December 31, 2018.

12. The return of water under this Agreement by SBVMWD to CLAWA shall be in accordance with a schedule reviewed and approved by DWR. DWR's approval is dependent upon the times and amounts of the delivery and the overall delivery capability of the SWP. DWR shall not be obligated to deliver the water at times when such delivery would adversely impact SWP operations, facilities, or other SWP contractors.

13. Pursuant to Paragraph 11, SBVMWD shall obtain CLAWA's approval for the proposed delivery schedule, before submitting a schedule to DWR. All water delivery schedules and revisions shall be in accordance with Article 12 of CLAWA's and SBVMWD's long-term Water Supply contracts with DWR.

14. Pursuant to Paragraphs 11 and 12, DWR will deliver a portion of SBVMWD's Table A water scheduled for delivery to SBVMWD's service area to CLAWA's service area in Reach 24 of the California Aqueduct.

NO IMPACT

15. This Agreement shall not be administered or interpreted in any way that would cause adverse impacts to SWP approved Table A water or to any other SWP approved water allocations, water deliveries, or SWP/CVP operations and facilities. CLAWA and SBVMWD shall be responsible for any adverse impacts that may result from the exchange of water as determined by DWR.

SWP ALLOCATION

16. Water returned to CLAWA pursuant to this Agreement shall not be considered by DWR in the determination of approved annual Table A deliveries to or allocation of other SWP water to CLAWA under Article 18 of CLAWA's long-term Water Supply contract with DWR.

CHARGES

17. CLAWA and SBVMWD shall pay the following charges, including all future adjustments, which shall be calculated in the same manner as charges are calculated for SWP Table A deliveries and shall be in accordance with the provisions of CLAWA's and SBVMWD's long-term Water Supply contracts with DWR. Charges shall be determined for the year the water is delivered, and the year the water is returned.

    a. When a portion of CLAWA's approved 2009 Table A water is made available to SBVMWD at Reach 24, CLAWA shall pay to DWR the charges associated with the delivery of the water from the Delta to the point of delivery at Silverwood Lake, Reach 24. The charges associated with such delivery will be the 2009 Variable Operation, Maintenance, Power, and Replacement components of the Transportation Charge and the 2009 Off-Aqueduct Power Facilities Cost for each acre-foot of water delivered.

    b. DWR will deliver water made available by CLAWA at Silverwood Lake, Reach 24 to SBVMWD turnouts at Reach 26A. The charges associated with such delivery will be the 2009 Variable Operation, Maintenance, Power, and Replacement components of the Transportation Charge and the 2009 Off-Aqueduct Power Facilities Cost for each acre-foot of water delivered. SBVMWD will be charged at the Variable rate calculated from Reach 24 to Reach 26A.

c. In any year that a portion of SBVMWD's future Table A water is returned to CLAWA pursuant to this Agreement, SBVMWD shall pay to DWR the charges associated with the delivery of the return water from the Delta to CLAWA's turnouts in Reach 24 of the California Aqueduct. The charges associated with the return water will be the Variable Operation, Maintenance, Power, and Replacement components of the Transportation charges and the Off-Aqueduct Power Facilities Cost for each acre-foot of water delivered in effect for the year in which the water is returned to CLAWA.

18. In addition to the charges identified above, CLAWA and SBVMWD agree to pay to DWR any additional identified demonstrable increase in costs that would otherwise be borne by the SWP contractors not signatory to this Agreement or by DWR, as a result of activities pursuant to this Agreement.

19. Payment terms shall be in accordance with CLAWA's and SBVMWD's long-term Water Supply contracts with DWR.

LIABILITY

20. Responsibility for water delivered pursuant to this Agreement shall be governed by Article 13 of CLAWA's and SBVMWD's long-term Water Supply contracts, with responsibilities under the terms of that article shifting from DWR to CLAWA and SBVMWD when the water passes through their respective turnouts.

21. In the event of a claim of liability against DWR or its Directors, officers, or employees, jointly or severally, that arises as a result of this Letter Agreement, CLAWA and SBVMWD shall defend, indemnify, and hold DWR and any of its Directors, officers, and employees harmless from any such claim, except to the extent that such claim arises from the sole negligence or willful misconduct of DWR.

EXECUTION

22. This Letter Agreement may be executed in counterpart. The parties agree to accept facsimile or electronically scanned signatures as original signatures. The Agreement shall take effect as soon as all parties have signed.

23. Immediately after execution, SBVMWD and CLAWA shall transmit a copy of the executed Letter Agreement by facsimile or electronically to Robert Cooke, Chief, State Water Project Analysis Office at (916) 653-9628 or cooke@water.ca.gov and to each other at.

CLAWA: (909) 338-3686 or Michael.riddell@bbklaw.com
SBVMWD: (909) 387-9247 or dough@sbvmwd.com

If CLAWA or SBVMWD needs a Board of Directors' approval of this Letter Agreement, that party shall send a facsimile or electronically scanned copy of the board approval to the other two parties. If you have any questions or need additional information, please contact me at (916) 653-4313 and refer to SWPAO #09079.

Sincerely,

Robert B Cooke

Robert B. Cooke, Chief
State Water Project Analysis Office
ACCEPTED:

CRESTLINE-LAKE ARROWHEAD WATER DISTRICT

Roxanne M. Holmes
Signature

General Manager
Title

12/08/09
Date

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

Signature

Title

Date

cc: Mr. Terry Erlewine, General Manager
State Water Contractors
1121 L Street, Suite 1050
Sacramento, California 95814

If CLAWA or SBVMWD needs a Board of Directors' approval of this Letter Agreement, that party shall send a facsimile or electronically scanned copy of the board approval to the other two parties. If you have any questions or need additional information, please contact me at (916) 653-4313 and refer to SWPAO #09079.

Sincerely,

Robert B Cooke

Robert B. Cooke, Chief
State Water Project Analysis Office
ACCEPTED:

CRESTLINE-LAKE ARROWHEAD WATER DISTRICT

_____
Signature

_____
Title

_____
Date

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

[signature]
Signature

General Manager
Title

12/7/2009
Date

cc: Mr. Terry Erlewine, General Manager
State Water Contractors
1121 L Street, Suite 1050
Sacramento, California 95814

CRESTLINE-LAKE ARROWHEAD WATER AGENCY

A Public Agency
P.O. BOX 3880 PHONE (909) 338-1779
24116 CREST FOREST DRIVE
CRESTLINE, CALIFORNIA 92325

Directors
STEPHEN L. PLEASANT, President
BRUCE D. RISHER
NORMAN C. MEEK
THOMAS L. SUTTON
KENNETH A. EATON
Secretary
JENNIFER A. SPINDLER
General Manager
ROXANNE M. HOLMES

November 20, 2009

Randy Van Gelder, General Manager
San Bernardino Valley Municipal Water District
380 East Vanderbilt Way
P.O. Box 5906
San Bernardino, CA 92412

RE: 2009 Water Exchange Agreement

Dear Randy:

The purpose of this letter is to address an issue that has been raised by the Department of Water Resources regarding the Water Exchange Agreement which we both executed on October 22, 2009. As you know, that agreement provides that of the 2,000 acre-feet of water which has been and will be delivered to the District from the Agency's 2008 and 2009 allocations, the Agency will have until the end of 2018 to take back 1,650 acre-feet of exchange water from the District's future allocations. The agreement further provides that in any year in which the District experiences high groundwater conditions, resulting in the loss of water from the Basin, the quantity of water not yet returned to the Agency by way of exchange will be reduced by 10%. That 10% reduction will apply in each year that such high groundwater conditions may occur.

Craig Trombly at DWR has pointed out that exchange agreements such as this must provide for the return of no less than 50% of the water delivered to the exchange partner. Although it is extremely unlikely that we would experience multiple years of heavy precipitation between now and the end of 2018, DWR is nonetheless concerned that the 10% reduction provision theoretically could result in the return of less than half of the 2,000 acre-feet of water delivered to the District pursuant to the 2008 and 2009 Water Exchange Agreements.

In order to eliminate that possibility, we have agreed that if the 10% reduction provision is applied in multiple years, the last year of which would result in a cumulative loss of 650 acre-feet of water or more, in that year the Agency will take back all of the

remainder of the exchange water not yet returned to the Agency so that no more than a cumulative total of 649 acre-feet of water is lost due to the application of that 10% reduction provision. This agreement between us is consistent with the Water Exchange Agreements already executed and thus does not require an amendment of either the 2008 or the 2009 Water Exchange Agreement.

If this letter correctly states the agreement that we have reached regarding the timing of the return of exchange water to the Agency, please sign and return one of the two duplicate originals of this letter, both of which I have already signed. Upon receipt of the duplicate original bearing your signature, I will send a copy to Craig Trombly as written assurance that the exchange arrangement between the Agency and the District will in fact comply with the approved policy which DWR is applying uniformly to all such exchange arrangements.

Yours very truly.

Roxanne M. Holmes,
General Manager

This letter correctly and accurately reflects the agreement between the Agency and the District.

Randy Van Gelder

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 942360001
(916) 653-5791

Ms. Roxanne Holmes, General Manager
Crestline-Lake Arrowhead Water Agency
Post Office Box 3880
Crestline, California 92325

Mr. Douglas Headrick, General Manager
San Bernardino Valley Municipal Water District
Post Office Box 5906
San Bernardino, California 94212-5906

This is in response to your letter dated October 6, 2009 in which you requested that we amend the Letter Agreement SWPAO #08063, dated December 17, 2008, among the Department of Water Resources (DWR), Crestline-Lake Arrowhead Water Agency (CLAWA), and San Bernardino Valley Municipal Water District (SBVMWD) to exchange up to 1,000 acre-feet of CLAWA's 2008 State Water Project (SWP) Table A water with SBVMWD.

As described in the original Agreement's introductory paragraph, the quantity of Table A water to be exchanged is up to 1,000 acre-feet and to be returned as a 1 acre-foot for 1 acre-foot exchange. CLAWA and SBVMWD have agreed the returned Table A exchange water will now be subject to high groundwater conditions which could reduce the amount of water available for return to CLAWA. However, to remain a bona fide exchange, at least half the water delivered to SBVMWD must ultimately be returned to CLAWA by December 3, 2018. Paragraph 11 of the original Agreement #08063 provides for the return of all exchange water to CLAWA by December 31, 2011 and water to be scheduled by August 31, 2011 if all water has not been returned prior to that date. CLAWA and SBVMWD have agreed to extend the water return time to December 31, 2018 and schedule it by August 31, 2018. The details of this request are noted in the "Water Exchange Agreement and Amendment of Demonstration Project" signed by CLAWA and SBVMWD on October 22, 2009.

Accordingly, the original agreement is amended as follows:

Provision 2 shall now read:

2. This Agreement shall become effective on the date of execution by all the parties and shall provide for the delivery of water to SBVMWD as of December 31, 2008. This Agreement shall terminate upon the delivery of all return water to CLAWA under this Agreement or by December 31, 2018, whichever comes first.

Provision 11 shall now read:

11. SBVMWD shall return at least half of the water advanced to CLAWA by December 31, 2018. The return water delivered to CLAWA shall be Table A water allocated to SBVMWD in the year water is returned. In the event that at least half of the water advance is not returned to CLAWA by August 31, 2018, DWR, in coordination with CLAWA and SBVMWD, shall expedite the return of water to CLAWA by so scheduling SBVMWD's Table A by December 31, 2018.

A new term is added to the original Agreement to read:

In the event that SBVMWD's Basin Technical Advisory Committee makes a determination in any year that high groundwater conditions exist in the San Bernardino Basin, resulting in the flow of water out of that basin, the quantity of

water not yet returned to CLAWA will be reduced by 10 percent. In the event that such conditions do occur in any year, SBVMWD and CLAWA will advise DWR of the reduction in the quantity of water remaining to be returned to CLAWA pursuant to this Agreement.

If you agree to the terms and conditions of this Amendment, please sign and date all four originals. After signing, forward all four originals to SBVMWD for their signature and request that they return two executed originals to Robert Cooke, Chief, State Water Project Analysis Office, Department of Water Resources, Post Office Box 942836, Sacramento, California 94236-0001. SBVMWD will retain one executed original and return one executed original to CLAWA for their respective records. Please send a copy of the Board of Directors approval of this amendment, if such approval is required. This Amendment will not take effect until signed by both CLAWA and SBVMWD.

If you have any questions or need additional information, you may contact Craig Trombly, of my staff at (916) 653-6250, and refer to SWPAO #08063-A.

Sincerely,

Robert B Cooke

Robert B. Cooke, Chief
State Water Project Analysis Office

ACCEPTED:

CRESTLINE-LAKE ARROWHEAD WATER DISTRICT

Roxanne M. Holmes
Signature

Title

Date

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

Douglas A. Headrick
Signature

General Manager
Title

2-16-2010
Date

Enclosures

cc: Mr. Terry Erlewine, General Manager
State Water Contractors
1121 L Street, Suite 1050
Sacramento, California 95814

MEMORANDUM OF UNDERSTANDING AND AGREEMENT FOR COST-SHARING OF FEASIBILITY STUDY FOR THE GARDEN BAR WATER AND POWER PROJECT

This Memorandum of Understanding and Agreement ("MOU") is dated and effective this 29th day of December, 2009 by and between the South Sutter Water District ("SSWD") and the entities listed in Exhibit A attached hereto and incorporated herein. The parties to this MOU are individually referred to herein as "Party" and collectively referred to herein as "Parties."

RECITALS

A. SSWD was formed in 1954 in order to develop, store and distribute surface water supplies to augment and replenish local groundwater supplies. SSWD owns and operates the Camp Far West Reservoir on the Bear River, which was completed in 1964 and which has a nominal storage capacity of 104,400 acre-feet. SSWD provides agricultural water service to approximately 36,000 acres of land located in Sutter and Placer counties.

B. SSWD is currently evaluating the feasibility of a new dam and reservoir project (the Garden Bar Water and Power Project; hereinafter "Project") that would be located on the Bear River approximately five miles upstream of Camp Far West Reservoir. If approved and implemented, the Project would provide substantial flood control, water supply and hydroelectric power generation benefits. The Project and related proposals have been the subject of various feasibility studies since the 1970s.

C. At the request of SSWD, RMC Water and Environment ("RMC") has developed a Budget and Scope of Work for an Updated Reconnaissance Study for the Project ("Reconnaissance Study"). The estimated budget for the Reconnaissance Study is $1 million.

D. The Parties desire to enter into this Memorandum of Understanding to establish cost-sharing obligations for the Reconnaissance Study, oversight procedures and related obligations.

In this context, the Parties enter into the following understanding and agreement:

1. Agreement to Share Costs of Reconnaissance Study. The Parties agree to share the professional fees and costs of the Reconnaissance Study based on the cost share percentages and the maximum contributions set forth in Exhibit A attached hereto and incorporated herein. No Party will have any obligation to pay any fees or costs arising from or relating to the Reconnaissance Study in excess of the maximum contributions specified in Exhibit A absent a written agreement executed by the Party against whom additional fees or costs are to be imposed.

2. Oversight of Reconnaissance Study. Following commencement of the Reconnaissance Study, the Parties will meet at least once per calendar quarter in Sacramento, California with representatives of RMC to review the status of the Reconnaissance Study. All of

SBVMWD LEGAL
DOCUMENT 2252

the Parties will be provided with written progress reports and other documentation describing the status of the Reconnaissance Study.

3. No Commitment to Approve or Implement Project. Notwithstanding any provision of this Memorandum, the Parties have made no determinations or commitments whatsoever to approve or implement the Project. The Parties agree that no determinations or commitments to approve or implement the Project can or will be made until environmental review of the Project is completed in accordance with the California Environmental Quality Act and other applicable laws. All of the Parties retain full and absolute discretion to decline further participation in the Project following completion of the Reconnaissance Study.

4. No Additional Project-Related Obligations. Except as expressly provided in this Memorandum, the Parties will have no obligations to participate financially or otherwise in Project planning, feasibility analysis, design, construction or implementation.

5. Reimbursement. In the event that some but less than all of the Parties elect to move forward, following completion of the Reconnaissance Study, with additional Project-related activities including but not limited to environmental review for the Project (hereinafter "Further Participating Parties"), any future Project-related agreements executed by the Further Participating Parties shall include provisions for the reimbursement of those Parties who elect not to participate further in Project-related activities as to the non-participating Party's share of professional fees and costs paid for the Reconnaissance Study, excluding interest and the non-participating Party's staff time or other in-kind contributions to the Reconnaissance Study. In the event that none of the Parties move forward, following completion of the Reconnaissance Study, with additional Project-related agreements, then no Party shall have any right whatsoever to reimbursement of any fees and costs incurred pursuant to this Memorandum.

6. Contracting for Reconnaissance Study. Each of the Parties will be a signatory to a contract with RMC for the Reconnaissance Study. RMC will submit invoices to each of the Parties for Reconnaissance Study work based on the cost-share percentages specified in Exhibit A. SSWD will serve as RMC's principal point of contact for contract administration purposes. In no event will SSWD be responsible for (i) advancing payments to RMC; or (ii) payments in excess of its maximum payment obligation as specified in Exhibit A.

7. Exclusive Right to Negotiate Project-Related Agreements. Following completion of the Reconnaissance Study, the Parties will meet and confer to determine whether the Parties desire to participate in additional Project-related activities. In the event SSWD and one or more of the other Parties ("Participating Parties") elect to participate in additional Project-related activities, the Participating Parties will, for a period of one hundred eighty (180) days following issuance by RMC of the final report on the Reconnaissance Study ("Exclusivity Period"), have the exclusive right to negotiate with SSWD regarding Project participation. During the Exclusivity Period, SSWD and the Participating Parties shall negotiate exclusively and in good faith with each other regarding the terms and conditions of one or more agreements to move forward with Project-related activities. The negotiations will be consistent with the principle of equitable distribution of Project benefits and costs. The Exclusivity Period may be extended by written agreement executed by SSWD and the Participating Parties. Following expiration of the Exclusivity Period, if one or more agreements to move forward with Project-related activities

have not been executed by SSWD and the Participating Parties, SSWD will have no further obligations to the Participating Parties and SSWD will be free to negotiate with any other person or entity regarding participation in the Project.

8. Attorneys' Fees. In the event of a civil action to enforce any obligation under this Memorandum of Understanding, the prevailing party shall be entitled to an award of reasonable attorneys' fees and costs (including but not limited to reasonable expert witness fees and costs) incurred in connection with such litigation.

9. Entire Agreement. This instrument constitutes the entire agreement and understanding between the Parties with respect to the subject matters hereof, and supersedes and replaces any prior agreements and understandings, whether oral or written, by and between them with respect to such matters.

10. Counterparts. This Memorandum may be executed in any number of counterparts, each of which shall be deemed to be an original instrument, but all of which together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the parties hereto have entered into this instrument as of the Effective Date set forth above.

SOUTH SUTTER WATER DISTRICT

By: Brad Arnold

Title: General Manager

Date: 12/9/09

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By: [signature]

Title: G.M.

Date: 12/15/2009

PALMDALE WATER DISTRICT

By: [signature]

Title: _____

Date: 12/11

CASTAIC LAKE WATER AGENCY

By: [signature]

Title: GM

Date: 12/29/09

DSM

CITY OF NAPA

By: Joe Techel

Title: Mayor

Date: 12/22/09

EXHIBIT A

LIST OF PARTIES, PARTICIPATION PERCENTAGES

AND MAXIMUM CONTRIBUTIONS

NAME OF PARTY	PERCENTAGE	MAX. CONTRIB.
SOUTH SUTTER WATER DISTRICT	20.00	$200,000
CASTAIC LAKE WATER AGENCY	20.00	$200,000
PALMDALE WATER DISTRICT	20.00	$200,000
CITY OF NAPA	20.00	$200,000
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT	20.00	$200,000

AGREEMENT FOR ENGINEERING SERVICES

THIS AGREEMENT is by and between each of the following entities collectively and individually: the South Sutter Water District, the Palmdale Water District, the Castaic Lake Water Agency, the San Bernardino Valley Municipal Water District, and the City of Napa, California (hereinafter called **"Parties"**) and **RMC WATER AND ENVIRONMENT**, a corporation organized under the laws of the State of California.

RECITALS

A. On 12/29, 2009, the following Parties entered into a Memorandum of Understanding (MOU) with:

- South Sutter Water District (SSWD)
- Palmdale Water District (PWD),
- Castaic Lake Water Agency (CLWA)
- San Bernardino Valley Municipal Water District (SBVMWD)
- City of Napa (Napa)

The purpose of the MOU between these five entities (Parties) and RMC WATER AND ENVIRONMENT is to establish cost sharing obligations for the preparation of an Updated Reconnaissance Study for the project described as: Garden Bar Water and Power Project (herein after the "PROJECT") which would consist of a new dam and reservoir project located on the Bear River approximately five miles upstream of Camp Far West Reservoir. If approved and implemented, the Project would provide substantial water supply and hydroelectric power generation benefits, as well as other potential benefits, including flood control and recreation. The Project and related project proposals have been the subject of various feasibility studies since the 1970s.

B. SSWD was formed in 1954 in order to develop, store and distribute surface water supplies to augment and replenish local groundwater supplies. SSWD owns and operates the Camp Far West Reservoir on the Bear River, which was completed in 1964 and which has a nominal storage capacity of 104,400 acre-feet. SSWD provides agricultural water service to approximately 36,000 acres of land located in Sutter and Placer counties.

C. At the request of SSWD, RMC WATER AND ENVIRONMENT has developed a Scope of Work for an Updated Reconnaissance Study for the Project ("Reconnaissance Study"). The estimated budget for the Reconnaissance Study is $1,000,000, including a project contingency of $150,000.

D. Per the MOU, RMC WATER AND ENVIRONMENT will contract with each of the Parties separately and each party is responsible for one fifth (1/5) of the overall cost of the Reconnaissance Study, resulting in an individual cost share of up to $200,000.

E. RMC WATER AND ENVIRONMENT is qualified to provide such engineering,

planning, and/or project management services.

F. Per the MOU, the Parties will participate in the Reconnaissance Study and will engage RMC WATER AND ENVIRONMENT for the services and RMC WATER AND ENVIRONMENT is willing and able to undertake the services upon the terms and conditions hereinafter set forth.

G. THEREFORE, it is mutually agreed as follows: Parties, individually and collectively, hereby employ RMC WATER AND ENVIRONMENT and RMC WATER AND ENVIRONMENT hereby accepts such employment to perform the services hereinafter defined upon the terms and conditions set forth herein.

ARTICLE 1 – SCOPE OF SERVICES

1. RMC WATER AND ENVIRONMENT shall act as an independent contractor and shall not act as an agent or officer of any of the Parties except as expressly and unanimously agreed to in writing by the Parties.

2. RMC WATER AND ENVIRONMENT shall provide those services as described in the Detailed Scope of Work attached as Attachment A. RMC WATER AND ENVIRONMENT. shall not be obligated to provide and shall not be responsible for any services not expressly set forth in Attachment A unless such services are agreed to in writing between all of the Parties in the MOU.

ARTICLE 2 - COMPENSATION

Each Party will pay on a monthly basis, up to its separate one-fifth (1/5) share of the overall cost, to RMC WATER AND ENVIRONMENT as full compensation for the services described in this Agreement based on RMC WATER AND ENVIRONMENT'S standard hourly rates at the time the work is done together with reimbursable expenses as set forth herein. Copies of these standard rates are attached as Attachment B and will be updated as such rates change in the ordinary course of RMC WATER AND ENVIRONMENT's business. RMC WATER AND ENVIRONMENT costs to each Party shall not exceed $170,000 (one fifth of $850,000) without all Parties' written authorization. Expenditure of the project contingency budget of $150,000 shall be available upon written authorization of all the Parties.

ARTICLE 3 – SCHEDULE

1. The Agreement shall commence on 12/31, 2009 and terminate on the earlier of the completion of the project or 12/31, 2010.

2. In the case of unavoidable delay due to weather, strikes, or any other condition not under RMC WATER AND ENVIRONMENT's reasonable control, the time for performance by RMC WATER AND ENVIRONMENT as provided herein shall be extended, and an equitable adjustment in the fee shall be negotiated by mutual agreement. Said modification or revision to this Agreement shall be in writing signed by the Parties to the MOU and RMC WATER AND

ENVIRONMENT.

ARTICLE 4 - PAYMENT

Payment to RMC WATER AND ENVIRONMENT, as described in Article 2, is to be made as follows:

1. RMC WATER AND ENVIRONMENT shall submit its standard monthly invoice describing the work performed and expenses incurred during the preceding month. Each Party shall be responsible for making payment of one-fifth (1/5) of each standard monthly invoice. Each Party shall make payment to RMC WATER AND ENVIRONMENT within thirty (30) days after receipt of RMC WATER AND ENVIRONMENT's monthly invoice.

2. RMC WATER AND ENVIRONMENT shall submit a single monthly invoice to all Parties, specifying each Party's share.

3. Within fifteen (15) days of receipt of any invoice, each Party shall review the invoice and notify RMC WATER AND ENVIRONMENT of any disputed portions. In the event any one or more Parties disputes any portion of any invoice, all Parties shall be forthwith notified of the disputed amount and all Parties shall each pay its proportionate share of all undisputed portions as set forth herein.

4. All the Parties shall meet and confer with RMC WATER ENVIRONMENT commencing no later than the twentieth (20th) day of receipt of the disputed invoice to resolve the disputed amount. If the disputed amount cannot be resolved by mutual agreement of all Parties and RMC WATER ENVIRONMENT by thirty (30) days from receipt of the disputed invoice, each Party shall pay the disputed amount to SSWD, which shall hold funds in trust until the disputed amount is resolved by a majority of the Parties as evidenced by their written consent to payment of such disputed amount. The Parties may not withhold payment of any invoice as an offset to any actual or claimed damages not directly attributable to the specific services and expenses withheld.

5. All Parties agree that timely payment, as provided herein, is a material term of this Agreement, and failure to make timely payment as agreed constitutes a breach hereof. In the event payment for services rendered, whether disputed or not, has not been made within forty-five (45) days from the receipt of invoice, as provided herein, RMC WATER AND ENVIRONMENT may, after giving seven (7) days' written notice and without penalty or liability of any nature, and without waiving any claim against any Party, suspend all work on all authorized services as set forth herein. Upon receipt of payment in full for services rendered, plus interest charges, RMC WATER AND ENVIRONMENT will resume services, but shall be entitled for an equitable adjustment in compensation and schedule to cover fee, expense, and schedule impacts from such suspension.

6. Payment of all compensation due RMC WATER AND ENVIRONMENT pursuant to this Agreement shall be a condition precedent to the any Party using any of RMC WATER AND ENVIRONMENT's professional services work product furnished under this Agreement.

7. In order to defray carrying charges resulting from delayed payments, simple interest at the rate of 7% per annum compounded monthly (not to exceed the maximum rate allowed by law) shall be added to the unpaid balance of each invoice. Payments shall first be credited to interest and then to principal.

8. It is further agreed that the above payments for engineering services, as described herein, have been arrived at after meaningful negotiations between all Parties and RMC WATER AND ENVIRONMENT.

9. It is also mutually agreed that the above payment for engineering services shall be compensation only for those services specifically identified in Article 1, and more fully described in Attachment A. Provisions for additional compensation will be separately negotiated to pay for Additional Services as set forth below.

ARTICLE 5 – CHANGE IN SERVICES & ADDITIONAL SERVICES.

RMC WATER AND ENVIRONMENT will not be responsible for any Additional Services, not included in the original Scope of Work, unless all Parties unanimously authorize the performance of the additional work in writing, with said authorization signed by RMC WATER AND ENVIRONMENT, which authorization shall specify the work to be performed, basis for payment, and the time for performance. In the event RMC WATER AND ENVIRONMENT believes Additional Services are required or performance of this Agreement by RMC WATER AND ENVIRONMENT has been prevented by events beyond its control, it shall notify all Parties. All Parties shall meet and confer within ten (10) days of receipt of such notice from RMC WATER AND ENVIRONMENT to determine whether to authorize such additional work by unanimous consent. The Parties shall notify RMC WATER AND ENVIRONMENT in writing whether to proceed with such additional work within twenty (20) days of receipt of such notice. In the event RMC WATER AND ENVIRONMENT is notified not to proceed, RMC WATER AND ENVIRONMENT shall have no responsibility for such services. If the Parties do not notify RMC WATER AND ENVIRONMENT such services are not required, within twenty (20) days of such notice RMC WATER AND ENVIRONMENT shall be entitled to proceed with the work and to payment for any such services provided and costs incurred.

ARTICLE 6 - RMC WATER AND ENVIRONMENT'S RESPONSIBILITIES.

1. RMC WATER AND ENVIRONMENT will not commence performance of the services identified in Article 1, until execution of this Agreement by all Parties.

2. Opinions of project construction and implementation cost to be prepared pursuant to this Agreement will be based upon data presently available, and adjusted where necessary to reflect anticipated future changes. In preparation of these cost estimates, RMC WATER AND ENVIRONMENT will apply its experience and judgment. Since RMC WATER AND ENVIRONMENT has no control over future changes or competitive bidding procedures, and market conditions or other factors affecting cost, RMC WATER AND ENVIRONMENT makes no warranty, whether expressed or implied, as to the accuracy of said opinions of cost.

ARTICLE 7 - INSURANCE, INDEMNIFICATION, AND COMPLIANCE WITH LAWS

1. RMC WATER AND ENVIRONMENT will purchase and maintain during the term of Agreement insurance in accordance with the following:

(a) RMC WATER AND ENVIRONMENT will maintain insurance coverage for Workers' Compensation, and Employer's Liability Insurance as well as General Liability and Automobile Liability Insurance, and will name each Party as an additional insured on the General Liability and Automobile Liability Insurance policies.

(b) RMC WATER AND ENVIRONMENT asserts that it is qualified in the professional discipline necessary to the services and duties proposed to be performed, and that it shall perform such services and duties in conformance to and consistent with the standards generally recognized as being employed by professionals of RMC WATER AND ENVIRONMENT's discipline in the same locality. Within the limits of that standard of care RMC WATER AND ENVIRONMENT agrees to indemnify and hold harmless each Party, its officers, and employees from and against any and all liability, claims, suits, loss, damages, costs, and expenses to the extent caused by negligent acts, errors, or omissions of RMC WATER AND ENVIRONMENT, its officers, employees, agents, or consultants in the performance of its services and duties hereunder, but not from the negligence or willful misconduct of SSWD, its officers, and employees or other parties under Party's control. In no event shall RMC WATER AND ENVIRONMENT be liable for any special, indirect, or consequential damages as a result of its performance of the services hereunder.

(c) RMC WATER AND ENVIRONMENT maintains professional liability insurance. Notwithstanding the availability of professional liability insurance, the total aggregate of RMC WATER AND ENVIRONMENT's liability to all parties related to this Agreement, including third parties, shall not exceed One Million Dollars ($1,000,000), or the amount of RMC WATER AND ENVIRONMENT's fee, whichever is greater.

2. Nothing contained within this Agreement shall be construed or interpreted as requiring RMC WATER AND ENVIRONMENT to assume the status of a generator, storer, transporter, treater, or disposal facility as those terms appear within the Resource Conservation and Recovery Act, 42 USCA, §§6901 et seq., as amended, or within any state statute governing the generation, treatment, storage, and disposal of waste. Further, the contents of this Agreement shall not be construed or interpreted as requiring RMC WATER AND ENVIRONMENT to arrange for the transportation, treatment, or disposal of hazardous substances, as described in the Comprehensive Environmental Response, Compensation, and Liability Act, 42 USCA §9601, et seq., as amended.

3. In no event shall the officers, directors, owners or employees of RMC WATER AND ENVIRONMENT be personally liable for any obligation under this Agreement, for any alleged breach of this Agreement, for any direct, indirect, incidental or consequential losses or damage of any kind or nature whatsoever, provided that RMC WATER AND ENVIRONMENT is a properly organized, maintained, and capitalized Limited Liability Company or other corporation

or business entity authorized pursuant to the laws of California ("Business Entity" herein). The Parties agree that the sole and exclusive remedy by all Parties for any and all obligations and claims shall be against the Business Entity and not against any officer, director, or employee provided the Business Entity has been lawfully administered as an entity separate and apart from such officers, directors, or employees.

4. To the extent applicable hereto, RMC WATER AND ENVIRONMENT shall, in the performance of this Agreement, comply with:

(a) The Fair Labor Standards Act of 1939 (20 U.S.C. 201-219); The Walsh-Healey Public Contracts Act (41 U.S.C. 35-45); The Contract Work Hours Standards Act - Overtime Compensation (40 U.S.C. 327-330); Laws Restraining the Use of Convict Labor; Utilization of Small Business and Small Disadvantaged Business Concerns (Public Law 95-507); and all other federal, state and local laws; and all regulations and orders issued under any applicable law.

(b) The Equal Employment Opportunity clause in Section 202 of Executive Order (E. O.) 11246, as amended, and the implementing rules and regulations (41 CFR Part 60) are incorporated herein by reference, unless this order is exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of E. O. 11246 or provisions of any superseding E. O. As used in this clause, "Contractor" means Seller. Unless this order is exempted, the applicable Equal Employment Opportunity Compliance Certificate previously submitted by Seller to Buyer is by reference also incorporated herein.

(c) The Affirmative Action for Handicapped Workers Clause in Title 41, Code of Federal Regulations, Part 60, Subsection 741.4, and the implementing rules and regulations of the Department of Labor associated therewith are incorporated herein by reference unless this order is under $2,500. As used in said clause, "Contractor" means Seller.

(d) The Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era Clause of Title 41, Code of Federal Regulations, Part 60, Subsection 250.4 and the implementing rules and regulations of the Department of Labor associated therewith are incorporated herein by reference, unless this order is under $10,000. As used in said clause, "Contractor" means Seller, and "Contract" means this order.

ARTICLE8– INSTRUMENTS OF SERVICES

All documents, including Drawings and Specifications prepared or furnished by RMC WATER AND ENVIRONMENT (and RMC WATER AND ENVIRONMENT's independent professional associates and consultants) pursuant to this Agreement, are instruments of service in respect of the Project. Each Party may make and retain copies for information and reference in connection with the use and occupancy of the Project. However, such documents are not intended or represented to be suitable for reuse by any Party or on any other extensions of the Project, or on any other project. Any reuse without written verification or adaptation by RMC WATER AND ENVIRONMENT for specific purpose intended will be at each Party's sole risk and without liability or legal exposure to RMC WATER AND ENVIRONMENT, or to RMC WATER AND ENVIRONMENT's independent professional associates and consultants. The Parties agree to

defend, indemnify, and hold RMC WATER AND ENVIRONMENT harmless from all claims, damages, losses, and expenses including attorneys' fees arising out of or resulting therefrom. Any use of RMC WATER AND ENVIRONMENT's instruments of service are contingent on full payment of all fees and costs provided by this AGREEMENT.

ARTICLE 9 - SUSPENSION OR TERMINATION

1. The Parties, by unanimous agreement hereto by _____ notice in writing to RMC WATER AND ENVIRONMENT may, at any time and without cause, suspend the services of RMC WATER AND ENVIRONMENT, or any portion thereof for a period of not more than sixty (60) days'. RMC WATER AND ENVIRONMENT shall resume the services on receipt from the Parties of a written notice of resumption of services. RMC WATER AND ENVIRONMENT may be allowed an increase in fee or an extension of time, or both, if RMC WATER AND ENVIRONMENT makes an approved claim therefor, as provided in paragraph 2 below. In the event that the period of suspension exceeds ninety (90) days, the terms of this Agreement are subject to renegotiation.

2. This AGREEMENT may not be terminated without unanimous consent of the Parties. If the Parties unanimously decide to terminate the Project, they must provide RMC written notice and RMC WATER AND ENVIRONMENT agrees to cease all work under this AGREEMENT on or before the effective date of such notice. Nothing contained in any part of this AGREEMENT shall be deemed or construed to lessen, limit or derogate from the Parties's absolute right of cancellation set forth herein.

In the event of cancellation of this AGREEMENT, RMC WATER AND ENVIRONMENT shall receive as full compensation for all services and work performed to the date of cancellation, and all costs incurred in connection therewith, an amount of money to be determined as follows:

For work done on items of service on which a notice to proceed has been issued and which has been done in accordance with the terms and provisions of this Agreement, RMC WATER AND ENVIRONMENT shall be paid an amount of money computed in accordance with the provisions set forth in Articles 1 and 2 of this Agreement, plus reasonable termination expenses, in no event shall the amount of money to be paid for such items of service exceed the amount of Money which would be paid RMC WATER AND ENVIRONMENT under the applicable provisions of this Agreement for the full performance of such services.

ARTICLE 9 - MISCELLANEOUS

1. This Agreement shall be governed and interpreted in accordance with the laws of the State of California.

2. Any written notice permitted or required to be given under this Agreement may be given or served either in person or by certified mail. Such notice shall be effective upon receipt thereof by the party to whom it is addressed, whether it is personally delivered or sent by certified mail. Any such written notice delivered by certified mail shall, if not actually received earlier, be

deemed to have been effectively delivered at the expiration of forty-eight (48) hours after deposit in the United States Mail. Such notice shall be delivered or sent to the addresses of the parties concerned as shown below. Each party may change such address by giving written notice to the other party as provided below.

South Sutter Water District
2464 Pacific Avenue
Trowbridge, CA 95659
Attn: Brad Arnold

RMC Water and Environment
2868 Prospect Park Drive, Suite 130
Rancho Cordova, CA 95670
Attn: Steve Brown

Palmdale Water District
2029 E. Avenue Q
Palmdale, Ca 93550
Attn: Jon Pernula

Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita CA 91350
Attn: Dirk Marks

San Bernardino Valley Municipal Water District
380 East Vanderbilt Way
San Bernardino, CA 92408
Attn: Douglas Hedrick

City of Napa, California

1340 Clay Street
Napa, CA 94559
Attn: Joy Eldredge

3. RMC WATER AND ENVIRONMENT's books, papers, records, and accounts, as well as those of any structural, mechanical, and electrical subcontractors, or any other consultant retained by RMC WATER AND ENVIRONMENT, relating to or in any way connected with the professional services herein contemplated, shall be open, at all reasonable times, for inspection and audit by the agents and authorized representatives of any of the Parties. The original books, papers, records, and other documents described herein shall be retained for a minimum of three (3) years after completion of services.

4. This Agreement is to be binding on the heirs, successors, and assigns of the parties hereto, but is not to be assigned without first obtaining the written consent of the other; consent not to be unreasonably withheld.

5. This represents the entire understanding of the Parties and each of them and RMC WATER AND ENVIRONMENT as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to those matters covered hereunder. This Agreement may only be modified by amendment in writing signed by each party.

7. RMC WATER AND ENVIRONMENT'S waiver of any term, condition, or covenant, or breach of any term, condition or covenant, shall not constitute the waiver of any other term, condition, or covenant, or the breach of any term, condition or covenant.

8. If any term, condition, or covenant of this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remaining provisions of this Agreement shall be valid and binding on each party.

9. This Agreement may be executed in duplicate originals by each Party and RMC WATER AND ENVIRONMENT (six (6) executed originals) and shall not be valid or enforceable until all Parties and RMC WATER AND ENVIRONMENT has executed and received this Agreement so that RMC WATER AND ENVIRONMENT and each Party has an original executed Agreement from each other Party and RMC WATER AND ENVIRONMENT. The executed originals of this Agreement shall be sent to RMC WATER AND ENVIRONMENT for distribution to the Parties.

Executed this 24th day of December, 2009.

SOUTH SUTTER WATER DISTRICT

By: Brad Arnold

Title: General Manager

Dated: 12/9/09

RMC WATER AND ENVIRONMENT

By:

Title: Sr. Vice President

Dated: 12/31/09

PALMDALE WATER DISTRICT

By:

Title:

Dated: 12/11

CASTAIC LAKE WATER AGENCY

By:

Title: CEO

Dated: 12/17/09

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By:

Title: G.M.

Dated: 12/15/2009

CITY OF NAPA

By: Joe Techel

Title: Mayor

Dated: 12/22/09

Attachment A
Scope of Work

Scope of Work
Updated Reconnaissance Study for Garden Bar Reservoir
South Sutter Water District

Background

The South Sutter Water District, in association with other California agencies, is considering implementation of the proposed Garden Bar Project. The Garden Bar Project would be located on the Bear River upstream of Camp Far West Dam and Reservoir, a facility owned an operated by the South Sutter Water District. The proposed project consists of a new dam and associated hydroelectric facilities, including power transmission facilities. The proposed site for developing Garden Bar Dam and associated hydroelectric power facilities has been studied and documented on numerous occasions, as indicated below:

- 1972 COE Flood Control Study (200,000 acre-ft flood control reservoir)
- 1981 COE Multi-Purpose Project Study (200,000 acre-ft reservoir, 23 MW conventional hydropower plant)
- 1982 Pumped Storage Alternative (260,000 acre-ft reservoir, 52 MW conventional hydropower plant)
- 1985 FERC Application (260,000 acre-ft reservoir, 79 MW hydropower plant, conventional hydro)
- 1987 Prospectus (250,000 acre-ft reservoir, 210 MW hydropower plant, pumped-storage hydro)
- 1991 FERC Application (265,000 acre-ft reservoir, 290 MW hydropower plant, pumped-storage hydro)

Basically, the scope of services for study of the dam and reservoir elements of the project is targeted at developing a reconnaissance-level cost estimate that can be used to evaluate economic feasibility of the project and to initiate subsequent permitting and more-detailed feasibility-level and implementation activities.

The following scope of services has been developed to support a decision to apply for water rights, apply for a FERC application, and solidify agreements with water and power partners. However, the work required to complete the applications is not included in this scope of work. The proposed scope of work includes tasks that will address:

1- Establishing the amount of water (firm and non-firm yield) and electric power generation that the project could produce;

2- Determining the construction, capital and O&M costs for the all elements of the project;

3- Developing a Strategic Implementation Plan, including an approach to CEQA/NEPA compliance and project permitting.

The proposed scope of services has been prepared assuming South Sutter Water District will execute a Memorandum of Understanding (MOU), or similar agreement, with other agencies to undertake the study. To that end, the signees of the MOU are referred to as the Project Partners.

Scope of Services

All workshops are assumed to be in either Sacramento or Trowbridge. For all draft technical memoranda, one reproducible copy and an electronic (pdf) file will be provided. All final technical memoranda will be submitted similarly.

Task 1 – Define Project Configurations to be Evaluated. This updated reconnaissance study will focus on three configurations. At this point in time, the three configurations are assumed to be as shown in the following table.

Elevation of Top of Dam	Elevation of Spillway (Normal Water Surface)	Height of Dam (feet)	Storage (AF)	Comment
650	635	365	310,000	Identified in 2007
635	620	350	265,000	Identified in 1991 report
605	590	320	250,000	Identified in 1982 report

By evaluating three configurations, the information can be used to determine the most cost effective facilities configuration and resulting water yield and power production values. The alignment of the dam, locations and configurations for the spillway, outlet works, hydropower facilities, cofferdams, river diversion, sources of construction materials, and construction access requirements will be reviewed during this task. During this first task, in a workshop setting, the project team and the project partners will define the dam/reservoir configuration. Other elements will either be defined (access roads, etc.) or, if an element can't defined at this point in the project (terminus of the high voltage transmission lines, pumped storage or conventional hydro, etc.), the approach that the project team will use to determine these elements will be presented. These elements will be defined before the construction cost estimate is complete and therefore the final TM will be submitted with the construction cost estimate.

The alignment of the dam, locations and configurations for the spillway, outlet works, hydropower facilities, cofferdams, river diversion, sources of construction materials, and construction access requirements will be reviewed during the reconnaissance

Task 1 Deliverables

1. Draft Technical Memorandum - Project Configurations
2. Workshop with SSWD and Project Partners
3. Final Technical Memorandum - Project Configurations

Task 2 – Develop Environmental Compliance and Permitting Approach. There are many environmental issues associated with the construction and operation of a new dam and reservoir. These include the potential for the project to affect fisheries and aquatic resources, terrestrial and sensitive species, water quality, groundwater, recreation, cultural resources, and other environmental resource areas. Implementation of this project will first require successfully complying with the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), and obtaining a license for the hydroelectric facilities from the Federal Energy Regulatory Commission (FERC). In addition, there are also many other permits and regulatory approvals that will be required for the implementation of this Project. Therefore, the RMC team will evaluate the environmental issues and develop an environmental compliance strategy for successfully complying with CEQA/NEPA, FERC and the other permitting requirements.

Subtask 2.1 Environmental Issues and Constraints Analysis. The RMC Team will review the previous environmental compliance documents to determine the previously identified environmental issues and concerns. In addition, the RMC Team will conduct a reconnaissance level investigation of the likely environmental impacts that the project could cause if implemented today. This will include obtaining update sensitive species list within and around the project area, conducting a site investigation, as well as non-formal consultation with the resource agencies regarding sensitive biological species, including fisheries. The results of this review and analysis will be used to develop a listing of the probably sensitive environmental issues and identify the necessary technical studies that will need to be conducted during the environmental review process and to support the CEQA, NEPA, and FERC documents as well as the other permits and regulatory approvals. The results of this subtask will be summarized in a technical memorandum.

Subtask 2.2. Identify CEQA and NEPA Compliance Strategy. The RMC Team will develop the strategy for complying with both CEQA and NEPA. This will include identifying the appropriate federal agency to take the Lead Agency role for the preparation of the NEPA document. In addition, the RMC team will evaluate the advantages of doing a combined CEQA NEPA document versus preparing them separately, and develop a recommended approach with input and consideration form the identified/selected Federal Lead Agency. The RMC Team will develop an estimated scope of work, budget, and schedule to provide a basis for the level of effort and timeframe that will be required to comply with CEQA and NEPA. The results of this subtask will be summarized in a technical memorandum.

Subtask 2.3 Identify FERC Application Process and Strategy. The RMC Team will identify the FERC Application process and timeline along with identifying all of the documentation and studies that will be required to support the application process. The RMC Team will develop an estimated scope of work, budget, and schedule to provide a basis for the level of effort and timeframe that will be required to comply with FERC. The results of this subtask will be summarized in a technical memorandum.

Subtask 2.4 Identify Likely Permit Requirements and Regulatory Approvals. The RMC Team will identify all of the other likely permits and/or regulatory approvals that may be required for the implementation of this project The RMC Team will develop an estimated scope of work, budget, and schedule to provide a basis for the level of effort and timeframe that will be

required to obtain these permits and regulatory approvals. The results of this subtask will be summarized in a technical memorandum.

Task 2 Deliverables

1. Draft Technical memorandum – Environmental Issues and Constraints Analysis
2. Draft Technical Memorandum - Strategic CEQA/NEPA/Permitting Approach
3. Draft Technical Memorandum – FERC Application Process and Strategy
4. Draft Technical Memorandum – Permit Requirements and Regulatory Approvals
5. Workshop with SSWD and Project Partners
6. Final Technical Memorandum – Environmental Compliance Strategy and Approach

Task 3 – Identify Markets. This task will focus on identification of potential water and power markets for any project yield or power generation capacity that is in excess of the needs of the Project Partners. Two technical memoranda will be prepared; Water Market TM and Power Market TM.

Subtask 3.1 – Water Market Analysis: Through consultation with the Project Partners, potential purchasers and/or additional partners will be indentified and contacted. The Water Market TM will identify potential markets/agencies for the dry year, firm, and non-firm water in excess of the needs of the Project Partners. The intent is to identify potential users of the water that is in excess of the needs of the Project Partners.

Subtask 3.1 – Power Market Analysis: The Power Market TM will include a similar analysis. Power market issues relate to future value of the power and alternative facility and operational attributes. This addresses the energy value, and the values of ancillary services that could support the electrical grid. Decisions derived from this relate to operations for pumped-storage or conventional pass through hydroelectric operations, as well as maintaining relative storages between reservoirs. Due to a very robust and liquid market for power, partnering issues may be less important than with water, and will help address whether the project should be developed as a conventional hydro facility or a pumped storage facility.

Task 3 Deliverables

1. Draft Technical Memorandum - Water Market
2. Draft Technical Memorandum - Power Market
3. Workshop with Project Partners
4. Final Technical Memorandum - Water Market
5. Final Technical Memorandum - Power Market

Task 4 – Obtain Data for Modeling. The requisite modeling depends on several sets of data that are relatively independent yet in many cases may compete with or complement each other.

Subtask 4.1 - Existing/Previous Water Rights: A records search will be conducted to confirm and quantify of local water rights conditions. We will summarize in tabular form the local water rights constraints with annotation as to source documents and filings supporting the tabular summary

Subtask 4.2 - Hydrology: Hydrologic data are the fuel of the modeling effort. Three sets of data are necessary to address operations:

1. Flood hydrology – Gather Bear River data necessary for hourly design flows for various frequencies of floods, the Probable Maximum Flood, and recent historic floods of 1986, 1997 and 2005. These are necessary for spillway sizing, flood reservation definition, construction diversion sizing, and historical context.
2. Monthly Bear River hydrology – this is the driver for initial power and water supply evaluations. DWR data supporting its CALSIM modeling efforts derive from HEC3 upper basin simulation and should supply the monthly modeling inflows to Camp Far West, which, with minor adjustments, should supply monthly inflow to the proposed Garden Bar project
3. Monthly Delta Hydrology – DWR CALSIM modeling simulations provide the data indicating supply constraints for storage as well as demand constraints for south of Delta partners. The Project diversion to storage and release requirements must address SWRCB Standard Term 91 which limits new project storage to periods when reservoirs are not releasing water for Delta standards. Additionally, Delta pumping capacity constraints need to be evaluated relative to potential south of Delta project water deliveries. This data depends on ongoing simulations of the recent Wanger Decision that will support the future biological opinion.
4. Daily data – Not envisioned for this phase of analysis. Daily data would enable better resolution of power potential; however, because the project concept revolves around water supply, with power ass an ancillary benefit, daily operations refinements will be relegated to future analyses.

Subtask 4.3 - Identification of Local Demands: Quantification of local demand for irrigation and potential municipal demands requires review of existing irrigated lands, ongoing irrigation practices and potential for further urban development. We will discuss these issues with the South Sutter WD prior to setting direction on future demand criteria. We will also review in-stream flow requirements downstream of Camp Far West Reservoir.

Subtask 4.4 - Downstream Deliveries and Constraints: In addition to constraints in the Delta, delivery constraints of potential partners upstream of the Delta will be identified.

Subtask 4.5 - Groundwater: There exists the potential opportunity to enhance the conjunctive use capabilities of the existing Camp Far West and proposed Garden Bar surface water supplies and the local groundwater supplies. We will coordinate with South Sutter Water District's groundwater consultant to establish criteria for enhancing the conjunctive use operations. These criteria will then be utilized to enhance the operational model of the proposed reservoir system.

Subtask 4.6 – Power Pricing Templates (Power): Daily and hourly data from the California Independent System Operator supplies information for power pricing of ancillary services elements whereas forward markets of the intercontinental exchange coupled with fundamental pricing data provides the basis for energy valuation. These data will not drive the operation per se, but will be utilized to provide indications of power benefits and potential for enhanced revenue.

Subtask 4.7 - Summary of Available Data: Tabular data compilations along with qualitative assessment of the data quality and limitations will be provided to establish levels of confidence in the operations simulations. All data have limits as to accuracy and applicability; accordingly, results may show precision that, when viewed against the nature of the data, exceed the underlying accuracy/applicability of available data. This summary will qualitatively address this issue.

Task 4 Deliverables

1. Workshop on local demand and groundwater policy direction
2. Draft Technical Memorandum - Summary of Available Data
3. Final Technical Memorandum - Summary of Available Data

Task 5 –Modeling. Two reservoir operations models using ResSim will respectively simulate 1) Water and Power operations and 2) Flood control. Simulations show the results of preset rules of operation under expected constraints. The rules of operation address the balance of reservoirs (Garden Bar and Camp Far West Reservoirs) relative to capacity constraints under alternative hydrologic conditions. This requires at least one but perhaps two workshops to confirm operational objectives: 1) surrounding high level objectives for water supply, flood control and recreational attributes; 2) reconciling objectives which simulations show to be somewhat mutually exclusive.

Subtask 5.1 – Configure Water/Power Model: The simulation process for water supply and power potential including Garden Bar, Camp Far West, local diversions, in-stream requirements, and groundwater reservoirs with interactions to the Feather and Bear Rivers. We will develop a conjunctive model for water operations and will establish general demand criteria for local and partner deliveries by year type as defined by Sacramento River Index. We will successively test and retool operational criteria to achieve balance of production versus risk.

Subtask 5.2 – Flood Set-up and Run 25, 50, 100, 250 PMF and Historical event floods: This task includes developing a probable maximum flood (PMF) estimate based on existing estimates from previous Garden Bar studies as adjusted to reflect subsequent hydrologic events. Although an incremental hazard evaluation (IHE) might lower inflow design flood (IDF), to be conservative at this stage of analysis, the IDF for Garden Bar Dam and Reservoir will be the PMF. Floods of 10-, 25- 50-, and 100-year recurrence intervals will be estimated in order to identify diversion requirements for construction and to assist in sizing the service spillway and outlet works. Historical flood routings will be developed to demonstrate project flood control accomplishments and to place the operation in historical context. Activities in this subtask will include:

- Research existing studies and determine a preliminary PMF for Garden Bar Reservoir.
- Develop flood frequency relationships and hydrographs. .
- Obtain data on the levels in Camp Far West Reservoir and using HEC-RAS develop a preliminary tail water rating curve for the Bear River downstream from Garden Bar Dam and at the proposed location(s) for hydropower facilities – provided topography is available

- Perform preliminary reservoir flood routing analyses to assess spillway requirements.
- Develop flood control diagram and balancing storage criteria
- Develop Pre and Post Project frequency curves for the Bear River near the Wheatland gage.

Task 5 Deliverables

1. Workshop(s) on high level objectives
2. Draft Technical Memorandum – Flood Protection
3. Draft Technical Memorandum - Water Supply
4. Draft Technical Memorandum - Power Production
5. Workshop with SSWD and Project Partners
6. Final Technical Memorandum – Flood Protection
7. Final Technical Memorandum - Water Supply
8. Final Technical Memorandum - Power Production

Task 6 – Engineering: Update Costs and Develop Curves. Prepare a construction and operations and maintenance cost estimate for the project and develop cost curves. The project will be divided into various elements and specialists in each area will prepare the cost estimate.

The following subtasks will be conducted:

Subtask 6.1 – Dam Elements: During this subtask, layouts for an earthfill/rockfill dam and appurtenant structures (spillway, intake, diversion dam, diversion tunnel, power tunnel, etc.) will be prepared for the dam configurations from Task 1. The construction cost for the dam elements will also include a number of important constructability and construction sequencing issues that will be identified and evaluated. These include access, staging and lay-down areas, spoil disposal, and processing and handling of on-site and off-site construction materials.

The geotechnical aspects of this project are significant. In many respects, the foundation for an accurate construction cost estimate is based on various geotechnical data and therefore, additional effort will be invested on compiling and organizing the previous work and any other published reports (USGS). Based on the previous work, opinions on foundation strength and hydraulic conductivity and preliminary recommendations for foundation preparation and treatment, seepage control and grouting, tunneling requirements, permanent and temporary excavation slopes, and construction materials available on-site and in the reservoir basin will be developed.

Subtask 6.2 – Power Systems: Various hydroelectric power developments have been studied in the past for the Garden Bar Project. Both conventional and pumped-storage hydropower facilities have been considered with capacities ranging from 23 MW (conventional) to 290 MW (pumped storage). Even with a conventional hydro development, the presence of the Camp Far West Reservoir downstream of Garden Bar Dam and its ability for re-regulating flows, may result in a project that is focused on peaking-type operations to maximize the value of energy produced, rather than run-of-river operations. Prior studies have assumed that conventional hydro would involve a surface powerhouse relatively near the toe of Garden Bar Dam, whereas a pumped-storage project most likely would be developed with an underground powerhouse, probably

located further downstream. Both conventional and pumped-storage hydro project concepts will be developed. Based on the reservoir operations and power studies in Task 5, we will identify an appropriate installed capacity for conventional and pumped-storage hydro and prepare layouts of the required facilities, including the reservoir intake, penstocks, powerhouse, switchyard, and transmission line. The layouts will be based on Francis turbine units of reasonable size based on the flow and head conditions. Specific activities include:

- Develop basic layouts of the intake, penstocks, and powerhouse
- Select unit size and dimension the intake, penstocks, and powerhouse
- Prepare hydraulic analyses and head loss estimates. Determine plant capacity factors and potential dependable capacity estimates
- Prepare construction cost estimate
- Document results in a TM

Subtask 6.3 – Local Facilities: In order to implement a conjunctive use approach to water in the District, it may be necessary to remove bottlenecks in the canal system to move water from Camp Far West to the various parts of District. Also, it may be necessary to modify wells to implement a conjunctive use approach. This task will identify, at a conceptual level, the required facilities and associated cost. We expect these construction costs to be minor in comparison to the overall construction cost and therefore a lower level of detail will be applied (compared to the dam elements and the power elements).

Subtask 6.4 – Ancillary Facilities: A construction cost estimate will be prepared for ancillary facilities such as access roads and high voltage transmission lines. Based on the power plant size identified, the team will select an appropriate location in the high voltage grid to connect the power from the Garden Bar project. One likely connection point is the Elverta Substation in Roseville on Fiddyment Road.

Subtask 6.5 – Prepare Capital and O&M Cost Estimate: Capital and O&M cost estimates will be prepared and included in the TM. Capital cost estimates will include allowances for permitting, environmental compliance, design engineering, construction services, and contingencies. The project cost estimates will be prepared at a feasibility level.

Subtask 6.6 – Prepare Implementation Schedule: An implementation schedule for the project will be prepared.

Task 6 Deliverables

1. Draft Technical Memorandum - Construction Cost
2. Workshop with Project Partners
3. Final Technical Memorandum - Construction Cost

Task 7 – Project Economics. Using the cost and market information from the tasks above, an economic analysis of the project will be performed. The economic analysis will incorporate analyses of:

- Project development costs, including permitting
- Project implementation costs, including construction

- Project financing costs
- Annual operations and maintenance costs

These costs will be compiled to establish a total project cost in terms of total initial capital and annualized costs. These costs will then be utilized to estimate the value of the water and power produced by the project, and thereby, the cost effectiveness and benefit cost ratios associated with project implementation.

Task 7 Deliverables

1. Draft Technical Memorandum – Project Economics
2. Workshop with Project Partners (combined with Task 6 workshop)
3. Final Technical Memorandum – Project Economics

Task 8 – Legal Review and Analysis. Downey Brand will provide a legal review and analysis of implementing the Garden Bar project, including reviewing the water rights, environmental, regulatory, and permitting issues.

Task 8 Deliverables

1. Draft Technical Memorandum – Project Legal Aspects

Task 9 – Reconnaissance Report. The RMC team will develop a Strategic Implementation Plan which will be a "road map" to all the steps necessary to implement and construct the Garden Bar Dam and Reservoir. The Plan will address all the steps, but will not provide a detailed analysis of each step. For example, governance (e.g., interagency agreements, creation of a joint powers authority, etc.) will be addressed, but not discussed in detail. The Plan will also include a timeline.

A draft Reconnaissance Report, including the draft Strategic Implementation Plan, will be prepared for the Project Partners' review. It is envisioned that the Reconnaissance Report will be in one binder, and a separate binder will hold appendices. A workshop will be held with the Project Partners to present the Strategic Implementation Plan and the Reconnaissance Report. After the workshop, the final plan and report will be completed and submitted to the Project Partners.

Task 9 Deliverables

1. Draft Reconnaissance Report and Strategic Implementation Plan
2. Workshop with Project Partners
3. Final Reconnaissance Report and Strategic Implementation Plan

Task 10 - Project Management/Quality Control. RMC will provide monthly progress reports on project budget, schedule and progress status. RMC will also provide independent review of project work products prior to their submission to the Project Partners.

Task 10 Deliverables

1. Monthly Status (Progress, Budget & Schedule) Updates

Attachment B
RMC Water and Environment
2009/2010 Standard Billing Rates
(Effective 12/29/2009)

Employee Classifications	Hourly Billing Rate
Principal 3	$245
Principal 2	$235
Principal 1	$225
Sr. Project Manager 3	$220
Sr. Project Manager 2	$215
Sr. Project Manager 1	$210
Project Manager 3	$205
Project Manager 2	$195
Project Manager 1	$185
Project Engineer 3	$175
Project Engineer 2	$165
Project Engineer 1	$155
Environmental Planner/Scientist 3	$165
Environmental Planner/Scientist 2	$155
Environmental Planner/Scientist 1	$145
Assistant Professional	$125
Sr. CAD Designer	$135
CAD Designer	$125
Sr. Graphic Designer/Artist	$125
Graphic Designer/Artist	$115
Sr. Project Accountant	$125
Project Accountant	$115
Sr. Project Administrator	$115
Project Administrator	$105
Expert Witness	Rate x 2.0
Project Technology & Communication (PTC) Charges	3% of Labor Charges
Travel and Subsistence	Actual Cost
Mileage Charges	IRS Rate
Subconsultants	Cost + 10%
Other Direct Costs	Cost + 10%

RMC
Water and Environment

December 30, 2011

South Sutter Water District
2452 Pacific Avenue
Trowbridge, CA 95659
Attn: Brad Arnold

San Bernardino Valley Municipal Water District
380 East Vanderbilt Way
San Bernardino, CA 942408
Attn: Douglas Hedrick

City of Napa, California
1340 Clay Street
Napa, CA 94559
Attn: Joy Eldredge

Palmdale Water District
2029 E. Avenue Q
Palmdale, CA 93550
Attn: Jon Pernula

Subject: Garden Bar Water and Power Project – Amended Agreement for Engineering Services with RMC Water and Environment

Dear Dirk, Joy, Jon, Doug, and Brad:

This letter serves as Amendment No. 2 to our Agreement for Engineering Services the Garden Bar Water and Power Project. This is a no-cost amendment that modifies the termination date of the original agreement as modified in Amendment 1, described below. This amendment does not change the overall authorized contract amount of $850,000 with a project contingency budget of $150,000 available upon written authorization of all parties. Note, at this time RMC is not requesting authorization of use of the contingency budget.

Please sign where indicated, return, and keep a copy for your records.

Sincerely,

Lyndel Melton, P.E.
Principal

1451 River Park Drive
Suite 142
Sacramento, CA 95815
916.999.8700 ph
916.564.1639 fax
www.rmcwater.com

Innovative Solutions for Water and the Environment

The Agreement for Engineering Services dated December 29, 2009 and amended March 21, 2011 is hereby amended as follows:

ARTICLE 3 - SCHEDULE

1. The Agreement shall commence on 12/31/2009 and terminate on the earlier of the completion of the project or 12/31/2012.

This amendment is hereby agreed to among all the parties.

South Sutter Water District

By: _____

Title: _____

Dated: _____

San Bernardino Valley Municipal Water District

By: Douglas D. Headrick

Title: General Manager

Dated: Feb. 7, 2012

City of Napa

By: _____

Title: _____

Dated: _____

Palmdale Water District

By: _____

Title: _____

Dated: _____

RMC Water and Environment

By: _____

Title: _____

Dated: _____

CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

RECEIVED

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General Manager
ROBIN L. OHAMA
Deputy General Manager
MATTHEW H. LITCHFIELD, P.E.
Director of Water Utility
JOHN A. CLAUS
Director of Water Reclamation
ROBIN L. OHAMA
Acting Director of Finance
VALERIE HOUSEL
Director of Environmental &
Regulatory Compliance

"Trusted, Quality Service since 1905"

September 16, 2009

Anthony Araiza
General Manager
West Valley Water District
P. O. Box 920
Rialto, CA 92377

Randy Van Gelder
General Manager
San Bernardino Valley Municipal Water District
P.O. Box 5906
San Bernardino, CA 92412-5906

Dear Messrs. Araiza, Van Gelder:

This will confirm the understanding reached today, September 16, 2009, regarding the contributions to replenishment to be made by West Valley Water District in conjunction with deliveries through the Baseline Feeder of water from the Bunker Hill Basin by the City of San Bernardino Municipal Water Department (San Bernardino).

As all parties are aware, for several years, San Bernardino has been producing treated water for delivery to the Baseline Feeder. San Bernardino Valley Municipal Water District (Valley District) pays San Bernardino for all direct costs related to the delivery and then bills West Valley Water District and the city of Rialto, based on allocated deliveries. Deliveries have been made pursuant to periodic negotiations and a purchase order between San Bernardino and Valley District. Last year, it is San Bernardino's understanding, West Valley Water District (WVWD) and Rialto asked Valley District for assurances that San Bernardino's deliveries would continue, at least for a short term. San Bernardino and Valley District began negotiating the terms of a three-year contract for delivery of water to the Baseline Feeder.

It was San Bernardino's position that the costs of the delivered water should include some amount for replenishment of the Bunker Hill Basin. Meanwhile, invoicing for fiscal year 2009/2010 has been delayed, pending resolution of the replenishment issue.

300 North "D" Street, San Bernardino, California 92418 P.O. Box 710, 92402 Phone: (909) 384-5141
FACSIMILE NUMBERS: Administration: (909) 384-5215 Engineering: (909) 384-5532 Customer Service: (909) 384-7211
Corporate Yards: (909) 384-5260 Water Reclamation Plant: (909) 384-5258

SBVMWD LEGAL
DOCUMENT 2255

The following represents our agreement:

1. For fiscal year 2009/2010, there will be **no** amount added for replenishment. This is because WVWD has already committed to pay $72,000 for approximately 1200 acre-feet of replenishment for water year 2009/2010; and

2. For the three-year contract period, in each of the contract years, WVWD agrees to pay Valley District for State Project Water to be delivered to Sweetwater, Devil Canyon and Waterman basins (at San Bernardino's choice) in an amount equal to the cost of one-quarter (1/4) of the amount of water delivered to the Baseline Feeder for WVWD's benefit.

An example: WVWD receives 3000 acre-feet delivered to it in Year 1 of the contract. WVWD pays Valley District (or allows Valley District to draw down from WVWD's account) the amount of money necessary to pay for 750 acre-feet of water. The possibility exists that Valley District will discount that water, thereby providing more water for the money

Thank you for your courtesy and cooperation in resolving this issue.

Very truly yours,

City of San Bernardino
Municipal Water Department

Stacey R. Aldstadt
General Manager

SRA:als

cc: DMS
R. Ohama, SBMWD
D. Headrick, Valley District
T. Crowley, WVWD
A. Hitchings, Somach

Please sign below to indicate your agreement and concurrence.

Anthony Araiza, WVWD — Date 9-28-09

Randy Van Gelder, Valley District — Date 9/28/2009

CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

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General Manager
ROBIN L. OHAMA
Deputy General Manager
MATTHEW H. LITCHFIELD, P.E.
Director of Water Utility
JOHN A. CLAUS
Director of Water Reclamation
WILLIAM M. KOLBOW, C.P.A
Director of Finance
JENNIFER L. SHEPARDSON
Director of Environmental &
Regulatory Compliance

"Trusted, Quality Service since 1905"

September 30, 2013

Mr. Douglas Headrick, P.E.
General Manager
San Bernardino Valley Municipal Water District
380 East Vanderbilt Way
San Bernardino, CA 92408

Dear Mr. Headrick:

The purpose of this letter is to extend the understanding reached on September 16, 2009, regarding the contributions to replenishment to be made by West Valley Water District (WVWD) and the City of Rialto in conjunction with deliveries through the Baseline Feeder of water from the Bunker Hill Basin by the City of San Bernardino Municipal Water Department (San Bernardino) via the Encanto Booster Station.

As all parties are aware, for several years, San Bernardino has been producing treated water for delivery to the Baseline Feeder. San Bernardino Valley Municipal Water District (Valley District) pays San Bernardino for all direct costs related to the delivery and then bills WVWD and the city of Rialto, based on allocated deliveries. Deliveries have been made pursuant to periodic negotiations and a purchase order between San Bernardino and Valley District. In 2012, Valley District and WVWD placed two (2) new wells online that make deliveries to the Baseline Feeder. This has reduced San Bernardino's deliveries to the Baseline Feeder significantly, especially during winter and spring months. However, San Bernardino continues to make periodic deliveries during the summer months through the Encanto Booster Station.

It continues to be San Bernardino's position that the costs of the delivered water should include a 25 percent replenishment obligation of the Bunker Hill Basin.

The following represents our agreement:

1. The term of this agreement will be for five (5) years.

2. For the five-year contract period, in each of the contract years, Valley District agrees to invoice the West Valley Water District and the City of Rialto for State Project Water to be delivered to the Waterman basin in an amount equal to the cost of one-quarter (1/4) of the amount of water delivered to the Baseline Feeder for WVWD's/Rialto's benefit through the Encanto Booster Station.

Thank you for your courtesy and cooperation.

Very truly yours,

City of San Bernardino
Municipal Water Department

Robin Ohama for
Stacey R. Aldstadt
General Manager

SRA:MHL:swd

cc: R. Ohama, SBMWD
A. Hitchings, Somach

Please sign below to indicate your agreement and concurrence.

Douglas H. Headrick
Douglas Headrick, Valley District

10/4/13
Date

CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

06 25 '10 AM 09 42 REC'D SBVMWD

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Deputy General Manager
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Director of Water Utility
JOHN A. CLAUS
Director of Water Reclamation
DON SHACKELFORD
Director of Finance
VALERIE HOUSEL
Director of Environmental &
Regulatory Compliance

June 17, 2010

Doug Headrick
General Manager
San Bernardino Valley
Municipal Water District
P.O. Box 5906
San Bernardino, CA 92412-5906

Reference: JOINT PROSECUTION AND COST-SHARING AGREEMENT RE PROPOSED RULE OF THE UNITED STATES FISH & WILDLIFE SERVICE TO DESIGNATE CRITICAL HABITAT FOR THE SANTA ANA SUCKER

Dear Mr. Headrick,

At the Regular Meeting of the Board of Water Commissioners of the City of San Bernardino held on Tuesday, June 15, 2010, the Board, in closed session, unanimously voted to approve the subject agreement; one fully execute original document is enclosed.

Sincerely,

Stacey Aldstadt

April Sanchez
Executive Secretary

als
Enclosures

cc: John Claus
Richard Katz

300 North "D" Street, San Bernardino, California 92418 P.O. Box 710, 92402 Phone: (909) 384-5141
FACSIMILE NUMBERS: Administration: (909) 384-5215 Engineering: (909) 384-5532 Customer Service: (909) 384-7211
Corporate Yards: (909) 384-5260 Water Reclamation Plant: (909) 384-5258

SBVMWD LEGAL
DOCUMENT 2275

JOINT PROSECUTION AND COST-SHARING AGREEMENT RE PROPOSED RULE OF THE UNITED STATES FISH & WILDLIFE SERVICE TO DESIGNATE CRITICAL HABITAT FOR THE SANTA ANA SUCKER

This Joint Prosecution and Cost-Sharing Agreement ("Agreement") is entered into by and among the undersigned (the "Parties"), as listed on Exhibit A hereto.

RECITALS

A. The Parties are cooperating on efforts to analyze, review and comment on the United States Fish & Wildlife Service's Proposed Rule to Designate Critical Habitat for the Santa Ana Sucker ("Proposed Rule"). The Proposed Rule may have negative consequences for the Parties, depending on the specifics of the finally adopted rule and the course of administrative proceedings on establishing the rule. The Parties have agreed to cooperate reasonably in efforts to analyze and comment upon the Proposed Rule. These cooperative efforts include the utilization of various experts and consultants to assist with the review of and preparation of comments on the Proposed Rule, and the provision of consulting expert opinions relative to the necessity, wisdom, and efficacy of potential challenges to it. These cooperative efforts are more particularly described in the scopes of work attached hereto as Exhibits B, C, and D, and incorporated herein by this reference.

B. Through this Agreement, the Parties desire to govern their payment of costs and fees arising from their cooperative efforts related to the retention and use of consulting experts on the Proposed Rule, and to confirm their common interests in maintaining a joint prosecution with respect to the Proposed Rule, to allow them to continue to share information related to the Proposed Rule, while continuing to preserve, to the fullest extent possible, the protections of the attorney-client privilege, work product privilege, common-interest doctrine, deliberative process

attorney-client privilege, work product privilege, common-interest doctrine, deliberative process privilege, executive privilege, privileges regarding mediation or settlement communications, or any other privilege or protection existing under state or federal law.

AGREEMENT

NOW, THEREFORE, in consideration of the above recitals, and the mutual covenants and conditions contained herein, the Parties agree as follows:

1. The Parties shall each initially contribute the sum of $32,000, (except Big Bear Municipal Water District which shall contribute $20,000) which represents each Party's per capita contribution to pay for the fees and costs collectively incurred in their said cooperative efforts on the Proposed Rule. San Bernardino Valley Municipal Water District shall have the responsibility for collecting each Party's contribution of funds, processing invoices submitted by the experts and consultants pursuant to their scopes of work attached hereto, coordinating communications among the Parties to the retained consulting experts, and for maintaining an accurate accounting of this administration of funds. In the event that additional tasks and associated costs are identified in order to meet the joint goals, the Parties will work cooperatively to fund such costs. However, nothing in this Agreement shall be construed to require a Party to pay more than its above-referenced initial per capita contribution towards the total cost for the current scopes of work, which is estimated to be $407,000.

2. For purposes of this Agreement, "Joint Prosecution Materials" includes, but is not limited to, all communications (including communications related to the Proposed Rule made prior to the execution of this Agreement), factual materials, mental impressions, legal analyses,

theories or strategies, memoranda, reports, notes, emails or any other communications or documents that are protected from disclosure by the attorney-client privilege, work product privilege, deliberative process privilege, executive privilege, common-interest doctrine, joint prosecution/defense doctrine, privileges regarding mediation or settlement communications, or any other privilege or protection existing under state or federal law, and that are exchanged among the Parties and/or their respective counsel in connection with the Proposed Rule. Joint Prosecution Materials do not include final versions of any correspondence, studies, or reports prepared by or on behalf of one or more Parties intended for review by the United States Fish & Wildlife Service or a non-Party.

3. The Parties will maintain as confidential all Joint Prosecution Materials (as defined above). Disclosure of Joint Prosecution Materials shall be limited to the Parties and their employees and contractors as well as any counsel, consultants, and lobbyists retained by the parties, or on behalf of the parties, for the purpose of maintaining a joint prosecution with respect to the Proposed Rule, subject to the further provisions of this Agreement.

4. Any Joint Prosecution Materials shared or transmitted by or between Parties should be clearly designated "CONFIDENTIAL: JOINT PROSECUTION MATERIALS." However, the failure to include such designation shall not preclude such materials from being afforded the protections of this Agreement and shall not be construed to constitute a waiver of any privilege or other protection.

5. Each Party shall take all appropriate measures to ensure that any person who is granted access to Joint Prosecution Materials is familiar with the terms of this Agreement and complies with those terms.

6. Each Party is represented by its own respective legal counsel in connection with the Proposed Rule, and the cooperative efforts referenced herein. Said legal counsel will not have an attorney-client relationship with any other Party to this Agreement as a result of the legal counsel's participation in discussions and actions related to the Parties' cooperative efforts on the Proposed Rule. Similarly, said legal counsel will not have a duty of loyalty or confidentiality to any Party to this Agreement other than the legal counsel's specific client(s), and consequently, no Party may seek to disqualify the legal counsel for another Party as a result of the legal counsel's participation in discussions and actions related to the Parties' cooperative efforts on the Proposed Rule.

7. Except where required by the order of a court of competent jurisdiction, or by the prior written consent of the remaining Parties, a Party will not reveal to non-Parties any Joint Prosecution Materials it has received from another Party.

8. Each Party shall notify the Party that generated any Joint Prosecution Materials of any request to disclose the Joint Prosecution Materials to any non-Party, or of any proceeding before any court, administrative agency, or tribunal to compel the disclosure of such Joint Prosecution Materials, as soon as practicable after receipt of such request or the initiation of such proceeding. If a Party becomes subject to any judicial or administrative order purporting to compel release of Joint Prosecution Materials, that Party shall: (a) promptly notify the Party that generated the materials and all remaining Parties, and (b) make all reasonable efforts to give that Party an opportunity to protect the Joint Prosecution Materials.

9. No party is required to treat as confidential within the meaning of this Agreement any material where such material is, or hereafter becomes (without violation of this Agreement),

public record, public knowledge, or is obtained from sources other than exchanges under this Agreement.

10. The sharing of Joint Prosecution Materials among the Parties is not intended to and will not constitute a waiver of any privilege or other protection of confidentiality, including but not limited to the attorney-client privilege, work product privilege, common-interest doctrine, deliberative process privilege, executive privilege, privileges relating to mediation or settlement communications, or any other privilege or protection existing under state or federal law.

11. Execution of this Agreement constitutes the mutual agreement of the Parties that any sharing of Joint Prosecution Materials among themselves is reasonably necessary for the accomplishment of the Parties' common purposes as described above. Any sharing of Joint Prosecution Materials among the Parties is in reliance on this Agreement and the protections that arise from the Parties' common interests in reviewing and commenting on the Proposed rule.

12. Nothing in this Agreement shall obligate any Party to exchange documents or information with any other Party, whether or not such documents or information would be covered by this Agreement as Joint Prosecution Materials.

13. By this Agreement the Parties each acknowledge and agree that cooperation in the matters referenced above may involve the communication and sharing of confidential information and further agree that the interests of the Parties are not adverse as to matters within the scope of this Agreement. Each of the Parties has had a full opportunity to consult with separate counsel, is fully informed, and has concluded that the risk of any potential conflict of interest is outweighed by the benefits and efficiencies afforded by the opportunities for cooperation and sharing of Joint Prosecution Materials as provided for herein. The Parties consent to the sharing of Joint Prosecution Materials among their counsel, waive any potential

conflict of interest created thereby, and mutually agree that this sharing of Joint Prosecution Materials and cooperation shall not constitute grounds for seeking disqualification of counsel in any matter or action.

14. If there is a breach of this Agreement by a Party, the Parties agree that the non-breaching Party will have no adequate remedy at law in money or damages and shall be entitled to seek and obtain, in addition to all other remedies that may be available, a temporary restraining order, injunctive relief, or other equitable relief against the breach or its continuance.

15. Nothing in this Agreement shall be construed to waive any rights, claims, or privileges that any Party shall have against another Party or any other person or entity.

16. This Agreement shall be binding upon the successors and assigns of the Parties.

17. This Agreement is made under, and shall be construed in accordance with, the laws of the State of California.

18. The individuals signing this Agreement in a representative capacity warrant that they have the authority to do so on behalf of the entity or entities they represent, and further agree that as representatives of the entity or entities that they respectively represent, they themselves are bound by all terms of this Agreement.

19. Any Party may withdraw from this Agreement by providing written notice to the other Parties. If a Party withdraws from this Agreement, the provisions of this Agreement shall continue to apply to the Joint Prosecution Materials that were shared during the time period when that Party was a party to this Agreement.

20. All notices and other communications required to be given to a Party under the terms of this Agreement (a) shall be in writing, (b) shall be personally delivered, or transmitted by facsimile or email, and (c) shall be directed to such Party at the address, facsimile number or

email address specified below, or at such other address, facsimile number or email address as such Party may hereafter designate by notice in accordance with this paragraph.

21. This Agreement may be executed in counterparts, each of which so executed shall be deemed an original irrespective of the date of the execution, and said counterparts shall together constitute one and the same Agreement. Further, facsimile or .PDF copies of signatures shall be as effective as original signatures for evidencing execution of this Agreement.

By: Stacey Aldstadt

Print Name: Stacey Aldstadt

Date: June 17, 2010

Title: General Manager

Representing: City of San Bernardino Municipal Water Department

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

Exhibit A

List of Parties

As of June 8, 2010

1. San Bernardino Valley Municipal Water District
2. Western Municipal Water District of Riverside County
3. City of Riverside Public Utilities
4. City of San Bernardino Municipal Water Department
5. San Bernardino Valley Water Conservation District
6. Southern California Edison
7. East Valley Water District
8. City of Highland
9. City of Redlands
10. Yucaipa Valley Water District
11. San Bernardino County Flood Control District
12. Bear Valley Mutual Water Company/Crafton Water Company
13. Big Bear Municipal Water District ($20,000 share)

Other Possible Partner Agencies

1. West Valley Water District
2. Raymond Basin Management Board/San Gabriel Valley Water Association
3. City of Colton
4. City of Rialto
5. Riverside County Flood Control District
6. Orange County Flood Conrol District

Exhibit B

SCOPE OF WORK AND BUDGET

22 April 2010

ACTIVITIES ASSOCIATED WITH RESPONDING TO THE PROPOSED RESESIGNATION OF CRITICAL HABITAT FOR THE SANTA ANA SUCKER

Task 1. General Consulting Assistance

PBS&J (Leidy and colleagues) will assist the Santa Ana Sucker (SAS) Task Force, as requested, with assignments not included in other tasks. Budgeting for this task assumes that this task covers two time periods: 1 April through 30 Jun 2010 and 1 July through 31 December 2010. The period from 1 April through 30 July 2010, a period of 13 weeks, assumes an average labor commitment of 4 hours per week ($11,700 labor). Other direct costs are estimated at $1,000 for this same period (air fare, rental car, etc.). Total budget through 30 June 2010: $12,700. Post 30 June through 31 December 2010 labor budget (26 weeks) with the same assumptions: $23,400. Other direct costs: $2,000. Total budget from July through December: $25,400. Grand total budget (Labor and other direct costs) for this task from 1 April through 31 December 2010: $38,100.

Task 2. Attendance as SAS Conservation Team and Other Relevant Meetings

This task has been consolidated into this scope of work and budget from PBS&J Project No. 100012843 which was initiated on 1 March 2010. Leidy will attend up to 10 meetings of the SAWPA Santa Ana Sucker Conservation Team (including the Restoration Working Group) and the Southern California Native Aquatic Fauna Working Group between 1 March 2020 and 31 December 2010 for the purpose of providing input to the interested parties on the introduction of the SAS in the Santa Ana River watershed, and to gather information on the proposed activities of these groups. Each attendance is expected to be a one-day event. Leidy will summarize in writing the content of each meeting related to SAS issues along with any recommendations for actions on the part of the SAS Task Force. Each meeting is expected to require up to 8 hours in travel and meeting time, plus travel expenses (airfare, rental car and gas, one meal, and personal vehicle mileage. Labor budget (meetings plus write-ups) at 9 hours per meeting plus 0.5 hours administrative time per meeting: $20,900 (Before 30 June 2010: $5,225; Post 30 June 2010: $15,675). Other direct costs: $4,300 (Before 30 June: $1,075; Post 30 June 2010: $3,225). Total

labor and other direct before 30 June: $6,300. Total labor and other direct costs post 30 June 2010: $18,900. Total labor and other direct costs from 1 March through 31 December 2010: $25,200.

Task 3. SAS Enhancement Plan and Project Implementation

There are two phases to this task.

Phase 1

Leidy, working closely with Sam Fuller, is charged with developing a plan to enhance the survival of the SAS population within its existing range in the Santa Ana River basin. The focus geographically will be from the Rialto Drain downstream to the Imperial Highway. This is the reach of the Santa Ana River that currently supports or recently supported the SAS and the reach that will have the greatest probability of implementing a successful project. The plan may include upland sites within this general river reach. The plan will contain appropriate adaptive management elements focused in the short-term on stabilizing the SAS population in the Santa Ana River. The goal is to have one on-the-ground project in place by the end of September 2010. Specific constraints and milestones of the plan are:

- The project must be completed by 30 September 2010;
- The project design must avoid any permitting requirements (other than permission from the USFWS to capture, move, rear, and reintroduce SAS) to meet the schedule (i.e., no 404, 401, 1602, or other permits);
- The project should focus on improving spawning and/or juvenile rearing habitat for the SAS, if feasible;
- Leidy et al. will meet with the USFWS (Ren Lohoefener, Pacific Southwest Regional Director) to present the plan and request approval to move SAS to the project site, if necessary;
- Leidy et al. will request concurrence from the California Department of Fish and Game (Curt Taucher, Regional Manager), and will also request that CDFG release up to $200,000 in funding already provided by San Bernardino Valley Municipal Water District and Western Municipal Water District to CDFG under the terms of the water rights settlement with CDFG; and
- Post-project monitoring and O&M will be required.

To assist with Phase I, Leidy will engage the expert services of Dr. Camm Swift (ENTRIX, Inc.), Dr. Jonathan Baskin (San Marino Environmental Associates), and Kerwin Russell (Riverside-

Corona Resource Conservation District), as necessary, to design the project. Phase 1 has substantial unknowns at this time relative to the difficulty of implementing a project. If the process goes smoothly (for example, the project can make use of existing facilities at the RCRCD), then the cost will be less than the cost estimated herein. Leidy has budgeted a moderate level-of-effort, but by no means a highly complicated or expensive scenario. Planning for Task 3, Phase 1, is to be completed prior to 30 June 2010. The budget is based on all activities undertaken prior to 1 July 2010 and does not include Phase 1 construction-related planning or construction implementation. The budget breakdown is presented in the attached table. The total budget prior to 1 July 2010: $39,120. The total budget for the period from July through December 2010: $65,480. Total Task 3, Phase 1 budget for 2010: $104,600.

Phase 2

Phase 2 is a longer term continuation of Phase 1 that will occur over a two to three-year schedule at a funding level of approximately $100,000 to $150,000 per year. Phase 2 will develop additional projects that enhance and stabilize the SAS population within its existing range in the Santa Ana River basin. Project undertaken during this phase may require permitting and may focus on any activity that enhances SAS survival or improves habitat. Phase 2 is not budgeted at this time and will not be budgeted until Phase 1 is completed and we know better the level-of-effort required to continue with additional projects.

Task 4. Alternative Streams Investigation

This task will focus on evaluating the feasibility of establishing SAS populations elsewhere in the Santa Ana River basin outside of the current range of the species. New refugia for the SAS will be evaluated taking into consideration the following:

- Location relative to the parent population and existing infrastructure;
- Selection criteria for evaluating the suitability of specific locations to support viable populations of the SAS over time, including a risk analysis of potential threats; and
- Financial and institutional requirements to create, maintain, and monitor SAS populations at selected locations.

Leidy et al. will evaluate a select number of tributaries to the Santa Ana River that may contain the PCEs necessary to support an introduced SAS population in the future. This investigation will be at the reconnaissance level and the product will be a report presenting the results. Task 4 will be initiated prior to 30 June 2010, and will be completed prior to the end of calendar year 2010. Leidy will use experienced, mid-level fish biologists from PBS&J to assist with this task to contain costs. Approximately 25 streams will be evaluated. The evaluation will also include

site visits to confirm environmental conditions. A records search of resource agency files may also be required.

The labor costs incurred prior to 1 July 2010 will be for information gathering and site visits. This cost is estimated at $11,200. Other direct costs prior to 1 July: $3,500. Total budget prior to 1 July: $14,700. Completion of the report following 30 June 2010 is estimated at $11,200. Other direct costs after 30 June: $500. Total budget after 30 June: $11,700. Total budget for task: $26,400.

Task 5. Additional Responses to the Economic Study

Leidy will provide additional comments, if necessary, on the draft economic study issued by the USFWS. This effort is estimated at 24 hours labor ($5,400) plus other direct costs ($400), for a total budget of $5,800.

Budget Summary for the Proposed Scope of Work

Task	1 March-30 June ($)	1 July-31 December ($)	Total ($)
1	12,700	25,400	38,100
2	6,300	18,900	25,200
3	39,120	65,480	104,600
4	14,700	11,700	26,400
5	5,800	0	5,800
Total	78,620	121,480	200,100

Exhibit C

Legal Budget/Scope
Santa Ana Sucker Critical Habitat Designation

Best, Best & Krieger LLP on behalf of the Western Municipal Water District and City of Riverside and Downey Brand, LLP on behalf of the San Bernardino Valley Municipal Water District will undertake the tasks described in this Exhibit and will do so in cooperation with other Task Force members and their attorneys

Task 1 – General Coordination

This task involves general coordination efforts with the Santa Ana sucker task force and attendance at the monthly task force meetings. For purposes of the budget/scope, we have assumed that the task force will meet monthly from April through September and then meet in either October or November.

Task 2 Preparation of Comments on Economic Analysis

Task 2.1 involves legal coordination with John Husing as he prepares his comments based on the project descriptions submitted by participating agencies. We anticipate that most of those comments will focus on the economic impacts of critical habitat designation, but we anticipate some need to work with Husing to establish the legal framework for his analysis.

Task 2.2 involves the attendance at the Fish & Wildlife Service hearing on the economic analysis.

Task 3. Preparation of Enhancement Project

Task 3.1 involves legal coordination with Roy Leidy as he works with Camm Swift and John Baskin to develop the proposed Santa Ana sucker enhancement project.

Task 3.2 involves preparing for and meeting with officials at the Fish & Wildlife Service to obtain their consent to the implementation of the project(s) developed by Leidy, Swift and Baskin.

Task 3.3 involves the negotiation of a safe harbor agreement, a 10(j) population designation, or other legal/regulatory means to ensure that the Santa Ana task force parties' projects are fully protected from limits caused by the enhancement efforts.

Task 4. Review and Client Advice on Final Rule

This task involves review of the final critical habitat designation rule once it is issued by the Fish & Wildlife Service and advising the Santa Ana sucker task force about potential avenues in light of that designation.

Santa Ana Sucker Critical Habitat Designation
Legal Budget

Task	April 1 to June 30, 2010		July 1 to December 31, 2010		Contingency (10%)	Total
	Hours	Fees/Costs	Hours	Fees/Costs		
Task 1 -- General Coordination	50	$15,000	70	$21,000	$3,600	$39,600
Task 2 -- Preparation of Comments on Economic Impacts of Designation	30	$9,000	70	$21,000	$2,103	$32,103
Task 2.1 Coordination with John Husing	0	$0	20	$6,000	$600	$6,600
Task 2.2 Attendance at FWS Hearing						
Task 3 -- Preparation of Enhancement Project	50	$15,000	25	$7,500	$755	$23,255
Task 3.1 Coordination with Roy Leidy	25	$7,500	20	$6,000	$603	$14,103
Task 3.2 Meetings with FWS	30	$9,000	100	$30,000	$3,003	$42,003
Task 3.3 Negotiation of Safe Harbor Agreement						
Task 4 Review and advice on Final Rule	0	$0	40	$12,000	$1,200	$13,200
Total	**185**	**$55,500**	**345**	**$103,500**	**$11,864**	**$170,864**

Exhibit D

RK

Stacey Aldstadt, Esq
General Manager
City of San Bernardino Municipal
Water Department
444-D, Rialto
San Bernardino, CA 92410

June 4, 2010

Dear Stacey;

The purpose of this letter is to summarize and confirm the term and conditions of the agreement by Richard Katz Consulting Inc, ("Consultant") and X the City of San Bernardino Municipal Water Department ("SBMWD") ("Client").

SCOPE OF SERVICES

The Client retains Consultant to provide strategic advice as it relates to the Federal Governments effort on the Santa Ana Sucker Critical Habitat Designation. Consultant shall offer a critical political overlay to the efforts of the government relations teams representing the member agencies of the Santa Ana Sucker Task Force in Washington, DC. Efforts shall include but not be limited to review of current strategy, assistance in developing new and innovative strategy going forward, and coordination of efforts with federal, state and local entities.

PROFESSIONAL FEES

In compensation for the services performed by Consultant on behalf of Client, as outlined above, Client agrees to pay Consultant a monthly retainer of $5,000 per month for 90-days and $3,500 per month on-going until the issue is resolved, beginning June 1, 2010.

REIMBURSEMENT OF EXPENSES INCURRED

Client will reimburse Consultant on a monthly basis for any out-of-pocket expenses reasonably incurred by Consultant on its behalf including, but not limited to, document reproduction charges, facsimile charges, long distant telephone calls, travel expenses and messenger fees. Consultant will send a statement of expenses incurred each month. No expenditure in excess of five Hundred Dollars ($500.00) per month will be made without prior written consent from Client.

TERMINATION

Either party upon thirty (30) days written notice to the other party may terminate this agreement. In the event of such termination, Consultant shall bill Client for all professional services, independent contractor expenses and other costs incurred up to the date of termination.

NO REPRESENTATION THAT PERMITS OR SERVICES WILL BE APPROVED OR SUCCESSFUL

It is impossible to predict the approval or non-approval of any action, which requires discretionary government action. Consequently, while consultant will conscientiously perform all of its responsibilities outlined above, we cannot and do not make any representation to Client that any of the services discussed herein will be granted, acknowledged or approved by any governmental or public jurisdiction. Client acknowledges that none of its obligations under this letter agreement is dependent or conditioned upon approval of any service.

Consultant, its employees and associates, shall not be individually or collectively liable to client, or any party claiming through Client, for any damages resulting from the denial of any discretionary permits or from errors or omissions in

connection with any services provided hereunder for any reason other than willful misconduct.

Consultant shall not be liable to Client, or any party claiming through Client, for any damages resulting from the denial of the application of any governmental approval or service.

ATTORNEY'S FEES

In the event that any litigation is commenced concerning any provision of this letter agreement, the prevailing party will be entitled to recover, in addition to any other relief granted by the court, a reasonable sum for its attorney's fees incurred in the litigation.

CONCLUSION

We believe that the above terms and conditions accurately summarize our agreement for the performance of services related to the project. If you concur, please indicate your approval and acceptance by dating, signing and returning this letter agreement. We have enclosed a signed copy of this letter for your records.

We are very pleased that we are able to be of service to you and look forward to working with you.

All the Best,



Richard Katz

AGREED AND ACCEPTED;
City of San Bernardino Municipal Water Department

By: _____ Date

Stacey Aldstadt, Esq.

JOINT PROSECUTION AND COST-SHARING AGREEMENT RE PROPOSED RULE OF THE UNITED STATES FISH & WILDLIFE SERVICE TO DESIGNATE CRITICAL HABITAT FOR THE SANTA ANA SUCKER

This Joint Prosecution and Cost-Sharing Agreement ("Agreement") is entered into by and among the undersigned (the "Parties"), as listed on Exhibit A hereto.

RECITALS

A. The Parties are cooperating on efforts to analyze, review and comment on the United States Fish & Wildlife Service's Proposed Rule to Designate Critical Habitat for the Santa Ana Sucker ("Proposed Rule"). The Proposed Rule may have negative consequences for the Parties, depending on the specifics of the finally adopted rule and the course of administrative proceedings on establishing the rule. The Parties have agreed to cooperate reasonably in efforts to analyze and comment upon the Proposed Rule. These cooperative efforts include the utilization of various experts and consultants to assist with the review of and preparation of comments on the Proposed Rule, and the provision of consulting expert opinions relative to the necessity, wisdom, and efficacy of potential challenges to it. These cooperative efforts are more particularly described in the scopes of work attached hereto as Exhibits B, C, and D, and incorporated herein by this reference.

B. Through this Agreement, the Parties desire to govern their payment of costs and fees arising from their cooperative efforts related to the retention and use of consulting experts on the Proposed Rule, and to confirm their common interests in maintaining a joint prosecution with respect to the Proposed Rule, to allow them to continue to share information related to the Proposed Rule, while continuing to preserve, to the fullest extent possible, the protections of the attorney-client privilege, work product privilege, common-interest doctrine, deliberative process

privilege, executive privilege, privileges regarding mediation or settlement communications, or any other privilege or protection existing under state or federal law.

AGREEMENT

NOW, THEREFORE, in consideration of the above recitals, and the mutual covenants and conditions contained herein, the Parties agree as follows:

1. The Parties shall each initially contribute the sum of $32,000, (except Big Bear Municipal Water District which shall contribute $20,000) which represents each Party's per capita contribution to pay for the fees and costs collectively incurred in their said cooperative efforts on the Proposed Rule. San Bernardino Valley Municipal Water District shall have the responsibility for collecting each Party's contribution of funds, processing invoices submitted by the experts and consultants pursuant to their scopes of work attached hereto, coordinating communications among the Parties to the retained consulting experts, and for maintaining an accurate accounting of this administration of funds. In the event that additional tasks and associated costs are identified in order to meet the joint goals, the Parties will work cooperatively to fund such costs. However, nothing in this Agreement shall be construed to require a Party to pay more than its above-referenced initial per capita contribution towards the total cost for the current scopes of work, which is estimated to be $407,000.

2. For purposes of this Agreement, "Joint Prosecution Materials" includes, but is not limited to, all communications (including communications related to the Proposed Rule made prior to the execution of this Agreement), factual materials, mental impressions, legal analyses, theories or strategies, memoranda, reports, notes, emails or any other communications or

documents that are protected from disclosure by the attorney-client privilege, work product privilege, deliberative process privilege, executive privilege, common-interest doctrine, joint prosecution/defense doctrine, privileges regarding mediation or settlement communications, or any other privilege or protection existing under state or federal law, and that are exchanged among the Parties and/or their respective counsel in connection with the Proposed Rule. Joint Prosecution Materials do not include final versions of any correspondence, studies, or reports prepared by or on behalf of one or more Parties intended for review by the United States Fish & Wildlife Service or a non-Party.

3. The Parties will maintain as confidential all Joint Prosecution Materials (as defined above). Disclosure of Joint Prosecution Materials shall be limited to the Parties and their employees and contractors as well as any counsel, consultants, and lobbyists retained by the parties, or on behalf of the parties, for the purpose of maintaining a joint prosecution with respect to the Proposed Rule, subject to the further provisions of this Agreement.

4. Any Joint Prosecution Materials shared or transmitted by or between Parties should be clearly designated "CONFIDENTIAL: JOINT PROSECUTION MATERIALS." However, the failure to include such designation shall not preclude such materials from being afforded the protections of this Agreement and shall not be construed to constitute a waiver of any privilege or other protection.

5. Each Party shall take all appropriate measures to ensure that any person who is granted access to Joint Prosecution Materials is familiar with the terms of this Agreement and complies with those terms.

6. Each Party is represented by its own respective legal counsel in connection with the Proposed Rule, and the cooperative efforts referenced herein. Said legal counsel will not

have an attorney-client relationship with any other Party to this Agreement as a result of the legal counsel's participation in discussions and actions related to the Parties' cooperative efforts on the Proposed Rule. Similarly, said legal counsel will not have a duty of loyalty or confidentiality to any Party to this Agreement other than the legal counsel's specific client(s), and consequently, no Party may seek to disqualify the legal counsel for another Party as a result of the legal counsel's participation in discussions and actions related to the Parties' cooperative efforts on the Proposed Rule.

7. Except where required by the order of a court of competent jurisdiction, or by the prior written consent of the remaining Parties, a Party will not reveal to non-Parties any Joint Prosecution Materials it has received from another Party.

8. Each Party shall notify the Party that generated any Joint Prosecution Materials of any request to disclose the Joint Prosecution Materials to any non-Party, or of any proceeding before any court, administrative agency, or tribunal to compel the disclosure of such Joint Prosecution Materials, as soon as practicable after receipt of such request or the initiation of such proceeding. If a Party becomes subject to any judicial or administrative order purporting to compel release of Joint Prosecution Materials, that Party shall: (a) promptly notify the Party that generated the materials and all remaining Parties, and (b) make all reasonable efforts to give that Party an opportunity to protect the Joint Prosecution Materials.

9. No party is required to treat as confidential within the meaning of this Agreement any material where such material is, or hereafter becomes (without violation of this Agreement), public record, public knowledge, or is obtained from sources other than exchanges under this Agreement.

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11. Execution of this Agreement constitutes the mutual agreement of the Parties that any sharing of Joint Prosecution Materials among themselves is reasonably necessary for the accomplishment of the Parties' common purposes as described above. Any sharing of Joint Prosecution Materials among the Parties is in reliance on this Agreement and the protections that arise from the Parties' common interests in reviewing and commenting on the Proposed rule.

12. Nothing in this Agreement shall obligate any Party to exchange documents or information with any other Party, whether or not such documents or information would be covered by this Agreement as Joint Prosecution Materials.

13. By this Agreement the Parties each acknowledge and agree that cooperation in the matters referenced above may involve the communication and sharing of confidential information and further agree that the interests of the Parties are not adverse as to matters within the scope of this Agreement. Each of the Parties has had a full opportunity to consult with separate counsel, is fully informed, and has concluded that the risk of any potential conflict of interest is outweighed by the benefits and efficiencies afforded by the opportunities for cooperation and sharing of Joint Prosecution Materials as provided for herein. The Parties consent to the sharing of Joint Prosecution Materials among their counsel, waive any potential conflict of interest created thereby, and mutually agree that this sharing of Joint Prosecution

Materials and cooperation shall not constitute grounds for seeking disqualification of counsel in any matter or action.

14. If there is a breach of this Agreement by a Party, the Parties agree that the non-breaching Party will have no adequate remedy at law in money or damages and shall be entitled to seek and obtain, in addition to all other remedies that may be available, a temporary restraining order, injunctive relief, or other equitable relief against the breach or its continuance.

15. Nothing in this Agreement shall be construed to waive any rights, claims, or privileges that any Party shall have against another Party or any other person or entity.

16. This Agreement shall be binding upon the successors and assigns of the Parties.

17. This Agreement is made under, and shall be construed in accordance with, the laws of the State of California.

18. The individuals signing this Agreement in a representative capacity warrant that they have the authority to do so on behalf of the entity or entities they represent, and further agree that as representatives of the entity or entities that they respectively represent, they themselves are bound by all terms of this Agreement.

19. Any Party may withdraw from this Agreement by providing written notice to the other Parties. If a Party withdraws from this Agreement, the provisions of this Agreement shall continue to apply to the Joint Prosecution Materials that were shared during the time period when that Party was a party to this Agreement.

20. All notices and other communications required to be given to a Party under the terms of this Agreement (a) shall be in writing, (b) shall be personally delivered, or transmitted by facsimile or email, and (c) shall be directed to such Party at the address, facsimile number or

email address specified below, or at such other address, facsimile number or email address as such Party may hereafter designate by notice in accordance with this paragraph.

21. This Agreement may be executed in counterparts, each of which so executed shall be deemed an original irrespective of the date of the execution, and said counterparts shall together constitute one and the same Agreement. Further, facsimile or .PDF copies of signatures shall be as effective as original signatures for evidencing execution of this Agreement.

By: _____

Print Name: Scott Henle

Date: 6/17/10

Title: Gen. Mgr.

Representing: By Bean MWD

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

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2. Raymond Basin Management Board/San Gabriel Valley Water Association
3. City of Colton
4. City of Rialto
5. Riverside County Flood Control District
6. Orange County Flood Conrol District

RAYMOND BASIN MANAGEMENT BOARD

City of Alhambra

City of Arcadia

California-American Water Company

East Pasadena Water Company

H.E. Huntington Library and Art Gallery

Kinneloa Irrigation District

La Cañada Irrigation District

Las Flores Water Company

Lincoln Avenue Water Company

Pasadena Cemetery Association

City of Pasadena

Rubio Cañon Land and Water Association

San Gabriel County Water District

City of Sierra Madre

Sunny Slope Water Company

Valley Water Company

July 26, 2010

Mr. Douglas Headrick
General Manager
San Bernardino Valley Municipal Water District
P.O. Box 5906
San Bernardino CA 92412-5906

Dear Mr. Headrick:

At its Regular Quarterly Board Meeting on July 21, 2010, the Raymond Basin Management Board authorized entering into the Joint Prosecution and Cost Sharing Agreement RE Proposed Rule of the United States Fish and Wildlife Service to Designate Critical Habitat for The Santa Ana Sucker. Please find enclosed an original executed agreement for your files.

Should you have any questions please feel free to call me at (626) 815-1300.

Sincerely,

Anthony C. Zampiello
Executive Officer

725 North Azusa Avenue • Azusa, CA 91702 • 626.815.1300 • Fax 626.815.1303
http://www.raymondbasin.org

JOINT PROSECUTION AND COST-SHARING AGREEMENT RE PROPOSED RULE OF THE UNITED STATES FISH & WILDLIFE SERVICE TO DESIGNATE CRITICAL HABITAT FOR THE SANTA ANA SUCKER

This Joint Prosecution and Cost-Sharing Agreement ("Agreement") is entered into by and among the undersigned (the "Parties"), as listed on Exhibit A hereto.

RECITALS

A. The Parties are cooperating on efforts to analyze, review and comment on the United States Fish & Wildlife Service's Proposed Rule to Designate Critical Habitat for the Santa Ana Sucker ("Proposed Rule"). The Proposed Rule may have negative consequences for the Parties, depending on the specifics of the finally adopted rule and the course of administrative proceedings on establishing the rule. The Parties have agreed to cooperate reasonably in efforts to analyze and comment upon the Proposed Rule. These cooperative efforts include the utilization of various experts and consultants to assist with the review of and preparation of comments on the Proposed Rule, and the provision of consulting expert opinions relative to the necessity, wisdom, and efficacy of potential challenges to it. These cooperative efforts are more particularly described in the scopes of work attached hereto as Exhibits B, C, and D, and incorporated herein by this reference.

B. Through this Agreement, the Parties desire to govern their payment of costs and fees arising from their cooperative efforts related to the retention and use of consulting experts on the Proposed Rule, and to confirm their common interests in maintaining a joint prosecution with respect to the Proposed Rule, to allow them to continue to share information related to the Proposed Rule, while continuing to preserve, to the fullest extent possible, the protections of the attorney-client privilege, work product privilege, common-interest doctrine, deliberative process

privilege, executive privilege, privileges regarding mediation or settlement communications, or any other privilege or protection existing under state or federal law.

AGREEMENT

NOW, THEREFORE, in consideration of the above recitals, and the mutual covenants and conditions contained herein, the Parties agree as follows:

1. The Parties shall each initially contribute the sum of $32,000, (except Big Bear Municipal Water District, which shall contribute $20,000, and Raymond Basin Management Board/San Gabriel Valley Water Association, which shall not be required to contribute funds because of their location outside the Santa Ana River watershed) which represents each Party's per capita contribution to pay for the fees and costs collectively incurred in their said cooperative efforts on the Proposed Rule. San Bernardino Valley Municipal Water District shall have the responsibility for collecting each Party's contribution of funds, processing invoices submitted by the experts and consultants pursuant to their scopes of work attached hereto, coordinating communications among the Parties to the retained consulting experts, and for maintaining an accurate accounting of this administration of funds. In the event that additional tasks and associated costs are identified in order to meet the joint goals, the Parties will work cooperatively to fund such costs. However, nothing in this Agreement shall be construed to require a Party to pay more than its above-referenced initial per capita contribution towards the total cost for the current scopes of work, which is estimated to be $407,000.

2. For purposes of this Agreement, "Joint Prosecution Materials" includes, but is not limited to, all communications (including communications related to the Proposed Rule made prior to the execution of this Agreement), factual materials, mental impressions, legal analyses, theories or strategies, memoranda, reports, notes, emails or any other communications or

documents that are protected from disclosure by the attorney-client privilege, work product privilege, deliberative process privilege, executive privilege, common-interest doctrine, joint prosecution/defense doctrine, privileges regarding mediation or settlement communications, or any other privilege or protection existing under state or federal law, and that are exchanged among the Parties and/or their respective counsel in connection with the Proposed Rule. Joint Prosecution Materials do not include final versions of any correspondence, studies, or reports prepared by or on behalf of one or more Parties intended for review by the United States Fish & Wildlife Service or a non-Party.

3. The Parties will maintain as confidential all Joint Prosecution Materials (as defined above). Disclosure of Joint Prosecution Materials shall be limited to the Parties and their employees and contractors as well as any counsel, consultants, and lobbyists retained by the parties, or on behalf of the parties, for the purpose of maintaining a joint prosecution with respect to the Proposed Rule, subject to the further provisions of this Agreement.

4. Any Joint Prosecution Materials shared or transmitted by or between Parties should be clearly designated "CONFIDENTIAL: JOINT PROSECUTION MATERIALS." However, the failure to include such designation shall not preclude such materials from being afforded the protections of this Agreement and shall not be construed to constitute a waiver of any privilege or other protection.

5. Each Party shall take all appropriate measures to ensure that any person who is granted access to Joint Prosecution Materials is familiar with the terms of this Agreement and complies with those terms.

6. Each Party is represented by its own respective legal counsel in connection with the Proposed Rule, and the cooperative efforts referenced herein. Said legal counsel will not

have an attorney-client relationship with any other Party to this Agreement as a result of the legal counsel's participation in discussions and actions related to the Parties' cooperative efforts on the Proposed Rule. Similarly, said legal counsel will not have a duty of loyalty or confidentiality to any Party to this Agreement other than the legal counsel's specific client(s), and consequently, no Party may seek to disqualify the legal counsel for another Party as a result of the legal counsel's participation in discussions and actions related to the Parties' cooperative efforts on the Proposed Rule.

7. Except where required by the order of a court of competent jurisdiction, or by the prior written consent of the remaining Parties, a Party will not reveal to non-Parties any Joint Prosecution Materials it has received from another Party.

8. Each Party shall notify the Party that generated any Joint Prosecution Materials of any request to disclose the Joint Prosecution Materials to any non-Party, or of any proceeding before any court, administrative agency, or tribunal to compel the disclosure of such Joint Prosecution Materials, as soon as practicable after receipt of such request or the initiation of such proceeding. If a Party becomes subject to any judicial or administrative order purporting to compel release of Joint Prosecution Materials, that Party shall: (a) promptly notify the Party that generated the materials and all remaining Parties, and (b) make all reasonable efforts to give that Party an opportunity to protect the Joint Prosecution Materials.

9. No party is required to treat as confidential within the meaning of this Agreement any material where such material is, or hereafter becomes (without violation of this Agreement), public record, public knowledge, or is obtained from sources other than exchanges under this Agreement.

10. The sharing of Joint Prosecution Materials among the Parties is not intended to and will not constitute a waiver of any privilege or other protection of confidentiality, including but not limited to the attorney-client privilege, work product privilege, common-interest doctrine, deliberative process privilege, executive privilege, privileges relating to mediation or settlement communications, or any other privilege or protection existing under state or federal law.

11. Execution of this Agreement constitutes the mutual agreement of the Parties that any sharing of Joint Prosecution Materials among themselves is reasonably necessary for the accomplishment of the Parties' common purposes as described above. Any sharing of Joint Prosecution Materials among the Parties is in reliance on this Agreement and the protections that arise from the Parties' common interests in reviewing and commenting on the Proposed rule.

12. Nothing in this Agreement shall obligate any Party to exchange documents or information with any other Party, whether or not such documents or information would be covered by this Agreement as Joint Prosecution Materials.

13. By this Agreement the Parties each acknowledge and agree that cooperation in the matters referenced above may involve the communication and sharing of confidential information and further agree that the interests of the Parties are not adverse as to matters within the scope of this Agreement. Each of the Parties has had a full opportunity to consult with separate counsel, is fully informed, and has concluded that the risk of any potential conflict of interest is outweighed by the benefits and efficiencies afforded by the opportunities for cooperation and sharing of Joint Prosecution Materials as provided for herein. The Parties consent to the sharing of Joint Prosecution Materials among their counsel, waive any potential conflict of interest created thereby, and mutually agree that this sharing of Joint Prosecution

Materials and cooperation shall not constitute grounds for seeking disqualification of counsel in any matter or action.

14. If there is a breach of this Agreement by a Party, the Parties agree that the non-breaching Party will have no adequate remedy at law in money or damages and shall be entitled to seek and obtain, in addition to all other remedies that may be available, a temporary restraining order, injunctive relief, or other equitable relief against the breach or its continuance.

15. Nothing in this Agreement shall be construed to waive any rights, claims, or privileges that any Party shall have against another Party or any other person or entity.

16. This Agreement shall be binding upon the successors and assigns of the Parties.

17. This Agreement is made under, and shall be construed in accordance with, the laws of the State of California.

18. The individuals signing this Agreement in a representative capacity warrant that they have the authority to do so on behalf of the entity or entities they represent, and further agree that as representatives of the entity or entities that they respectively represent, they themselves are bound by all terms of this Agreement.

19. Any Party may withdraw from this Agreement by providing written notice to the other Parties. If a Party withdraws from this Agreement, the provisions of this Agreement shall continue to apply to the Joint Prosecution Materials that were shared during the time period when that Party was a party to this Agreement.

20. All notices and other communications required to be given to a Party under the terms of this Agreement (a) shall be in writing, (b) shall be personally delivered, or transmitted by facsimile or email, and (c) shall be directed to such Party at the address, facsimile number or

email address specified below, or at such other address, facsimile number or email address as such Party may hereafter designate by notice in accordance with this paragraph.

21. This Agreement may be executed in counterparts, each of which so executed shall be deemed an original irrespective of the date of the execution, and said counterparts shall together constitute one and the same Agreement. Further, facsimile or .PDF copies of signatures shall be as effective as original signatures for evidencing execution of this Agreement.

By: _____

Print Name: Anthony C. Zampiello

Date: July 21, 2010

Title: Executive Officer

Representing: Raymond Basin Management Board

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

Exhibit A

List of Parties

As of June 8, 2010

1. San Bernardino Valley Municipal Water District
2. Western Municipal Water District of Riverside County
3. City of Riverside Public Utilities
4. City of San Bernardino Municipal Water Department
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6. Southern California Edison
7. East Valley Water District
8. City of Highland
9. City of Redlands
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5. Riverside County Flood Control District
6. Orange County Flood Conrol District

Yucaipa Valley Water District
12770 SECOND STREET, YUCAIPA, CALIFORNIA 92399
TELEPHONE (909) 797-5119 FAX (909) 797-6381

LETTER OF TRANSMITTAL

DATE: August 4, 2010 **METHOD OF DELIVERY:** U.S. Postal Service

TO: Doug Headrick, General Manager

Agency: San Bernardino Valley Municipal Water District

Address: 380 East Vanderbilt Way
San Bernardino, CA 92408

FROM: Joseph B. Zoba, General Manager

Documentation Enclosed:

- Executed Joint Prosecution and Cost Sharing Agreement - Proposed Rule of the United States Fish & Wildlife Service to Designate Critical Habitat for the Santa Ana Sucker

Message:

Doug - Please find attached a copy of the executed agreement.

Should you have any questions, please call.

Joe

Copies to:

- Project File

JOINT PROSECUTION AND COST-SHARING AGREEMENT RE PROPOSED RULE OF THE UNITED STATES FISH & WILDLIFE SERVICE TO DESIGNATE CRITICAL HABITAT FOR THE SANTA ANA SUCKER

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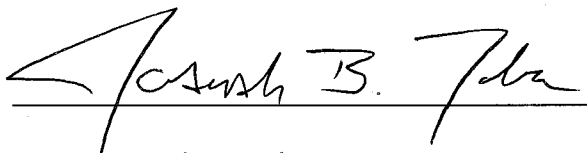
By: 

Print Name: Joseph B. Zoba

Date: June 16, 2010

Title: General Manager

Representing: Yucaipa Valley Water District

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

Exhibit A

List of Parties

As of June 8, 2010

1. San Bernardino Valley Municipal Water District
2. Western Municipal Water District of Riverside County
3. City of Riverside Public Utilities
4. City of San Bernardino Municipal Water Department
5. San Bernardino Valley Water Conservation District
6. Southern California Edison
7. East Valley Water District
8. City of Highland
9. City of Redlands
10. Yucaipa Valley Water District
11. San Bernardino County Flood Control District
12. Bear Valley Mutual Water Company/Crafton Water Company
13. Big Bear Municipal Water District ($20,000 share)

Other Possible Partner Agencies

1. West Valley Water District
2. Raymond Basin Management Board/San Gabriel Valley Water Association
3. City of Colton
4. City of Rialto
5. Riverside County Flood Control District
6. Orange County Flood Conrol District

Exhibit B

SCOPE OF WORK AND BUDGET

22 April 2010

ACTIVITIES ASSOCIATED WITH RESPONDING TO THE PROPOSED RESESIGNATION OF CRITICAL HABITAT FOR THE SANTA ANA SUCKER

Task 1. General Consulting Assistance

PBS&J (Leidy and colleagues) will assist the Santa Ana Sucker (SAS) Task Force, as requested, with assignments not included in other tasks. Budgeting for this task assumes that this task covers two time periods: 1 April through 30 Jun 2010 and 1 July through 31 December 2010. The period from 1 April through 30 July 2010, a period of 13 weeks, assumes an average labor commitment of 4 hours per week ($11,700 labor). Other direct costs are estimated at $1,000 for this same period (air fare, rental car, etc.). Total budget through 30 June 2010: $12,700. Post 30 June through 31 December 2010 labor budget (26 weeks) with the same assumptions: $23,400. Other direct costs: $2,000. Total budget from July through December: $25,400. Grand total budget (Labor and other direct costs) for this task from 1 April through 31 December 2010: $38,100.

Task 2. Attendance as SAS Conservation Team and Other Relevant Meetings

This task has been consolidated into this scope of work and budget from PBS&J Project No. 100012843 which was initiated on 1 March 2010. Leidy will attend up to 10 meetings of the SAWPA Santa Ana Sucker Conservation Team (including the Restoration Working Group) and the Southern California Native Aquatic Fauna Working Group between 1 March 2020 and 31 December 2010 for the purpose of providing input to the interested parties on the introduction of the SAS in the Santa Ana River watershed, and to gather information on the proposed activities of these groups. Each attendance is expected to be a one-day event. Leidy will summarize in writing the content of each meeting related to SAS issues along with any recommendations for actions on the part of the SAS Task Force. Each meeting is expected to require up to 8 hours in travel and meeting time, plus travel expenses (airfare, rental car and gas, one meal, and personal vehicle mileage. Labor budget (meetings plus write-ups) at 9 hours per meeting plus 0.5 hours administrative time per meeting: $20,900 (Before 30 June 2010: $5,225; Post 30 June 2010: $15,675). Other direct costs: $4,300 (Before 30 June: $1,075; Post 30 June 2010: $3,225). Total

labor and other direct before 30 June: $6,300. Total labor and other direct costs post 30 June 2010: $18,900. Total labor and other direct costs from 1 March through 31 December 2010: $25,200.

Task 3. SAS Enhancement Plan and Project Implementation

There are two phases to this task.

Phase 1

Leidy, working closely with Sam Fuller, is charged with developing a plan to enhance the survival of the SAS population within its existing range in the Santa Ana River basin. The focus geographically will be from the Rialto Drain downstream to the Imperial Highway. This is the reach of the Santa Ana River that currently supports or recently supported the SAS and the reach that will have the greatest probability of implementing a successful project. The plan may include upland sites within this general river reach. The plan will contain appropriate adaptive management elements focused in the short-term on stabilizing the SAS population in the Santa Ana River. The goal is to have one on-the-ground project in place by the end of September 2010. Specific constraints and milestones of the plan are:

- The project must be completed by 30 September 2010;
- The project design must avoid any permitting requirements (other than permission from the USFWS to capture, move, rear, and reintroduce SAS) to meet the schedule (i.e., no 404, 401, 1602, or other permits);
- The project should focus on improving spawning and/or juvenile rearing habitat for the SAS, if feasible;
- Leidy et al. will meet with the USFWS (Ren Lohoefener, Pacific Southwest Regional Director) to present the plan and request approval to move SAS to the project site, if necessary;
- Leidy et al. will request concurrence from the California Department of Fish and Game (Curt Taucher, Regional Manager), and will also request that CDFG release up to $200,000 in funding already provided by San Bernardino Valley Municipal Water District and Western Municipal Water District to CDFG under the terms of the water rights settlement with CDFG; and
- Post-project monitoring and O&M will be required.

To assist with Phase I, Leidy will engage the expert services of Dr. Camm Swift (ENTRIX, Inc.), Dr. Jonathan Baskin (San Marino Environmental Associates), and Kerwin Russell (Riverside-

Corona Resource Conservation District), as necessary, to design the project. Phase 1 has substantial unknowns at this time relative to the difficulty of implementing a project. If the process goes smoothly (for example, the project can make use of existing facilities at the RCRCD), then the cost will be less than the cost estimated herein. Leidy has budgeted a moderate level-of-effort, but by no means a highly complicated or expensive scenario. Planning for Task 3, Phase 1, is to be completed prior to 30 June 2010. The budget is based on all activities undertaken prior to 1 July 2010 and does not include Phase 1 construction-related planning or construction implementation. The budget breakdown is presented in the attached table. The total budget prior to 1 July 2010: $39,120. The total budget for the period from July through December 2010: $65,480. Total Task 3, Phase 1 budget for 2010: $104,600.

Phase 2

Phase 2 is a longer term continuation of Phase 1 that will occur over a two to three-year schedule at a funding level of approximately $100,000 to $150,000 per year. Phase 2 will develop additional projects that enhance and stabilize the SAS population within its existing range in the Santa Ana River basin. Project undertaken during this phase may require permitting and may focus on any activity that enhances SAS survival or improves habitat. Phase 2 is not budgeted at this time and will not be budgeted until Phase 1 is completed and we know better the level-of-effort required to continue with additional projects.

Task 4. Alternative Streams Investigation

This task will focus on evaluating the feasibility of establishing SAS populations elsewhere in the Santa Ana River basin outside of the current range of the species. New refugia for the SAS will be evaluated taking into consideration the following:

- Location relative to the parent population and existing infrastructure;
- Selection criteria for evaluating the suitability of specific locations to support viable populations of the SAS over time, including a risk analysis of potential threats; and
- Financial and institutional requirements to create, maintain, and monitor SAS populations at selected locations.

Leidy et al. will evaluate a select number of tributaries to the Santa Ana River that may contain the PCEs necessary to support an introduced SAS population in the future. This investigation will be at the reconnaissance level and the product will be a report presenting the results. Task 4 will be initiated prior to 30 June 2010, and will be completed prior to the end of calendar year 2010. Leidy will use experienced, mid-level fish biologists from PBS&J to assist with this task to contain costs. Approximately 25 streams will be evaluated. The evaluation will also include

site visits to confirm environmental conditions. A records search of resource agency files may also be required.

The labor costs incurred prior to 1 July 2010 will be for information gathering and site visits. This cost is estimated at $11,200. Other direct costs prior to 1 July: $3,500. Total budget prior to 1 July: $14,700. Completion of the report following 30 June 2010 is estimated at $11,200. Other direct costs after 30 June: $500. Total budget after 30 June: $11,700. Total budget for task: $26,400.

Task 5. Additional Responses to the Economic Study

Leidy will provide additional comments, if necessary, on the draft economic study issued by the USFWS. This effort is estimated at 24 hours labor ($5,400) plus other direct costs ($400), for a total budget of $5,800.

Budget Summary for the Proposed Scope of Work

Task	1 March-30 June ($)	1 July-31 December ($)	Total ($)
1	12,700	25,400	38,100
2	6,300	18,900	25,200
3	39,120	65,480	104,600
4	14,700	11,700	26,400
5	5,800	0	5,800
Total	78,620	121,480	200,100

Exhibit C

Legal Budget/Scope
Santa Ana Sucker Critical Habitat Designation

Best, Best & Krieger LLP on behalf of the Western Municipal Water District and City of Riverside and Downey Brand, LLP on behalf of the San Bernardino Valley Municipal Water District will undertake the tasks described in this Exhibit and will do so in cooperation with other Task Force members and their attorneys

Task 1 – General Coordination

This task involves general coordination efforts with the Santa Ana sucker task force and attendance at the monthly task force meetings. For purposes of the budget/scope, we have assumed that the task force will meet monthly from April through September and then meet in either October or November.

Task 2 Preparation of Comments on Economic Analysis

Task 2.1 involves legal coordination with John Husing as he prepares his comments based on the project descriptions submitted by participating agencies. We anticipate that most of those comments will focus on the economic impacts of critical habitat designation, but we anticipate some need to work with Husing to establish the legal framework for his analysis.

Task 2.2 involves the attendance at the Fish & Wildlife Service hearing on the economic analysis.

Task 3. Preparation of Enhancement Project

Task 3.1 involves legal coordination with Roy Leidy as he works with Camm Swift and John Baskin to develop the proposed Santa Ana sucker enhancement project.

Task 3.2 involves preparing for and meeting with officials at the Fish & Wildlife Service to obtain their consent to the implementation of the project(s) developed by Leidy, Swift and Baskin.

Task 3.3 involves the negotiation of a safe harbor agreement, a 10(j) population designation, or other legal/regulatory means to ensure that the Santa Ana task force parties' projects are fully protected from limits caused by the enhancement efforts.

Task 4. Review and Client Advice on Final Rule

This task involves review of the final critical habitat designation rule once it is issued by the Fish & Wildlife Service and advising the Santa Ana sucker task force about potential avenues in light of that designation.

Santa Ana Sucker Critical Habitat Designation
Legal Budget

Task	April 1 to June 30, 2010		July 1 to December 31, 2010		Contingency (10%)	Total
	Hours	Fees/Costs	Hours	Fees/Costs		
Task 1 -- General Coordination	50	$15,000	70	$21,000	$3,600	$39,600
Task 2 -- Preparation of Comments on Economic Impacts of Designation						
Task 2.1 Coordination with John Husing	30	$9,000	70	$21,000	$2,103	$32,103
Task 2.2 Attendance at FWS Hearing	0	$0	20	$6,000	$600	$6,600
Task 3 -- Preparation of Enhancement Project						
Task 3.1 Coordination with Roy Leidy	50	$15,000	25	$7,500	$755	$23,255
Task 3.2 Meetings with FWS	25	$7,500	20	$6,000	$603	$14,103
Task 3.3 Negotiation of Safe Harbor Agreement	30	$9,000	100	$30,000	$3,003	$42,003
Task 4 Review and advice on Final Rule	0	$0	40	$12,000	$1,200	$13,200
Total	**185**	**$55,500**	**345**	**$103,500**	**$11,864**	**$170,864**

Exhibit D

RK

Stacey Aldstadt, Esq
General Manager
City of San Bernardino Municipal
Water Department
444-D, Rialto
San Bernardino, CA 92410

June 4, 2010

Dear Stacey;

The purpose of this letter is to summarize and confirm the term and conditions of the agreement by Richard Katz Consulting Inc, ("Consultant") and X the City of San Bernardino Municipal Water Department ("SBMWD") ("Client").

SCOPE OF SERVICES

The Client retains Consultant to provide strategic advice as it relates to the Federal Governments effort on the Santa Ana Sucker Critical Habitat Designation. Consultant shall offer a critical political overlay to the efforts of the government relations teams representing the member agencies of the Santa Ana Sucker Task Force in Washington, DC. Efforts shall include but not be limited to review of current strategy, assistance in developing new and innovative strategy going forward, and coordination of efforts with federal, state and local entities.

Richard Katz

Ph: 818-995-8575 ▪ Cell: 818-807-5490 ▪ Richard@katzmitchell.com ▪ 4009 Woodman Canyon Ave ▪ Sherman Oaks, CA 91423

PROFESSIONAL FEES

In compensation for the services performed by Consultant on behalf of Client, as outlined above, Client agrees to pay Consultant a monthly retainer of $5,000 per month for 90-days and $3,500 per month on-going until the issue is resolved, beginning June 1, 2010.

REIMBURSEMENT OF EXPENSES INCURRED

Client will reimburse Consultant on a monthly basis for any out-of-pocket expenses reasonably incurred by Consultant on its behalf including, but not limited to, document reproduction charges, facsimile charges, long distant telephone calls, travel expenses and messenger fees. Consultant will send a statement of expenses incurred each month. No expenditure in excess of five Hundred Dollars ($500.00) per month will be made without prior written consent from Client.

TERMINATION

Either party upon thirty (30) days written notice to the other party may terminate this agreement. In the event of such termination, Consultant shall bill Client for all professional services, independent contractor expenses and other costs incurred up to the date of termination.

NO REPRESENTATION THAT PERMITS OR SERVICES WILL BE APPROVED OR SUCCESSFUL

It is impossible to predict the approval or non-approval of any action, which requires discretionary government action. Consequently, while consultant will conscientiously perform all of its responsibilities outlined above, we cannot and do not make any representation to Client that any of the services discussed herein will be granted, acknowledged or approved by any governmental or public jurisdiction. Client acknowledges that none of its obligations under this letter agreement is dependent or conditioned upon approval of any service.

Consultant, its employees and associates, shall not be individually or collectively liable to client, or any party claiming through Client, for any damages resulting from the denial of any discretionary permits or from errors or omissions in

connection with any services provided hereunder for any reason other than willful misconduct.

Consultant shall not be liable to Client, or any party claiming through Client, for any damages resulting from the denial of the application of any governmental approval or service.

ATTORNEY'S FEES

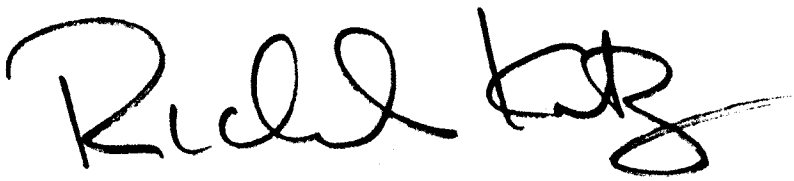
In the event that any litigation is commenced concerning any provision of this letter agreement, the prevailing party will be entitled to recover, in addition to any other relief granted by the court, a reasonable sum for its attorney's fees incurred in the litigation.

CONCLUSION

We believe that the above terms and conditions accurately summarize our agreement for the performance of services related to the project. If you concur, please indicate your approval and acceptance by dating, signing and returning this letter agreement. We have enclosed a signed copy of this letter for your records.

We are very pleased that we are able to be of service to you and look forward to working with you.

All the Best,



Richard Katz

AGREED AND ACCEPTED;
City of San Bernardino Municipal Water Department

By:

_____

Stacey Aldstadt, Esq. Date

JOINT PROSECUTION AND COST-SHARING AGREEMENT RE PROPOSED RULE OF THE UNITED STATES FISH & WILDLIFE SERVICE TO DESIGNATE CRITICAL HABITAT FOR THE SANTA ANA SUCKER

This Joint Prosecution and Cost-Sharing Agreement ("Agreement") is entered into by and among the undersigned (the "Parties"), as listed on Exhibit A hereto.

RECITALS

A. The Parties are cooperating on efforts to analyze, review and comment on the United States Fish & Wildlife Service's Proposed Rule to Designate Critical Habitat for the Santa Ana Sucker ("Proposed Rule"). The Proposed Rule may have negative consequences for the Parties, depending on the specifics of the finally adopted rule and the course of administrative proceedings on establishing the rule. The Parties have agreed to cooperate reasonably in efforts to analyze and comment upon the Proposed Rule. These cooperative efforts include the utilization of various experts and consultants to assist with the review of and preparation of comments on the Proposed Rule, and the provision of consulting expert opinions relative to the necessity, wisdom, and efficacy of potential challenges to it. These cooperative efforts are more particularly described in the scopes of work attached hereto as Exhibits B, C, and D, and incorporated herein by this reference.

B. Through this Agreement, the Parties desire to govern their payment of costs and fees arising from their cooperative efforts related to the retention and use of consulting experts on the Proposed Rule, and to confirm their common interests in maintaining a joint prosecution with respect to the Proposed Rule, to allow them to continue to share information related to the Proposed Rule, while continuing to preserve, to the fullest extent possible, the protections of the attorney-client privilege, work product privilege, common-interest doctrine, deliberative process

privilege, executive privilege, privileges regarding mediation or settlement communications, or any other privilege or protection existing under state or federal law.

AGREEMENT

NOW, THEREFORE, in consideration of the above recitals, and the mutual covenants and conditions contained herein, the Parties agree as follows:

1. The Parties shall each initially contribute the sum of $32,000, (except Big Bear Municipal Water District which shall contribute $20,000) which represents each Party's per capita contribution to pay for the fees and costs collectively incurred in their said cooperative efforts on the Proposed Rule. San Bernardino Valley Municipal Water District shall have the responsibility for collecting each Party's contribution of funds, processing invoices submitted by the experts and consultants pursuant to their scopes of work attached hereto, coordinating communications among the Parties to the retained consulting experts, and for maintaining an accurate accounting of this administration of funds. In the event that additional tasks and associated costs are identified in order to meet the joint goals, the Parties will work cooperatively to fund such costs. However, nothing in this Agreement shall be construed to require a Party to pay more than its above-referenced initial per capita contribution towards the total cost for the current scopes of work, which is estimated to be $407,000.

2. For purposes of this Agreement, "Joint Prosecution Materials" includes, but is not limited to, all communications (including communications related to the Proposed Rule made prior to the execution of this Agreement), factual materials, mental impressions, legal analyses, theories or strategies, memoranda, reports, notes, emails or any other communications or

documents that are protected from disclosure by the attorney-client privilege, work product privilege, deliberative process privilege, executive privilege, common-interest doctrine, joint prosecution/defense doctrine, privileges regarding mediation or settlement communications, or any other privilege or protection existing under state or federal law, and that are exchanged among the Parties and/or their respective counsel in connection with the Proposed Rule. Joint Prosecution Materials do not include final versions of any correspondence, studies, or reports prepared by or on behalf of one or more Parties intended for review by the United States Fish & Wildlife Service or a non-Party.

3. The Parties will maintain as confidential all Joint Prosecution Materials (as defined above). Disclosure of Joint Prosecution Materials shall be limited to the Parties and their employees and contractors as well as any counsel, consultants, and lobbyists retained by the parties, or on behalf of the parties, for the purpose of maintaining a joint prosecution with respect to the Proposed Rule, subject to the further provisions of this Agreement.

4. Any Joint Prosecution Materials shared or transmitted by or between Parties should be clearly designated "CONFIDENTIAL: JOINT PROSECUTION MATERIALS." However, the failure to include such designation shall not preclude such materials from being afforded the protections of this Agreement and shall not be construed to constitute a waiver of any privilege or other protection.

5. Each Party shall take all appropriate measures to ensure that any person who is granted access to Joint Prosecution Materials is familiar with the terms of this Agreement and complies with those terms.

6. Each Party is represented by its own respective legal counsel in connection with the Proposed Rule, and the cooperative efforts referenced herein. Said legal counsel will not

have an attorney-client relationship with any other Party to this Agreement as a result of the legal counsel's participation in discussions and actions related to the Parties' cooperative efforts on the Proposed Rule. Similarly, said legal counsel will not have a duty of loyalty or confidentiality to any Party to this Agreement other than the legal counsel's specific client(s), and consequently, no Party may seek to disqualify the legal counsel for another Party as a result of the legal counsel's participation in discussions and actions related to the Parties' cooperative efforts on the Proposed Rule.

7. Except where required by the order of a court of competent jurisdiction, or by the prior written consent of the remaining Parties, a Party will not reveal to non-Parties any Joint Prosecution Materials it has received from another Party.

8. Each Party shall notify the Party that generated any Joint Prosecution Materials of any request to disclose the Joint Prosecution Materials to any non-Party, or of any proceeding before any court, administrative agency, or tribunal to compel the disclosure of such Joint Prosecution Materials, as soon as practicable after receipt of such request or the initiation of such proceeding. If a Party becomes subject to any judicial or administrative order purporting to compel release of Joint Prosecution Materials, that Party shall: (a) promptly notify the Party that generated the materials and all remaining Parties, and (b) make all reasonable efforts to give that Party an opportunity to protect the Joint Prosecution Materials.

9. No party is required to treat as confidential within the meaning of this Agreement any material where such material is, or hereafter becomes (without violation of this Agreement), public record, public knowledge, or is obtained from sources other than exchanges under this Agreement.

10. The sharing of Joint Prosecution Materials among the Parties is not intended to and will not constitute a waiver of any privilege or other protection of confidentiality, including but not limited to the attorney-client privilege, work product privilege, common-interest doctrine, deliberative process privilege, executive privilege, privileges relating to mediation or settlement communications, or any other privilege or protection existing under state or federal law.

11. Execution of this Agreement constitutes the mutual agreement of the Parties that any sharing of Joint Prosecution Materials among themselves is reasonably necessary for the accomplishment of the Parties' common purposes as described above. Any sharing of Joint Prosecution Materials among the Parties is in reliance on this Agreement and the protections that arise from the Parties' common interests in reviewing and commenting on the Proposed rule.

12. Nothing in this Agreement shall obligate any Party to exchange documents or information with any other Party, whether or not such documents or information would be covered by this Agreement as Joint Prosecution Materials.

13. By this Agreement the Parties each acknowledge and agree that cooperation in the matters referenced above may involve the communication and sharing of confidential information and further agree that the interests of the Parties are not adverse as to matters within the scope of this Agreement. Each of the Parties has had a full opportunity to consult with separate counsel, is fully informed, and has concluded that the risk of any potential conflict of interest is outweighed by the benefits and efficiencies afforded by the opportunities for cooperation and sharing of Joint Prosecution Materials as provided for herein. The Parties consent to the sharing of Joint Prosecution Materials among their counsel, waive any potential conflict of interest created thereby, and mutually agree that this sharing of Joint Prosecution

Materials and cooperation shall not constitute grounds for seeking disqualification of counsel in any matter or action.

14. If there is a breach of this Agreement by a Party, the Parties agree that the non-breaching Party will have no adequate remedy at law in money or damages and shall be entitled to seek and obtain, in addition to all other remedies that may be available, a temporary restraining order, injunctive relief, or other equitable relief against the breach or its continuance.

15. Nothing in this Agreement shall be construed to waive any rights, claims, or privileges that any Party shall have against another Party or any other person or entity.

16. This Agreement shall be binding upon the successors and assigns of the Parties.

17. This Agreement is made under, and shall be construed in accordance with, the laws of the State of California.

18. The individuals signing this Agreement in a representative capacity warrant that they have the authority to do so on behalf of the entity or entities they represent, and further agree that as representatives of the entity or entities that they respectively represent, they themselves are bound by all terms of this Agreement.

19. Any Party may withdraw from this Agreement by providing written notice to the other Parties. If a Party withdraws from this Agreement, the provisions of this Agreement shall continue to apply to the Joint Prosecution Materials that were shared during the time period when that Party was a party to this Agreement.

20. All notices and other communications required to be given to a Party under the terms of this Agreement (a) shall be in writing, (b) shall be personally delivered, or transmitted by facsimile or email, and (c) shall be directed to such Party at the address, facsimile number or

email address specified below, or at such other address, facsimile number or email address as such Party may hereafter designate by notice in accordance with this paragraph.

21. This Agreement may be executed in counterparts, each of which so executed shall be deemed an original irrespective of the date of the execution, and said counterparts shall together constitute one and the same Agreement. Further, facsimile or .PDF copies of signatures shall be as effective as original signatures for evidencing execution of this Agreement.

By: Robert A. Hinze

Print Name: Robert A. Hinze

Date: 8-5-10

Title: President

Representing: Bear Valley Mutual Water Company

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

Exhibit A

List of Parties

As of June 8, 2010

1. San Bernardino Valley Municipal Water District
2. Western Municipal Water District of Riverside County
3. City of Riverside Public Utilities
4. City of San Bernardino Municipal Water Department
5. San Bernardino Valley Water Conservation District
6. Southern California Edison
7. East Valley Water District
8. City of Highland
9. City of Redlands
10. Yucaipa Valley Water District
11. San Bernardino County Flood Control District
12. Bear Valley Mutual Water Company/Crafton Water Company
13. Big Bear Municipal Water District ($20,000 share)

Other Possible Partner Agencies

1. West Valley Water District
2. Raymond Basin Management Board/San Gabriel Valley Water Association
3. City of Colton
4. City of Rialto
5. Riverside County Flood Control District
6. Orange County Flood Conrol District

JOINT PROSECUTION AND COST-SHARING AGREEMENT RE PROPOSED RULE OF THE UNITED STATES FISH & WILDLIFE SERVICE TO DESIGNATE CRITICAL HABITAT FOR THE SANTA ANA SUCKER

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privilege, executive privilege, privileges regarding mediation or settlement communications, or any other privilege or protection existing under state or federal law.

AGREEMENT

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By: _____

Print Name: John Rossi

Date: June 17, 2010

Title: General Manager

Representing: Western Municipal Water District

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

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10. The sharing of Joint Prosecution Materials among the Parties is not intended to and will not constitute a waiver of any privilege or other protection of confidentiality, including but not limited to the attorney-client privilege, work product privilege, common-interest doctrine, deliberative process privilege, executive privilege, privileges relating to mediation or settlement communications, or any other privilege or protection existing under state or federal law.

11. Execution of this Agreement constitutes the mutual agreement of the Parties that any sharing of Joint Prosecution Materials among themselves is reasonably necessary for the accomplishment of the Parties' common purposes as described above. Any sharing of Joint Prosecution Materials among the Parties is in reliance on this Agreement and the protections that arise from the Parties' common interests in reviewing and commenting on the Proposed rule.

12. Nothing in this Agreement shall obligate any Party to exchange documents or information with any other Party, whether or not such documents or information would be covered by this Agreement as Joint Prosecution Materials.

13. By this Agreement the Parties each acknowledge and agree that cooperation in the matters referenced above may involve the communication and sharing of confidential information and further agree that the interests of the Parties are not adverse as to matters within the scope of this Agreement. Each of the Parties has had a full opportunity to consult with separate counsel, is fully informed, and has concluded that the risk of any potential conflict of interest is outweighed by the benefits and efficiencies afforded by the opportunities for cooperation and sharing of Joint Prosecution Materials as provided for herein. The Parties consent to the sharing of Joint Prosecution Materials among their counsel, waive any potential conflict of interest created thereby, and mutually agree that this sharing of Joint Prosecution

Materials and cooperation shall not constitute grounds for seeking disqualification of counsel in any matter or action.

14. If there is a breach of this Agreement by a Party, the Parties agree that the non-breaching Party will have no adequate remedy at law in money or damages and shall be entitled to seek and obtain, in addition to all other remedies that may be available, a temporary restraining order, injunctive relief, or other equitable relief against the breach or its continuance.

15. Nothing in this Agreement shall be construed to waive any rights, claims, or privileges that any Party shall have against another Party or any other person or entity.

16. This Agreement shall be binding upon the successors and assigns of the Parties.

17. This Agreement is made under, and shall be construed in accordance with, the laws of the State of California.

18. The individuals signing this Agreement in a representative capacity warrant that they have the authority to do so on behalf of the entity or entities they represent, and further agree that as representatives of the entity or entities that they respectively represent, they themselves are bound by all terms of this Agreement.

19. Any Party may withdraw from this Agreement by providing written notice to the other Parties. If a Party withdraws from this Agreement, the provisions of this Agreement shall continue to apply to the Joint Prosecution Materials that were shared during the time period when that Party was a party to this Agreement.

20. All notices and other communications required to be given to a Party under the terms of this Agreement (a) shall be in writing, (b) shall be personally delivered, or transmitted by facsimile or email, and (c) shall be directed to such Party at the address, facsimile number or

email address specified below, or at such other address, facsimile number or email address as such Party may hereafter designate by notice in accordance with this paragraph.

21. This Agreement may be executed in counterparts, each of which so executed shall be deemed an original irrespective of the date of the execution, and said counterparts shall together constitute one and the same Agreement. Further, facsimile or .PDF copies of signatures shall be as effective as original signatures for evidencing execution of this Agreement.

By: Belinda J. Graham

Print Name: Belinda J. Graham

Date: August 5, 2010

Title: Assistant City Manager

Representing: City of Riverside

Attest: Sherry Morton Ellers
City Clerk

APPROVED AS TO FORM
Susan Wilson
DEPUTY CITY ATTORNEY

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

Exhibit A

List of Parties

As of June 8, 2010

1. San Bernardino Valley Municipal Water District
2. Western Municipal Water District of Riverside County
3. ~~City of Riverside Public Utilities~~
4. City of San Bernardino Municipal Water Department
5. San Bernardino Valley Water Conservation District
6. Southern California Edison
7. East Valley Water District
8. City of Highland
9. City of Redlands
10. Yucaipa Valley Water District
11. San Bernardino County Flood Control District
12. Bear Valley Mutual Water Company/Crafton Water Company
13. Big Bear Municipal Water District ($20,000 share)

Other Possible Partner Agencies

1. West Valley Water District
2. Raymond Basin Management Board/San Gabriel Valley Water Association
3. City of Colton
4. City of Rialto
5. Riverside County Flood Control District
6. Orange County Flood Control District

Exhibit B

SCOPE OF WORK AND BUDGET

22 April 2010

ACTIVITIES ASSOCIATED WITH RESPONDING TO THE PROPOSED RESESIGNATION OF CRITICAL HABITAT FOR THE SANTA ANA SUCKER

Task 1. General Consulting Assistance

PBS&J (Leidy and colleagues) will assist the Santa Ana Sucker (SAS) Task Force, as requested, with assignments not included in other tasks. Budgeting for this task assumes that this task covers two time periods: 1 April through 30 Jun 2010 and 1 July through 31 December 2010. The period from 1 April through 30 July 2010, a period of 13 weeks, assumes an average labor commitment of 4 hours per week ($11,700 labor). Other direct costs are estimated at $1,000 for this same period (air fare, rental car, etc.). Total budget through 30 June 2010: $12,700. Post 30 June through 31 December 2010 labor budget (26 weeks) with the same assumptions: $23,400. Other direct costs: $2,000. Total budget from July through December: $25,400. Grand total budget (Labor and other direct costs) for this task from 1 April through 31 December 2010: $38,100.

Task 2. Attendance as SAS Conservation Team and Other Relevant Meetings

This task has been consolidated into this scope of work and budget from PBS&J Project No. 100012843 which was initiated on 1 March 2010. Leidy will attend up to 10 meetings of the SAWPA Santa Ana Sucker Conservation Team (including the Restoration Working Group) and the Southern California Native Aquatic Fauna Working Group between 1 March 2020 and 31 December 2010 for the purpose of providing input to the interested parties on the introduction of the SAS in the Santa Ana River watershed, and to gather information on the proposed activities of these groups. Each attendance is expected to be a one-day event. Leidy will summarize in writing the content of each meeting related to SAS issues along with any recommendations for actions on the part of the SAS Task Force. Each meeting is expected to require up to 8 hours in travel and meeting time, plus travel expenses (airfare, rental car and gas, one meal, and personal vehicle mileage. Labor budget (meetings plus write-ups) at 9 hours per meeting plus 0.5 hours administrative time per meeting: $20,900 (Before 30 June 2010: $5,225; Post 30 June 2010: $15,675). Other direct costs: $4,300 (Before 30 June: $1,075; Post 30 June 2010: $3,225). Total

labor and other direct before 30 June: $6,300. Total labor and other direct costs post 30 June 2010: $18,900. Total labor and other direct costs from 1 March through 31 December 2010: $25,200.

Task 3. SAS Enhancement Plan and Project Implementation

There are two phases to this task.

Phase 1

~~Leidy, working closely with Sam Fuller, is charged with developing a plan to enhance the~~ survival of the SAS population within its existing range in the Santa Ana River basin. The focus geographically will be from the Rialto Drain downstream to the Imperial Highway. This is the reach of the Santa Ana River that currently supports or recently supported the SAS and the reach that will have the greatest probability of implementing a successful project. The plan may include upland sites within this general river reach. The plan will contain appropriate adaptive management elements focused in the short-term on stabilizing the SAS population in the Santa Ana River. The goal is to have one on-the-ground project in place by the end of September 2010. Specific constraints and milestones of the plan are:

- The project must be completed by 30 September 2010;
- The project design must avoid any permitting requirements (other than permission from the USFWS to capture, move, rear, and reintroduce SAS) to meet the schedule (i.e., no 404, 401, 1602, or other permits);
- The project should focus on improving spawning and/or juvenile rearing habitat for the SAS, if feasible;
- Leidy et al. will meet with the USFWS (Ren Lohoefener, Pacific Southwest Regional Director) to present the plan and request approval to move SAS to the project site, if necessary;
- Leidy et al. will request concurrence from the California Department of Fish and Game (Curt Taucher, Regional Manager), and will also request that CDFG release up to $200,000 in funding already provided by San Bernardino Valley Municipal Water District and Western Municipal Water District to CDFG under the terms of the water rights settlement with CDFG; and
- Post-project monitoring and O&M will be required.

To assist with Phase I, Leidy will engage the expert services of Dr. Camm Swift (ENTRIX, Inc.), Dr. Jonathan Baskin (San Marino Environmental Associates), and Kerwin Russell (Riverside-

Corona Resource Conservation District), as necessary, to design the project. Phase 1 has substantial unknowns at this time relative to the difficulty of implementing a project. If the process goes smoothly (for example, the project can make use of existing facilities at the RCRCD), then the cost will be less than the cost estimated herein. Leidy has budgeted a moderate level-of-effort, but by no means a highly complicated or expensive scenario. Planning for Task 3, Phase 1, is to be completed prior to 30 June 2010. The budget is based on all activities undertaken prior to 1 July 2010 and does not include Phase 1 construction-related planning or construction implementation. The budget breakdown is presented in the attached table. The total budget prior to 1 July 2010: $39,120. The total budget for the period from July through December 2010: $65,480. Total Task 3, Phase 1 budget for 2010: $104,600.

Phase 2

Phase 2 is a longer term continuation of Phase 1 that will occur over a two to three-year schedule at a funding level of approximately $100,000 to $150,000 per year. Phase 2 will develop additional projects that enhance and stabilize the SAS population within its existing range in the Santa Ana River basin. Project undertaken during this phase may require permitting and may focus on any activity that enhances SAS survival or improves habitat. Phase 2 is not budgeted at this time and will not be budgeted until Phase 1 is completed and we know better the level-of-effort required to continue with additional projects.

Task 4. Alternative Streams Investigation

This task will focus on evaluating the feasibility of establishing SAS populations elsewhere in the Santa Ana River basin outside of the current range of the species. New refugia for the SAS will be evaluated taking into consideration the following:

- Location relative to the parent population and existing infrastructure;
- Selection criteria for evaluating the suitability of specific locations to support viable populations of the SAS over time, including a risk analysis of potential threats; and
- Financial and institutional requirements to create, maintain, and monitor SAS populations at selected locations.

Leidy et al. will evaluate a select number of tributaries to the Santa Ana River that may contain the PCEs necessary to support an introduced SAS population in the future. This investigation will be at the reconnaissance level and the product will be a report presenting the results. Task 4 will be initiated prior to 30 June 2010, and will be completed prior to the end of calendar year 2010. Leidy will use experienced, mid-level fish biologists from PBS&J to assist with this task to contain costs. Approximately 25 streams will be evaluated. The evaluation will also include

site visits to confirm environmental conditions. A records search of resource agency files may also be required.

The labor costs incurred prior to 1 July 2010 will be for information gathering and site visits. This cost is estimated at $11,200. Other direct costs prior to 1 July: $3,500. Total budget prior to 1 July: $14,700. Completion of the report following 30 June 2010 is estimated at $11,200. Other direct costs after 30 June: $500. Total budget after 30 June: $11,700. Total budget for task: $26,400.

Task 5. Additional Responses to the Economic Study

Leidy will provide additional comments, if necessary, on the draft economic study issued by the USFWS. This effort is estimated at 24 hours labor ($5,400) plus other direct costs ($400), for a total budget of $5,800.

Budget Summary for the Proposed Scope of Work

Task	1 March-30 June ($)	1 July-31 December ($)	Total ($)
1	12,700	25,400	38,100
2	6,300	18,900	25,200
3	39,120	65,480	104,600
4	14,700	11,700	26,400
5	5,800	0	5,800
Total	78,620	121,480	200,100

Exhibit C

Legal Budget/Scope
Santa Ana Sucker Critical Habitat Designation

Best, Best & Krieger LLP on behalf of the Western Municipal Water District and City of Riverside and Downey Brand, LLP on behalf of the San Bernardino Valley Municipal Water District will undertake the tasks described in this Exhibit and will do so in cooperation with other Task Force members and their attorneys

Task 1 – General Coordination

This task involves general coordination efforts with the Santa Ana sucker task force and attendance at the monthly task force meetings. For purposes of the budget/scope, we have assumed that the task force will meet monthly from April through September and then meet in either October or November.

Task 2 Preparation of Comments on Economic Analysis

Task 2.1 involves legal coordination with John Husing as he prepares his comments based on the project descriptions submitted by participating agencies. We anticipate that most of those comments will focus on the economic impacts of critical habitat designation, but we anticipate some need to work with Husing to establish the legal framework for his analysis.

Task 2.2 involves the attendance at the Fish & Wildlife Service hearing on the economic analysis.

Task 3. Preparation of Enhancement Project

Task 3.1 involves legal coordination with Roy Leidy as he works with Camm Swift and John Baskin to develop the proposed Santa Ana sucker enhancement project.

Task 3.2 involves preparing for and meeting with officials at the Fish & Wildlife Service to obtain their consent to the implementation of the project(s) developed by Leidy, Swift and Baskin.

Task 3.3 involves the negotiation of a safe harbor agreement, a 10(j) population designation, or other legal/regulatory means to ensure that the Santa Ana task force parties' projects are fully protected from limits caused by the enhancement efforts.

Task 4. Review and Client Advice on Final Rule

This task involves review of the final critical habitat designation rule once it is issued by the Fish & Wildlife Service and advising the Santa Ana sucker task force about potential avenues in light of that designation.

Santa Ana Sucker Critical Habitat Designation
Legal Budget

Task	April 1 to June 30, 2010		July 1 to December 31, 2010		Contingency (10%)	Total
	Hours	Fees/Costs	Hours	Fees/Costs		
Task 1 -- General Coordination	50	$15,000	70	$21,000	$3,600	$39,600
Task 2 -- Preparation of Comments on Economic Impacts of Designation						
Task 2.1 Coordination with John Husing	30	$9,000	70	$21,000	$2,103	$32,103
Task 2.2 Attendance at FWS Hearing	0	$0	20	$6,000	$600	$6,600
Task 3 -- Preparation of Enhancement Project						
Task 3.1 Coordination with Roy Leidy	50	$15,000	25	$7,500	$755	$23,255
Task 3.2 Meetings with FWS	25	$7,500	20	$6,000	$603	$14,103
Task 3.3 Negotiation of Safe Harbor Agreement	30	$9,000	100	$30,000	$3,003	$42,003
Task 4 Review and advice on Final Rule	0	$0	40	$12,000	$1,200	$13,200
Total	**185**	**$55,500**	**345**	**$103,500**	**$11,864**	**$170,864**

Exhibit D

RK

Stacey Aldstadt, Esq
General Manager
City of San Bernardino Municipal
Water Department
444-D, Rialto
San Bernardino, CA 92410

June 4, 2010

Dear Stacey;

The purpose of this letter is to summarize and confirm the term and conditions of the agreement by Richard Katz Consulting Inc, ("Consultant") and X the City of San Bernardino Municipal Water Department ("SBMWD") ("Client").

SCOPE OF SERVICES

The Client retains Consultant to provide strategic advice as it relates to the Federal Governments effort on the Santa Ana Sucker Critical Habitat Designation. Consultant shall offer a critical political overlay to the efforts of the government relations teams representing the member agencies of the Santa Ana Sucker Task Force in Washington, DC. Efforts shall include but not be limited to review of current strategy, assistance in developing new and innovative strategy going forward, and coordination of efforts with federal, state and local entities.

PROFESSIONAL FEES

Richard Katz

Ph: 818-995-8575 • Cell: 818-807-5490 • Richard@katzmitchell.com • 4009 Woodman Canyon Ave • Sherman Oaks, CA 91423

In compensation for the services performed by Consultant on behalf of Client, as outlined above, Client agrees to pay Consultant a monthly retainer of $5,000 per month for 90-days and $3,500 per month on-going until the issue is resolved, beginning June 1, 2010.

REIMBURSEMENT OF EXPENSES INCURRED

Client will reimburse Consultant on a monthly basis for any out-of-pocket expenses reasonably incurred by Consultant on its behalf including, but not limited to, document reproduction charges, facsimile charges, long distant telephone calls, travel expenses and messenger fees. Consultant will send a statement of expenses incurred each month. No expenditure in excess of five Hundred Dollars ($500.00) per month will be made without prior written consent from Client.

TERMINATION

Either party upon thirty (30) days written notice to the other party may terminate this agreement. In the event of such termination, Consultant shall bill Client for all professional services, independent contractor expenses and other costs incurred up to the date of termination.

NO REPRESENTATION THAT PERMITS OR SERVICES WILL BE APPROVED OR SUCCESSFUL

It is impossible to predict the approval or non-approval of any action, which requires discretionary government action. Consequently, while consultant will conscientiously perform all of its responsibilities outlined above, we cannot and do not make any representation to Client that any of the services discussed herein will be granted, acknowledged or approved by any governmental or public jurisdiction. Client acknowledges that none of its obligations under this letter agreement is dependent or conditioned upon approval of any service.

Consultant, its employees and associates, shall not be individually or collectively liable to client, or any party claiming through Client, for any damages resulting from the denial of any discretionary permits or from errors or omissions in connection with any services provided hereunder for any reason other than willful misconduct.

Consultant shall not be liable to Client, or any party claiming through Client, for any damages resulting from the denial of the application of any governmental approval or service.

ATTORNEY'S FEES

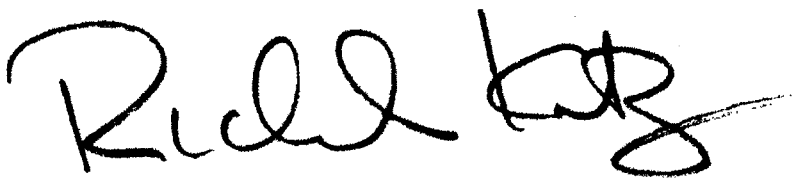
In the event that any litigation is commenced concerning any provision of this letter agreement, the prevailing party will be entitled to recover, in addition to any other relief granted by the court, a reasonable sum for its attorney's fees incurred in the litigation.

CONCLUSION

We believe that the above terms and conditions accurately summarize our agreement for the performance of services related to the project. If you concur, please indicate your approval and acceptance by dating, signing and returning this letter agreement. We have enclosed a signed copy of this letter for your records.

We are very pleased that we are able to be of service to you and look forward to working with you.

All the Best,



Richard Katz

AGREED AND ACCEPTED;
City of San Bernardino Municipal Water Department

By: _____

Stacey Aldstadt, Esq. Date

email address specified below, or at such other address, facsimile number or email address as such Party may hereafter designate by notice in accordance with this paragraph.

21. This Agreement may be executed in counterparts, each of which so executed shall be deemed an original irrespective of the date of the execution, and said counterparts shall together constitute one and the same Agreement. Further, facsimile or .PDF copies of signatures shall be as effective as original signatures for evidencing execution of this Agreement.

By: _____

Print Name: George E. Wilson

Date: 8/11/10

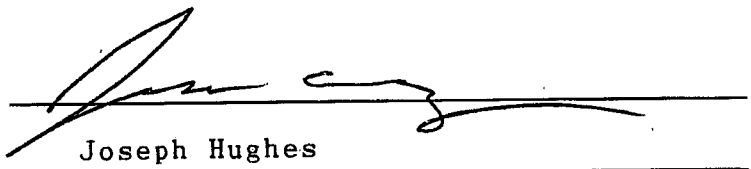
Title: President

Representing: East Valley Water District

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

email address specified below, or at such other address, facsimile number or email address as such Party may hereafter designate by notice in accordance with this paragraph.

21. This Agreement may be executed in counterparts, each of which so executed shall be deemed an original irrespective of the date of the execution, and said counterparts shall together constitute one and the same Agreement. Further, facsimile or .PDF copies of signatures shall be as effective as original signatures for evidencing execution of this Agreement.

By: 

Print Name: Joseph Hughes

Date: August 13, 2010

Title: City Manager

Representing: City of Highland

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

SANTA ANA SUCKER TASK FORCE CONFLICT OF INTEREST CONSENT

I, Penny Lilburn, represent that I am authorized on behalf of the City of Highland to execute this Consent. The City of Highland, after having had the opportunity to consult with independent counsel of it choice, acknowledges receipt of the forgoing written disclosure and agrees to the foregoing arrangements. If the City of Highland is a client of either Best Best & Krieger LLP or Downey Brand LLP, the City of Highland hereby consents to the partial payment of counsel's fees by members of the Task Force. If the City of Highland is not a client of either Best Best and Krieger LLP or Downey Brand LLP, the City of Highland hereby acknowledges that the Task Force does not create any attorney-client relationship with either law firm and that Best Best & Krieger LLP will continue only to represent the City of Riverside and Western in this matter while Downey Brand LLP will continue only to represent Valley District in this matter.

Penny Lilburn

Date: July 13, 2010

Penny Lilburn, Mayor
City of Highland

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT
Established 1932

1630 West Redlands Boulevard, Suite A
Redlands, CA 92373-8032
(909) 793-2503
Fax: (909) 793-0188

P.O. Box 1839
Redlands, CA 92373-0581
Email: info@sbvwcd.dst.ca.us
www.sbvwcd.dst.ca.us

Transmittal Letter

Date: August 16, 2010

☐ Pick-Up ☐ Delivery ☒ Mail ☐ Other

Reference: Santa Ana Sucker Joint Prosecution/Cost Sharing Agreement

To: San Bernardino Valley Municipal Water District

Attn: _____

Address: P.O. Box 5906

City: San Bernardino State: CA Zip: 92412

From: Claud Seal

Comments/Attachments: Enclosed: Agreement

BOARD OF DIRECTORS
Richard W. Corneille, Clare Henry Day, Arnold L. Wright, John Longville, David E. Raley, Melody McDonald, Manuel Aranda, Jr.
GENERAL MANAGER
R. Robert Neufeld

DRAFT
[6-8-10 Clean Version]

JOINT PROSECUTION AND COST-SHARING AGREEMENT RE PROPOSED RULE OF THE UNITED STATES FISH & WILDLIFE SERVICE TO DESIGNATE CRITICAL HABITAT FOR THE SANTA ANA SUCKER

This Joint Prosecution and Cost-Sharing Agreement ("Agreement") is entered into by and among the undersigned (the "Parties"), as listed on Exhibit A hereto.

RECITALS

A. The Parties are cooperating on efforts to analyze, review and comment on the United States Fish & Wildlife Service's Proposed Rule to Designate Critical Habitat for the Santa Ana Sucker ("Proposed Rule"). The Proposed Rule may have negative consequences for the Parties, depending on the specifics of the finally adopted rule and the course of administrative proceedings on establishing the rule. The Parties have agreed to cooperate reasonably in efforts to analyze and comment upon the Proposed Rule. These cooperative efforts include the utilization of various experts and consultants to assist with the review of and preparation of comments on the Proposed Rule, and the provision of consulting expert opinions relative to the necessity, wisdom, and efficacy of potential challenges to it. These cooperative efforts are more particularly described in the scopes of work attached hereto as Exhibits B, C, and D, and incorporated herein by this reference.

B. Through this Agreement, the Parties desire to govern their payment of costs and fees arising from their cooperative efforts related to the retention and use of consulting experts on the Proposed Rule, and to confirm their common interests in maintaining a joint prosecution with respect to the Proposed Rule, to allow them to continue to share information related to the Proposed Rule, while continuing to preserve, to the fullest extent possible, the protections of the

attorney-client privilege, work product privilege, common-interest doctrine, deliberative process privilege, executive privilege, privileges regarding mediation or settlement communications, or any other privilege or protection existing under state or federal law.

AGREEMENT

NOW, THEREFORE, in consideration of the above recitals, and the mutual covenants and conditions contained herein, the Parties agree as follows:

1. The Parties shall each initially contribute the sum of $32,000, (except Big Bear Municipal Water District which shall contribute $20,000) which represents each Party's per capita contribution to pay for the fees and costs collectively incurred in their said cooperative efforts on the Proposed Rule. San Bernardino Valley Municipal Water District shall have the responsibility for collecting each Party's contribution of funds, processing invoices submitted by the experts and consultants pursuant to their scopes of work attached hereto, coordinating communications among the Parties to the retained consulting experts, and for maintaining an accurate accounting of this administration of funds. In the event that additional tasks and associated costs are identified in order to meet the joint goals, the Parties will work cooperatively to fund such costs. However, nothing in this Agreement shall be construed to require a Party to pay more than its above-referenced initial per capita contribution towards the total cost for the current scopes of work, which is estimated to be $407,000.

2. For purposes of this Agreement, "Joint Prosecution Materials" includes, but is not limited to, all communications (including communications related to the Proposed Rule made prior to the execution of this Agreement), factual materials, mental impressions, legal analyses,

theories or strategies, memoranda, reports, notes, emails or any other communications or documents that are protected from disclosure by the attorney-client privilege, work product privilege, deliberative process privilege, executive privilege, common-interest doctrine, joint prosecution/defense doctrine, privileges regarding mediation or settlement communications, or any other privilege or protection existing under state or federal law, and that are exchanged among the Parties and/or their respective counsel in connection with the Proposed Rule. Joint Prosecution Materials do not include final versions of any correspondence, studies, or reports prepared by or on behalf of one or more Parties intended for review by the United States Fish & Wildlife Service or a non-Party.

3. The Parties will maintain as confidential all Joint Prosecution Materials (as defined above). Disclosure of Joint Prosecution Materials shall be limited to the Parties and their employees and contractors as well as any counsel, consultants, and lobbyists retained by the parties, or on behalf of the parties, for the purpose of maintaining a joint prosecution with respect to the Proposed Rule, subject to the further provisions of this Agreement.

4. Any Joint Prosecution Materials shared or transmitted by or between Parties should be clearly designated "CONFIDENTIAL: JOINT PROSECUTION MATERIALS." However, the failure to include such designation shall not preclude such materials from being afforded the protections of this Agreement and shall not be construed to constitute a waiver of any privilege or other protection.

5. Each Party shall take all appropriate measures to ensure that any person who is granted access to Joint Prosecution Materials is familiar with the terms of this Agreement and complies with those terms.

6. Each Party is represented by its own respective legal counsel in connection with the Proposed Rule, and the cooperative efforts referenced herein. Said legal counsel will not have an attorney-client relationship with any other Party to this Agreement as a result of the legal counsel's participation in discussions and actions related to the Parties' cooperative efforts on the Proposed Rule. Similarly, said legal counsel will not have a duty of loyalty or confidentiality to any Party to this Agreement other than the legal counsel's specific client(s), and consequently, no Party may seek to disqualify the legal counsel for another Party as a result of the legal counsel's participation in discussions and actions related to the Parties' cooperative efforts on the Proposed Rule.

7. Except where required by the order of a court of competent jurisdiction, or by the prior written consent of the remaining Parties, a Party will not reveal to non-Parties any Joint Prosecution Materials it has received from another Party.

8. Each Party shall notify the Party that generated any Joint Prosecution Materials of any request to disclose the Joint Prosecution Materials to any non-Party, or of any proceeding before any court, administrative agency, or tribunal to compel the disclosure of such Joint Prosecution Materials, as soon as practicable after receipt of such request or the initiation of such proceeding. If a Party becomes subject to any judicial or administrative order purporting to compel release of Joint Prosecution Materials, that Party shall: (a) promptly notify the Party that generated the materials and all remaining Parties, and (b) make all reasonable efforts to give that Party an opportunity to protect the Joint Prosecution Materials.

9. No party is required to treat as confidential within the meaning of this Agreement any material where such material is, or hereafter becomes (without violation of this Agreement),

public record, public knowledge, or is obtained from sources other than exchanges under this Agreement.

10. The sharing of Joint Prosecution Materials among the Parties is not intended to and will not constitute a waiver of any privilege or other protection of confidentiality, including but not limited to the attorney-client privilege, work product privilege, common-interest doctrine, deliberative process privilege, executive privilege, privileges relating to mediation or settlement communications, or any other privilege or protection existing under state or federal law.

11. Execution of this Agreement constitutes the mutual agreement of the Parties that any sharing of Joint Prosecution Materials among themselves is reasonably necessary for the accomplishment of the Parties' common purposes as described above. Any sharing of Joint Prosecution Materials among the Parties is in reliance on this Agreement and the protections that arise from the Parties' common interests in reviewing and commenting on the Proposed rule.

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13. By this Agreement the Parties each acknowledge and agree that cooperation in the matters referenced above may involve the communication and sharing of confidential information and further agree that the interests of the Parties are not adverse as to matters within the scope of this Agreement. Each of the Parties has had a full opportunity to consult with separate counsel, is fully informed, and has concluded that the risk of any potential conflict of interest is outweighed by the benefits and efficiencies afforded by the opportunities for cooperation and sharing of Joint Prosecution Materials as provided for herein. The Parties consent to the sharing of Joint Prosecution Materials among their counsel, waive any potential

conflict of interest created thereby, and mutually agree that this sharing of Joint Prosecution Materials and cooperation shall not constitute grounds for seeking disqualification of counsel in any matter or action.

14. If there is a breach of this Agreement by a Party, the Parties agree that the non-breaching Party will have no adequate remedy at law in money or damages and shall be entitled to seek and obtain, in addition to all other remedies that may be available, a temporary restraining order, injunctive relief, or other equitable relief against the breach or its continuance.

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16. This Agreement shall be binding upon the successors and assigns of the Parties.

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20. All notices and other communications required to be given to a Party under the terms of this Agreement (a) shall be in writing, (b) shall be personally delivered, or transmitted by facsimile or email, and (c) shall be directed to such Party at the address, facsimile number or

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By: _____

Print Name: Clarence W. Sear, Jr.

Date: August 13, 2010

Title: Assistant General Manager

Representing: San Bernardino Valley Water Conservation District

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

Exhibit A

List of Parties

As of June 8, 2010

1. San Bernardino Valley Municipal Water District
2. Western Municipal Water District of Riverside County
3. City of Riverside Public Utilities
4. City of San Bernardino Municipal Water Department
5. San Bernardino Valley Water Conservation District
6. Southern California Edison
7. East Valley Water District
8. City of Highland
9. City of Redlands
10. Yucaipa Valley Water District
11. San Bernardino County Flood Control District
12. Bear Valley Mutual Water Company/Crafton Water Company
13. Big Bear Municipal Water District ($20,000 share)

Other Possible Partner Agencies

1. West Valley Water District
2. Raymond Basin Management Board/San Gabriel Valley Water Association
3. City of Colton
4. City of Rialto
5. Riverside County Flood Control District
6. Orange County Flood Conrol District

Exhibit D

RK

Stacey Aldstadt, Esq
General Manager
City of San Bernardino Municipal
Water Department
444-D, Rialto
San Bernardino, CA 92410

June 4, 2010

Dear Stacey;

The purpose of this letter is to summarize and confirm the term and conditions of the agreement by Richard Katz Consulting Inc, ("Consultant") and X the City of San Bernardino Municipal Water Department ("SBMWD") ("Client").

SCOPE OF SERVICES

The Client retains Consultant to provide strategic advice as it relates to the Federal Governments effort on the Santa Ana Sucker Critical Habitat Designation. Consultant shall offer a critical political overlay to the efforts of the government relations teams representing the member agencies of the Santa Ana Sucker Task Force in Washington, DC. Efforts shall include but not be limited to review of current strategy, assistance in developing new and innovative strategy going forward, and coordination of efforts with federal, state and local entities.

Richard Katz

Ph: 818-995-8575 • Cell: 818-807-5490 • Richard@katzmitchell.com • 4009 Woodman Canyon Ave • Sherman Oaks, CA 91423

PROFESSIONAL FEES

In compensation for the services performed by Consultant on behalf of Client, as outlined above, Client agrees to pay Consultant a monthly retainer of $5,000 per month for 90-days and $3,500 per month on-going until the issue is resolved, beginning June 1, 2010.

REIMBURSEMENT OF EXPENSES INCURRED

Client will reimburse Consultant on a monthly basis for any out-of-pocket expenses reasonably incurred by Consultant on its behalf including, but not limited to, document reproduction charges, facsimile charges, long distant telephone calls, travel expenses and messenger fees. Consultant will send a statement of expenses incurred each month. No expenditure in excess of five Hundred Dollars ($500.00) per month will be made without prior written consent from Client.

TERMINATION

Either party upon thirty (30) days written notice to the other party may terminate this agreement. In the event of such termination, Consultant shall bill Client for all professional services, independent contractor expenses and other costs incurred up to the date of termination.

NO REPRESENTATION THAT PERMITS OR SERVICES WILL BE APPROVED OR SUCCESSFUL

It is impossible to predict the approval or non-approval of any action, which requires discretionary government action. Consequently, while consultant will conscientiously perform all of its responsibilities outlined above, we cannot and do not make any representation to Client that any of the services discussed herein will be granted, acknowledged or approved by any governmental or public jurisdiction. Client acknowledges that none of its obligations under this letter agreement is dependent or conditioned upon approval of any service.

Consultant, its employees and associates, shall not be individually or collectively liable to client, or any party claiming through Client, for any damages resulting from the denial of any discretionary permits or from errors or omissions in

connection with any services provided hereunder for any reason other than willful misconduct.

Consultant shall not be liable to Client, or any party claiming through Client, for any damages resulting from the denial of the application of any governmental approval or service.

ATTORNEY'S FEES

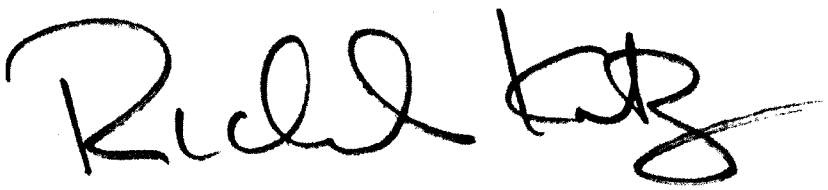
In the event that any litigation is commenced concerning any provision of this letter agreement, the prevailing party will be entitled to recover, in addition to any other relief granted by the court, a reasonable sum for its attorney's fees incurred in the litigation.

CONCLUSION

We believe that the above terms and conditions accurately summarize our agreement for the performance of services related to the project. If you concur, please indicate your approval and acceptance by dating, signing and returning this letter agreement. We have enclosed a signed copy of this letter for your records.

We are very pleased that we are able to be of service to you and look forward to working with you.

All the Best,



Richard Katz

AGREED AND ACCEPTED;
City of San Bernardino Municipal Water Department

By:

_____

Stacey Aldstadt, Esq. Date

Exhibit B

SCOPE OF WORK AND BUDGET

22 April 2010

ACTIVITIES ASSOCIATED WITH RESPONDING TO THE PROPOSED RESESIGNATION OF CRITICAL HABITAT FOR THE SANTA ANA SUCKER

Task 1. General Consulting Assistance

PBS&J (Leidy and colleagues) will assist the Santa Ana Sucker (SAS) Task Force, as requested, with assignments not included in other tasks. Budgeting for this task assumes that this task covers two time periods: 1 April through 30 Jun 2010 and 1 July through 31 December 2010. The period from 1 April through 30 July 2010, a period of 13 weeks, assumes an average labor commitment of 4 hours per week ($11,700 labor). Other direct costs are estimated at $1,000 for this same period (air fare, rental car, etc.). Total budget through 30 June 2010: $12,700. Post 30 June through 31 December 2010 labor budget (26 weeks) with the same assumptions: $23,400. Other direct costs: $2,000. Total budget from July through December: $25,400. Grand total budget (Labor and other direct costs) for this task from 1 April through 31 December 2010: $38,100.

Task 2. Attendance as SAS Conservation Team and Other Relevant Meetings

This task has been consolidated into this scope of work and budget from PBS&J Project No. 100012843 which was initiated on 1 March 2010. Leidy will attend up to 10 meetings of the SAWPA Santa Ana Sucker Conservation Team (including the Restoration Working Group) and the Southern California Native Aquatic Fauna Working Group between 1 March 2020 and 31 December 2010 for the purpose of providing input to the interested parties on the introduction of the SAS in the Santa Ana River watershed, and to gather information on the proposed activities of these groups. Each attendance is expected to be a one-day event. Leidy will summarize in writing the content of each meeting related to SAS issues along with any recommendations for actions on the part of the SAS Task Force. Each meeting is expected to require up to 8 hours in travel and meeting time, plus travel expenses (airfare, rental car and gas, one meal, and personal vehicle mileage. Labor budget (meetings plus write-ups) at 9 hours per meeting plus 0.5 hours administrative time per meeting: $20,900 (Before 30 June 2010: $5,225; Post 30 June 2010: $15,675). Other direct costs: $4,300 (Before 30 June: $1,075; Post 30 June 2010: $3,225). Total

labor and other direct before 30 June: $6,300. Total labor and other direct costs post 30 June 2010: $18,900. Total labor and other direct costs from 1 March through 31 December 2010: $25,200.

Task 3. SAS Enhancement Plan and Project Implementation

There are two phases to this task.

Phase 1

Leidy, working closely with Sam Fuller, is charged with developing a plan to enhance the survival of the SAS population within its existing range in the Santa Ana River basin. The focus geographically will be from the Rialto Drain downstream to the Imperial Highway. This is the reach of the Santa Ana River that currently supports or recently supported the SAS and the reach that will have the greatest probability of implementing a successful project. The plan may include upland sites within this general river reach. The plan will contain appropriate adaptive management elements focused in the short-term on stabilizing the SAS population in the Santa Ana River. The goal is to have one on-the-ground project in place by the end of September 2010. Specific constraints and milestones of the plan are:

- The project must be completed by 30 September 2010;
- The project design must avoid any permitting requirements (other than permission from the USFWS to capture, move, rear, and reintroduce SAS) to meet the schedule (i.e., no 404, 401, 1602, or other permits);
- The project should focus on improving spawning and/or juvenile rearing habitat for the SAS, if feasible;
- Leidy et al. will meet with the USFWS (Ren Lohoefener, Pacific Southwest Regional Director) to present the plan and request approval to move SAS to the project site, if necessary;
- Leidy et al. will request concurrence from the California Department of Fish and Game (Curt Taucher, Regional Manager), and will also request that CDFG release up to $200,000 in funding already provided by San Bernardino Valley Municipal Water District and Western Municipal Water District to CDFG under the terms of the water rights settlement with CDFG; and
- Post-project monitoring and O&M will be required.

To assist with Phase I, Leidy will engage the expert services of Dr. Camm Swift (ENTRIX, Inc.), Dr. Jonathan Baskin (San Marino Environmental Associates), and Kerwin Russell (Riverside-

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Phase 2

Phase 2 is a longer term continuation of Phase 1 that will occur over a two to three-year schedule at a funding level of approximately $100,000 to $150,000 per year. Phase 2 will develop additional projects that enhance and stabilize the SAS population within its existing range in the Santa Ana River basin. Project undertaken during this phase may require permitting and may focus on any activity that enhances SAS survival or improves habitat. Phase 2 is not budgeted at this time and will not be budgeted until Phase 1 is completed and we know better the level-of-effort required to continue with additional projects.

Task 4. Alternative Streams Investigation

This task will focus on evaluating the feasibility of establishing SAS populations elsewhere in the Santa Ana River basin outside of the current range of the species. New refugia for the SAS will be evaluated taking into consideration the following:

- Location relative to the parent population and existing infrastructure;
- Selection criteria for evaluating the suitability of specific locations to support viable populations of the SAS over time, including a risk analysis of potential threats; and
- Financial and institutional requirements to create, maintain, and monitor SAS populations at selected locations.

Leidy et al. will evaluate a select number of tributaries to the Santa Ana River that may contain the PCEs necessary to support an introduced SAS population in the future. This investigation will be at the reconnaissance level and the product will be a report presenting the results. Task 4 will be initiated prior to 30 June 2010, and will be completed prior to the end of calendar year 2010. Leidy will use experienced, mid-level fish biologists from PBS&J to assist with this task to contain costs. Approximately 25 streams will be evaluated. The evaluation will also include

site visits to confirm environmental conditions. A records search of resource agency files may also be required.

The labor costs incurred prior to 1 July 2010 will be for information gathering and site visits. This cost is estimated at $11,200. Other direct costs prior to 1 July: $3,500. Total budget prior to 1 July: $14,700. Completion of the report following 30 June 2010 is estimated at $11,200. Other direct costs after 30 June: $500. Total budget after 30 June: $11,700. Total budget for task: $26,400.

Task 5. Additional Responses to the Economic Study

Leidy will provide additional comments, if necessary, on the draft economic study issued by the USFWS. This effort is estimated at 24 hours labor ($5,400) plus other direct costs ($400), for a total budget of $5,800.

Budget Summary for the Proposed Scope of Work

Task	1 March-30 June ($)	1 July-31 December ($)	Total ($)
1	12,700	25,400	38,100
2	6,300	18,900	25,200
3	39,120	65,480	104,600
4	14,700	11,700	26,400
5	5,800	0	5,800
Total	78,620	121,480	200,100

JOINT PROSECUTION AND COST-SHARING AGREEMENT RE PROPOSED RULE OF THE UNITED STATES FISH & WILDLIFE SERVICE TO DESIGNATE CRITICAL HABITAT FOR THE SANTA ANA SUCKER

This Joint Prosecution and Cost-Sharing Agreement ("Agreement") is entered into by and among the undersigned (the "Parties"), as listed on Exhibit A hereto.

RECITALS

A. The Parties are cooperating on efforts to analyze, review and comment on the United States Fish & Wildlife Service's Proposed Rule to Designate Critical Habitat for the Santa Ana Sucker ("Proposed Rule"). The Proposed Rule may have negative consequences for the Parties, depending on the specifics of the finally adopted rule and the course of administrative proceedings on establishing the rule. The Parties have agreed to cooperate reasonably in efforts to analyze and comment upon the Proposed Rule. These cooperative efforts include the utilization of various experts and consultants to assist with the review of and preparation of comments on the Proposed Rule, and the provision of consulting expert opinions relative to the necessity, wisdom, and efficacy of potential challenges to it. These cooperative efforts are more particularly described in the scopes of work attached hereto as Exhibits B, C, and D, and incorporated herein by this reference.

B. Through this Agreement, the Parties desire to govern their payment of costs and fees arising from their cooperative efforts related to the retention and use of consulting experts on the Proposed Rule, and to confirm their common interests in maintaining a joint prosecution with respect to the Proposed Rule, to allow them to continue to share information related to the Proposed Rule, while continuing to preserve, to the fullest extent possible, the protections of the attorney-client privilege, work product privilege, common-interest doctrine, deliberative process

privilege, executive privilege, privileges regarding mediation or settlement communications, or any other privilege or protection existing under state or federal law.

AGREEMENT

NOW, THEREFORE, in consideration of the above recitals, and the mutual covenants and conditions contained herein, the Parties agree as follows:

1. The Parties shall each initially contribute the sum of $32,000, (except Big Bear Municipal Water District which shall contribute $20,000) which represents each Party's per capita contribution to pay for the fees and costs collectively incurred in their said cooperative efforts on the Proposed Rule. San Bernardino Valley Municipal Water District shall have the responsibility for collecting each Party's contribution of funds, processing invoices submitted by the experts and consultants pursuant to their scopes of work attached hereto, coordinating communications among the Parties to the retained consulting experts, and for maintaining an accurate accounting of this administration of funds. In the event that additional tasks and associated costs are identified in order to meet the joint goals, the Parties will work cooperatively to fund such costs. However, nothing in this Agreement shall be construed to require a Party to pay more than its above-referenced initial per capita contribution towards the total cost for the current scopes of work, which is estimated to be $407,000.

2. For purposes of this Agreement, "Joint Prosecution Materials" includes, but is not limited to, all communications (including communications related to the Proposed Rule made prior to the execution of this Agreement), factual materials, mental impressions, legal analyses, theories or strategies, memoranda, reports, notes, emails or any other communications or

documents that are protected from disclosure by the attorney-client privilege, work product privilege, deliberative process privilege, executive privilege, common-interest doctrine, joint prosecution/defense doctrine, privileges regarding mediation or settlement communications, or any other privilege or protection existing under state or federal law, and that are exchanged among the Parties and/or their respective counsel in connection with the Proposed Rule. Joint Prosecution Materials do not include final versions of any correspondence, studies, or reports prepared by or on behalf of one or more Parties intended for review by the United States Fish & Wildlife Service or a non-Party.

3. The Parties will maintain as confidential all Joint Prosecution Materials (as defined above). Disclosure of Joint Prosecution Materials shall be limited to the Parties and their employees and contractors as well as any counsel, consultants, and lobbyists retained by the parties, or on behalf of the parties, for the purpose of maintaining a joint prosecution with respect to the Proposed Rule, subject to the further provisions of this Agreement.

4. Any Joint Prosecution Materials shared or transmitted by or between Parties should be clearly designated "CONFIDENTIAL: JOINT PROSECUTION MATERIALS." However, the failure to include such designation shall not preclude such materials from being afforded the protections of this Agreement and shall not be construed to constitute a waiver of any privilege or other protection.

5. Each Party shall take all appropriate measures to ensure that any person who is granted access to Joint Prosecution Materials is familiar with the terms of this Agreement and complies with those terms.

6. Each Party is represented by its own respective legal counsel in connection with the Proposed Rule, and the cooperative efforts referenced herein. Said legal counsel will not

have an attorney-client relationship with any other Party to this Agreement as a result of the legal counsel's participation in discussions and actions related to the Parties' cooperative efforts on the Proposed Rule. Similarly, said legal counsel will not have a duty of loyalty or confidentiality to any Party to this Agreement other than the legal counsel's specific client(s), and consequently, no Party may seek to disqualify the legal counsel for another Party as a result of the legal counsel's participation in discussions and actions related to the Parties' cooperative efforts on the Proposed Rule.

7. Except where required by the order of a court of competent jurisdiction, or by the prior written consent of the remaining Parties, a Party will not reveal to non-Parties any Joint Prosecution Materials it has received from another Party.

8. Each Party shall notify the Party that generated any Joint Prosecution Materials of any request to disclose the Joint Prosecution Materials to any non-Party, or of any proceeding before any court, administrative agency, or tribunal to compel the disclosure of such Joint Prosecution Materials, as soon as practicable after receipt of such request or the initiation of such proceeding. If a Party becomes subject to any judicial or administrative order purporting to compel release of Joint Prosecution Materials, that Party shall: (a) promptly notify the Party that generated the materials and all remaining Parties, and (b) make all reasonable efforts to give that Party an opportunity to protect the Joint Prosecution Materials.

9. No party is required to treat as confidential within the meaning of this Agreement any material where such material is, or hereafter becomes (without violation of this Agreement), public record, public knowledge, or is obtained from sources other than exchanges under this Agreement.

10. The sharing of Joint Prosecution Materials among the Parties is not intended to and will not constitute a waiver of any privilege or other protection of confidentiality, including but not limited to the attorney-client privilege, work product privilege, common-interest doctrine, deliberative process privilege, executive privilege, privileges relating to mediation or settlement communications, or any other privilege or protection existing under state or federal law.

11. Execution of this Agreement constitutes the mutual agreement of the Parties that any sharing of Joint Prosecution Materials among themselves is reasonably necessary for the accomplishment of the Parties' common purposes as described above. Any sharing of Joint Prosecution Materials among the Parties is in reliance on this Agreement and the protections that arise from the Parties' common interests in reviewing and commenting on the Proposed rule.

12. Nothing in this Agreement shall obligate any Party to exchange documents or information with any other Party, whether or not such documents or information would be covered by this Agreement as Joint Prosecution Materials.

13. By this Agreement the Parties each acknowledge and agree that cooperation in the matters referenced above may involve the communication and sharing of confidential information and further agree that the interests of the Parties are not adverse as to matters within the scope of this Agreement. Each of the Parties has had a full opportunity to consult with separate counsel, is fully informed, and has concluded that the risk of any potential conflict of interest is outweighed by the benefits and efficiencies afforded by the opportunities for cooperation and sharing of Joint Prosecution Materials as provided for herein. The Parties consent to the sharing of Joint Prosecution Materials among their counsel, waive any potential conflict of interest created thereby, and mutually agree that this sharing of Joint Prosecution

Materials and cooperation shall not constitute grounds for seeking disqualification of counsel in any matter or action.

14. If there is a breach of this Agreement by a Party, the Parties agree that the non-breaching Party will have no adequate remedy at law in money or damages and shall be entitled to seek and obtain, in addition to all other remedies that may be available, a temporary restraining order, injunctive relief, or other equitable relief against the breach or its continuance.

15. Nothing in this Agreement shall be construed to waive any rights, claims, or privileges that any Party shall have against another Party or any other person or entity.

16. This Agreement shall be binding upon the successors and assigns of the Parties.

17. This Agreement is made under, and shall be construed in accordance with, the laws of the State of California.

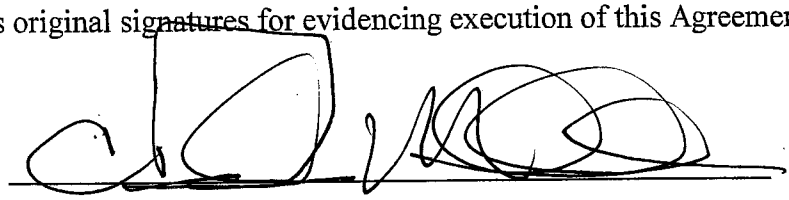
18. The individuals signing this Agreement in a representative capacity warrant that they have the authority to do so on behalf of the entity or entities they represent, and further agree that as representatives of the entity or entities that they respectively represent, they themselves are bound by all terms of this Agreement.

19. Any Party may withdraw from this Agreement by providing written notice to the other Parties. If a Party withdraws from this Agreement, the provisions of this Agreement shall continue to apply to the Joint Prosecution Materials that were shared during the time period when that Party was a party to this Agreement.

20. All notices and other communications required to be given to a Party under the terms of this Agreement (a) shall be in writing, (b) shall be personally delivered, or transmitted by facsimile or email, and (c) shall be directed to such Party at the address, facsimile number or

email address specified below, or at such other address, facsimile number or email address as such Party may hereafter designate by notice in accordance with this paragraph.

21. This Agreement may be executed in counterparts, each of which so executed shall be deemed an original irrespective of the date of the execution, and said counterparts shall together constitute one and the same Agreement. Further, facsimile or .PDF copies of signatures shall be as effective as original signatures for evidencing execution of this Agreement.

By: 

Print Name: C. Patrick Milligan

Date: 8/18/10

Title: Board President

Representing: San Bernardino Valley Municipal Water District

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

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Exhibit B

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22 April 2010

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Phase 2

Phase 2 is a longer term continuation of Phase 1 that will occur over a two to three-year schedule at a funding level of approximately $100,000 to $150,000 per year. Phase 2 will develop additional projects that enhance and stabilize the SAS population within its existing range in the Santa Ana River basin. Project undertaken during this phase may require permitting and may focus on any activity that enhances SAS survival or improves habitat. Phase 2 is not budgeted at this time and will not be budgeted until Phase 1 is completed and we know better the level-of-effort required to continue with additional projects.

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5	5,800	0	5,800
Total	78,620	121,480	200,100

Exhibit C

Legal Budget/Scope
Santa Ana Sucker Critical Habitat Designation

Best, Best & Krieger LLP on behalf of the Western Municipal Water District and City of Riverside and Downey Brand, LLP on behalf of the San Bernardino Valley Municipal Water District will undertake the tasks described in this Exhibit and will do so in cooperation with other Task Force members and their attorneys

Task 1 – General Coordination

This task involves general coordination efforts with the Santa Ana sucker task force and attendance at the monthly task force meetings. For purposes of the budget/scope, we have assumed that the task force will meet monthly from April through September and then meet in either October or November.

Task 2 Preparation of Comments on Economic Analysis

Task 2.1 involves legal coordination with John Husing as he prepares his comments based on the project descriptions submitted by participating agencies. We anticipate that most of those comments will focus on the economic impacts of critical habitat designation, but we anticipate some need to work with Husing to establish the legal framework for his analysis.

Task 2.2 involves the attendance at the Fish & Wildlife Service hearing on the economic analysis.

Task 3. Preparation of Enhancement Project

Task 3.1 involves legal coordination with Roy Leidy as he works with Camm Swift and John Baskin to develop the proposed Santa Ana sucker enhancement project.

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Santa Ana Sucker Critical Habitat Designation
Legal Budget

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	Hours	Fees/Costs	Hours	Fees/Costs		
Task 1 -- General Coordination	50	$15,000	70	$21,000	$3,600	$39,600
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Exhibit D

RK

Stacey Aldstadt, Esq
General Manager
City of San Bernardino Municipal
Water Department
444-D, Rialto
San Bernardino, CA 92410

June 4, 2010

Dear Stacey;

The purpose of this letter is to summarize and confirm the term and conditions of the agreement by Richard Katz Consulting Inc, ("Consultant") and X the City of San Bernardino Municipal Water Department ("SBMWD") ("Client").

SCOPE OF SERVICES

The Client retains Consultant to provide strategic advice as it relates to the Federal Governments effort on the Santa Ana Sucker Critical Habitat Designation. Consultant shall offer a critical political overlay to the efforts of the government relations teams representing the member agencies of the Santa Ana Sucker Task Force in Washington, DC. Efforts shall include but not be limited to review of current strategy, assistance in developing new and innovative strategy going forward, and coordination of efforts with federal, state and local entities.

Richard Katz

Ph: 818-995-8575 • Cell: 818-807-5490 • Richard@katzmitchell.com • 4009 Woodman Canyon Ave • Sherman Oaks, CA 91423

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In compensation for the services performed by Consultant on behalf of Client, as outlined above, Client agrees to pay Consultant a monthly retainer of $5,000 per month for 90-days and $3,500 per month on-going until the issue is resolved, beginning June 1, 2010.

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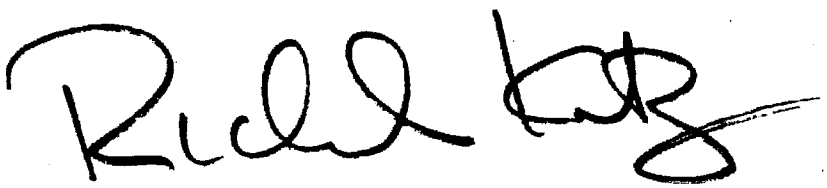
We believe that the above terms and conditions accurately summarize our agreement for the performance of services related to the project. If you concur, please indicate your approval and acceptance by dating, signing and returning this letter agreement. We have enclosed a signed copy of this letter for your records.

We are very pleased that we are able to be of service to you and look forward to working with you.

All the Best,



Richard Katz

AGREED AND ACCEPTED;
City of San Bernardino Municipal Water Department

By: _____

Stacey Aldstadt, Esq. Date

JOINT PROSECUTION AND COST-SHARING AGREEMENT RE PROPOSED RULE OF THE UNITED STATES FISH & WILDLIFE SERVICE TO DESIGNATE CRITICAL HABITAT FOR THE SANTA ANA SUCKER

This Joint Prosecution and Cost-Sharing Agreement ("Agreement") is entered into by and among the undersigned (the "Parties"), as listed on Exhibit A hereto.

RECITALS

A. The Parties are cooperating on efforts to analyze, review and comment on the United States Fish & Wildlife Service's Proposed Rule to Designate Critical Habitat for the Santa Ana Sucker ("Proposed Rule"). The Proposed Rule may have negative consequences for the Parties, depending on the specifics of the finally adopted rule and the course of administrative proceedings on establishing the rule. The Parties have agreed to cooperate reasonably in efforts to analyze and comment upon the Proposed Rule. These cooperative efforts include the utilization of various experts and consultants to assist with the review of and preparation of comments on the Proposed Rule, and the provision of consulting expert opinions relative to the necessity, wisdom, and efficacy of potential challenges to it. These cooperative efforts are more particularly described in the scopes of work attached hereto as Exhibits B, C, and D, and incorporated herein by this reference.

B. Through this Agreement, the Parties desire to govern their payment of costs and fees arising from their cooperative efforts related to the retention and use of consulting experts on the Proposed Rule, and to confirm their common interests in maintaining a joint prosecution with respect to the Proposed Rule, to allow them to continue to share information related to the Proposed Rule, while continuing to preserve, to the fullest extent possible, the protections of the attorney-client privilege, work product privilege, common-interest doctrine, deliberative process

privilege, executive privilege, privileges regarding mediation or settlement communications, or any other privilege or protection existing under state or federal law.

AGREEMENT

NOW, THEREFORE, in consideration of the above recitals, and the mutual covenants and conditions contained herein, the Parties agree as follows:

1. The Parties shall each initially contribute the sum of $32,000, (except Big Bear Municipal Water District which shall contribute $20,000) which represents each Party's per capita contribution to pay for the fees and costs collectively incurred in their said cooperative efforts on the Proposed Rule. San Bernardino Valley Municipal Water District shall have the responsibility for collecting each Party's contribution of funds, processing invoices submitted by the experts and consultants pursuant to their scopes of work attached hereto, coordinating communications among the Parties to the retained consulting experts, and for maintaining an accurate accounting of this administration of funds. In the event that additional tasks and associated costs are identified in order to meet the joint goals, the Parties will work cooperatively to fund such costs. However, nothing in this Agreement shall be construed to require a Party to pay more than its above-referenced initial per capita contribution towards the total cost for the current scopes of work, which is estimated to be $407,000.

2. For purposes of this Agreement, "Joint Prosecution Materials" includes, but is not limited to, all communications (including communications related to the Proposed Rule made prior to the execution of this Agreement), factual materials, mental impressions, legal analyses, theories or strategies, memoranda, reports, notes, emails or any other communications or

documents that are protected from disclosure by the attorney-client privilege, work product privilege, deliberative process privilege, executive privilege, common-interest doctrine, joint prosecution/defense doctrine, privileges regarding mediation or settlement communications, or any other privilege or protection existing under state or federal law, and that are exchanged among the Parties and/or their respective counsel in connection with the Proposed Rule. Joint Prosecution Materials do not include final versions of any correspondence, studies, or reports prepared by or on behalf of one or more Parties intended for review by the United States Fish & Wildlife Service or a non-Party.

3. The Parties will maintain as confidential all Joint Prosecution Materials (as defined above). Disclosure of Joint Prosecution Materials shall be limited to the Parties and their employees and contractors as well as any counsel, consultants, and lobbyists retained by the parties, or on behalf of the parties, for the purpose of maintaining a joint prosecution with respect to the Proposed Rule, subject to the further provisions of this Agreement.

4. Any Joint Prosecution Materials shared or transmitted by or between Parties should be clearly designated "CONFIDENTIAL: JOINT PROSECUTION MATERIALS." However, the failure to include such designation shall not preclude such materials from being afforded the protections of this Agreement and shall not be construed to constitute a waiver of any privilege or other protection.

5. Each Party shall take all appropriate measures to ensure that any person who is granted access to Joint Prosecution Materials is familiar with the terms of this Agreement and complies with those terms.

6. Each Party is represented by its own respective legal counsel in connection with the Proposed Rule, and the cooperative efforts referenced herein. Said legal counsel will not

have an attorney-client relationship with any other Party to this Agreement as a result of the legal counsel's participation in discussions and actions related to the Parties' cooperative efforts on the Proposed Rule. Similarly, said legal counsel will not have a duty of loyalty or confidentiality to any Party to this Agreement other than the legal counsel's specific client(s), and consequently, no Party may seek to disqualify the legal counsel for another Party as a result of the legal counsel's participation in discussions and actions related to the Parties' cooperative efforts on the Proposed Rule.

7. Except where required by the order of a court of competent jurisdiction, or by the prior written consent of the remaining Parties, a Party will not reveal to non-Parties any Joint Prosecution Materials it has received from another Party.

8. Each Party shall notify the Party that generated any Joint Prosecution Materials of any request to disclose the Joint Prosecution Materials to any non-Party, or of any proceeding before any court, administrative agency, or tribunal to compel the disclosure of such Joint Prosecution Materials, as soon as practicable after receipt of such request or the initiation of such proceeding. If a Party becomes subject to any judicial or administrative order purporting to compel release of Joint Prosecution Materials, that Party shall: (a) promptly notify the Party that generated the materials and all remaining Parties, and (b) make all reasonable efforts to give that Party an opportunity to protect the Joint Prosecution Materials.

9. No party is required to treat as confidential within the meaning of this Agreement any material where such material is, or hereafter becomes (without violation of this Agreement), public record, public knowledge, or is obtained from sources other than exchanges under this Agreement.

10. The sharing of Joint Prosecution Materials among the Parties is not intended to and will not constitute a waiver of any privilege or other protection of confidentiality, including but not limited to the attorney-client privilege, work product privilege, common-interest doctrine, deliberative process privilege, executive privilege, privileges relating to mediation or settlement communications, or any other privilege or protection existing under state or federal law.

11. Execution of this Agreement constitutes the mutual agreement of the Parties that any sharing of Joint Prosecution Materials among themselves is reasonably necessary for the accomplishment of the Parties' common purposes as described above. Any sharing of Joint Prosecution Materials among the Parties is in reliance on this Agreement and the protections that arise from the Parties' common interests in reviewing and commenting on the Proposed rule.

12. Nothing in this Agreement shall obligate any Party to exchange documents or information with any other Party, whether or not such documents or information would be covered by this Agreement as Joint Prosecution Materials.

13. By this Agreement the Parties each acknowledge and agree that cooperation in the matters referenced above may involve the communication and sharing of confidential information and further agree that the interests of the Parties are not adverse as to matters within the scope of this Agreement. Each of the Parties has had a full opportunity to consult with separate counsel, is fully informed, and has concluded that the risk of any potential conflict of interest is outweighed by the benefits and efficiencies afforded by the opportunities for cooperation and sharing of Joint Prosecution Materials as provided for herein. The Parties consent to the sharing of Joint Prosecution Materials among their counsel, waive any potential conflict of interest created thereby, and mutually agree that this sharing of Joint Prosecution

Materials and cooperation shall not constitute grounds for seeking disqualification of counsel in any matter or action.

14. If there is a breach of this Agreement by a Party, the Parties agree that the non-breaching Party will have no adequate remedy at law in money or damages and shall be entitled to seek and obtain, in addition to all other remedies that may be available, a temporary restraining order, injunctive relief, or other equitable relief against the breach or its continuance.

15. Nothing in this Agreement shall be construed to waive any rights, claims, or privileges that any Party shall have against another Party or any other person or entity.

16. This Agreement shall be binding upon the successors and assigns of the Parties.

17. This Agreement is made under, and shall be construed in accordance with, the laws of the State of California.

18. The individuals signing this Agreement in a representative capacity warrant that they have the authority to do so on behalf of the entity or entities they represent, and further agree that as representatives of the entity or entities that they respectively represent, they themselves are bound by all terms of this Agreement.

19. Any Party may withdraw from this Agreement by providing written notice to the other Parties. If a Party withdraws from this Agreement, the provisions of this Agreement shall continue to apply to the Joint Prosecution Materials that were shared during the time period when that Party was a party to this Agreement.

20. All notices and other communications required to be given to a Party under the terms of this Agreement (a) shall be in writing, (b) shall be personally delivered, or transmitted by facsimile or email, and (c) shall be directed to such Party at the address, facsimile number or

email address specified below, or at such other address, facsimile number or email address as such Party may hereafter designate by notice in accordance with this paragraph.

21. This Agreement may be executed in counterparts, each of which so executed shall be deemed an original irrespective of the date of the execution, and said counterparts shall together constitute one and the same Agreement. Further, facsimile or .PDF copies of signatures shall be as effective as original signatures for evidencing execution of this Agreement.

By: _____

Print Name: N. Enrique Martinez

Date: August 24, 2010

Title: City Manager

Representing: City of Redlands

ATTEST:

_____
Sam Irwin, City Clerk

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

Exhibit A

List of Parties

As of June 8, 2010

1. San Bernardino Valley Municipal Water District
2. Western Municipal Water District of Riverside County
3. City of Riverside Public Utilities
4. City of San Bernardino Municipal Water Department
5. San Bernardino Valley Water Conservation District
6. Southern California Edison
7. East Valley Water District
8. City of Highland
9. City of Redlands
10. Yucaipa Valley Water District
11. San Bernardino County Flood Control District
12. Bear Valley Mutual Water Company/Crafton Water Company
13. Big Bear Municipal Water District ($20,000 share)

Other Possible Partner Agencies

1. West Valley Water District
2. Raymond Basin Management Board/San Gabriel Valley Water Association
3. City of Colton
4. City of Rialto
5. Riverside County Flood Control District
6. Orange County Flood Conrol District

Exhibit B

SCOPE OF WORK AND BUDGET

22 April 2010

ACTIVITIES ASSOCIATED WITH RESPONDING TO THE PROPOSED RESESIGNATION OF CRITICAL HABITAT FOR THE SANTA ANA SUCKER

Task 1. General Consulting Assistance

PBS&J (Leidy and colleagues) will assist the Santa Ana Sucker (SAS) Task Force, as requested, with assignments not included in other tasks. Budgeting for this task assumes that this task covers two time periods: 1 April through 30 Jun 2010 and 1 July through 31 December 2010. The period from 1 April through 30 July 2010, a period of 13 weeks, assumes an average labor commitment of 4 hours per week ($11,700 labor). Other direct costs are estimated at $1,000 for this same period (air fare, rental car, etc.). Total budget through 30 June 2010: $12,700. Post 30 June through 31 December 2010 labor budget (26 weeks) with the same assumptions: $23,400. Other direct costs: $2,000. Total budget from July through December: $25,400. Grand total budget (Labor and other direct costs) for this task from 1 April through 31 December 2010: $38,100.

Task 2. Attendance as SAS Conservation Team and Other Relevant Meetings

This task has been consolidated into this scope of work and budget from PBS&J Project No. 100012843 which was initiated on 1 March 2010. Leidy will attend up to 10 meetings of the SAWPA Santa Ana Sucker Conservation Team (including the Restoration Working Group) and the Southern California Native Aquatic Fauna Working Group between 1 March 2020 and 31 December 2010 for the purpose of providing input to the interested parties on the introduction of the SAS in the Santa Ana River watershed, and to gather information on the proposed activities of these groups. Each attendance is expected to be a one-day event. Leidy will summarize in writing the content of each meeting related to SAS issues along with any recommendations for actions on the part of the SAS Task Force. Each meeting is expected to require up to 8 hours in travel and meeting time, plus travel expenses (airfare, rental car and gas, one meal, and personal vehicle mileage. Labor budget (meetings plus write-ups) at 9 hours per meeting plus 0.5 hours administrative time per meeting: $20,900 (Before 30 June 2010: $5,225; Post 30 June 2010: $15,675). Other direct costs: $4,300 (Before 30 June: $1,075; Post 30 June 2010: $3,225). Total

labor and other direct before 30 June: $6,300. Total labor and other direct costs post 30 June 2010: $18,900. Total labor and other direct costs from 1 March through 31 December 2010: $25,200.

Task 3. SAS Enhancement Plan and Project Implementation

There are two phases to this task.

Phase 1

Leidy, working closely with Sam Fuller, is charged with developing a plan to enhance the survival of the SAS population within its existing range in the Santa Ana River basin. The focus geographically will be from the Rialto Drain downstream to the Imperial Highway. This is the reach of the Santa Ana River that currently supports or recently supported the SAS and the reach that will have the greatest probability of implementing a successful project. The plan may include upland sites within this general river reach. The plan will contain appropriate adaptive management elements focused in the short-term on stabilizing the SAS population in the Santa Ana River. The goal is to have one on-the-ground project in place by the end of September 2010. Specific constraints and milestones of the plan are:

- The project must be completed by 30 September 2010;
- The project design must avoid any permitting requirements (other than permission from the USFWS to capture, move, rear, and reintroduce SAS) to meet the schedule (i.e., no 404, 401, 1602, or other permits);
- The project should focus on improving spawning and/or juvenile rearing habitat for the SAS, if feasible;
- Leidy et al. will meet with the USFWS (Ren Lohoefener, Pacific Southwest Regional Director) to present the plan and request approval to move SAS to the project site, if necessary;
- Leidy et al. will request concurrence from the California Department of Fish and Game (Curt Taucher, Regional Manager), and will also request that CDFG release up to $200,000 in funding already provided by San Bernardino Valley Municipal Water District and Western Municipal Water District to CDFG under the terms of the water rights settlement with CDFG; and
- Post-project monitoring and O&M will be required.

To assist with Phase I, Leidy will engage the expert services of Dr. Camm Swift (ENTRIX, Inc.), Dr. Jonathan Baskin (San Marino Environmental Associates), and Kerwin Russell (Riverside-

Corona Resource Conservation District), as necessary, to design the project. Phase 1 has substantial unknowns at this time relative to the difficulty of implementing a project. If the process goes smoothly (for example, the project can make use of existing facilities at the RCRCD), then the cost will be less than the cost estimated herein. Leidy has budgeted a moderate level-of-effort, but by no means a highly complicated or expensive scenario. Planning for Task 3, Phase 1, is to be completed prior to 30 June 2010. The budget is based on all activities undertaken prior to 1 July 2010 and does not include Phase 1 construction-related planning or construction implementation. The budget breakdown is presented in the attached table. The total budget prior to 1 July 2010: $39,120. The total budget for the period from July through December 2010: $65,480. Total Task 3, Phase 1 budget for 2010: $104,600.

Phase 2

Phase 2 is a longer term continuation of Phase 1 that will occur over a two to three-year schedule at a funding level of approximately $100,000 to $150,000 per year. Phase 2 will develop additional projects that enhance and stabilize the SAS population within its existing range in the Santa Ana River basin. Project undertaken during this phase may require permitting and may focus on any activity that enhances SAS survival or improves habitat. Phase 2 is not budgeted at this time and will not be budgeted until Phase 1 is completed and we know better the level-of-effort required to continue with additional projects.

Task 4. Alternative Streams Investigation

This task will focus on evaluating the feasibility of establishing SAS populations elsewhere in the Santa Ana River basin outside of the current range of the species. New refugia for the SAS will be evaluated taking into consideration the following:

- Location relative to the parent population and existing infrastructure;
- Selection criteria for evaluating the suitability of specific locations to support viable populations of the SAS over time, including a risk analysis of potential threats; and
- Financial and institutional requirements to create, maintain, and monitor SAS populations at selected locations.

Leidy et al. will evaluate a select number of tributaries to the Santa Ana River that may contain the PCEs necessary to support an introduced SAS population in the future. This investigation will be at the reconnaissance level and the product will be a report presenting the results. Task 4 will be initiated prior to 30 June 2010, and will be completed prior to the end of calendar year 2010. Leidy will use experienced, mid-level fish biologists from PBS&J to assist with this task to contain costs. Approximately 25 streams will be evaluated. The evaluation will also include

site visits to confirm environmental conditions. A records search of resource agency files may also be required.

The labor costs incurred prior to 1 July 2010 will be for information gathering and site visits. This cost is estimated at $11,200. Other direct costs prior to 1 July: $3,500. Total budget prior to 1 July: $14,700. Completion of the report following 30 June 2010 is estimated at $11,200. Other direct costs after 30 June: $500. Total budget after 30 June: $11,700. Total budget for task: $26,400.

Task 5. Additional Responses to the Economic Study

Leidy will provide additional comments, if necessary, on the draft economic study issued by the USFWS. This effort is estimated at 24 hours labor ($5,400) plus other direct costs ($400), for a total budget of $5,800.

Budget Summary for the Proposed Scope of Work

Task	1 March-30 June ($)	1 July-31 December ($)	Total ($)
1	12,700	25,400	38,100
2	6,300	18,900	25,200
3	39,120	65,480	104,600
4	14,700	11,700	26,400
5	5,800	0	5,800
Total	78,620	121,480	200,100

Exhibit C

Legal Budget/Scope
Santa Ana Sucker Critical Habitat Designation

Best, Best & Krieger LLP on behalf of the Western Municipal Water District and City of Riverside and Downey Brand, LLP on behalf of the San Bernardino Valley Municipal Water District will undertake the tasks described in this Exhibit and will do so in cooperation with other Task Force members and their attorneys

Task 1 – General Coordination

This task involves general coordination efforts with the Santa Ana sucker task force and attendance at the monthly task force meetings. For purposes of the budget/scope, we have assumed that the task force will meet monthly from April through September and then meet in either October or November.

Task 2 Preparation of Comments on Economic Analysis

Task 2.1 involves legal coordination with John Husing as he prepares his comments based on the project descriptions submitted by participating agencies. We anticipate that most of those comments will focus on the economic impacts of critical habitat designation, but we anticipate some need to work with Husing to establish the legal framework for his analysis.

Task 2.2 involves the attendance at the Fish & Wildlife Service hearing on the economic analysis.

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Task 3.1 involves legal coordination with Roy Leidy as he works with Camm Swift and John Baskin to develop the proposed Santa Ana sucker enhancement project.

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Santa Ana Sucker Critical Habitat Designation
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City of San Bernardino Municipal
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444-D, Rialto
San Bernardino, CA 92410

June 4, 2010

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Richard Katz

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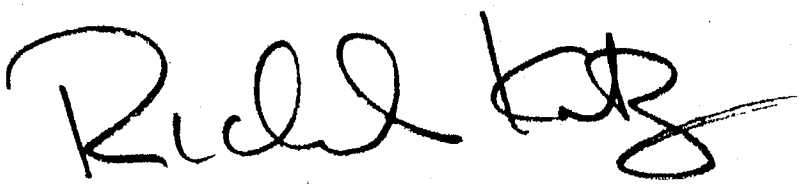
We are very pleased that we are able to be of service to you and look forward to working with you.

All the Best,



Richard Katz

AGREED AND ACCEPTED;
City of San Bernardino Municipal Water Department

By: _____

Stacey Aldstadt, Esq. Date

SAN BERNARDINO Valley MUNICIPAL WATER DISTRICT

SIGN-IN SHEET

MEETING: Santa Ana Sucker Taskforce Meeting

DATE: November 8, 2012

NAME	AGENCY	PHONE	E-MAIL
CHRIS DIGAR	REDLANDS	( )	
Tom Crowley	WVWD	( )	
Melody McDonald	SBVWCD	( )	
JEFF CRIDER	SBVMWD	( )	
Jennifer Ares	YVWD	( )	
Kevin Milligan	RPU	( )	
		( )	
DAVID ARADJEN	in room	( )	
GREG WILKINSON	in room	( )	
SUSAN WILSON	in room	( )	
BOB	in room	( )	
SCOTT HOUSE	– emailed Genetic Analysis		–
ROY LEIDY	– emailed Genetic Analysis		
JOHN MURA	– emailed		
FRED HICKS	– NOT emailed	( ) NO CONTACT INFORMATION.	
ANDY HITCHINGS	– emailed Genetic Analysis		
STEVE KENNEDY	– emailed	( )	
HEATHER HENNESSEY	– emailed		
		( )	

SANTA ANA SUCKER TASK FORCE
November 8, 2012

- **The reasons for our lawsuit against the Fish and Wildlife Service have not changed.**
  - The designation of critical habitat for the SAS continues to threaten the exercise of water rights granted by the State Water Resources Control Board for the diversion and use of water stored behind Seven Oaks Dam.
  - The habitat designation continues to threaten numerous projects planned by Task Force members for the Santa Ana River watershed, including local supply projects needed for water supply reliability.
  - The habitat designation threatens the long established allocation of water between the upper and lower watersheds of the Santa Ana River by interfering with efforts in the Upper Area to conserve additional water supplies.
- **The District Court's decision is vulnerable to an appeal.**
  - The district court effectively reads Section 2(c)(2) of the ESA (requiring federal agencies to "cooperate" with state and local agencies to "resolve" water resource issues "in concert" with the conservation of endangered species) out of existence.
  - The district court's decision flatly ignores the Government's commitments in the Western Riverside MSHCP and disregards the requirement of the MSHCP and its Implementing Agreement that the Government make a finding of non-implementation of the MSHCP before covered lands are designated as critical habitat.
    - In doing so, the district court's ruling effectively eviscerates the "No Surprises" Rule developed by the Clinton Administration and undermines the incentives for land owners to encumber their lands with the restrictions imposed by HCPs.
  - The decision effectively immunizes critical habitat designations from judicial review by accepting the Government's argument that the designation is an unreviewable decision "not to exclude" lands from a critical habitat designation, when the Supreme Court has already said that the designation of critical habitat is governed by specific, reviewable standards.
  - The district court's decision ignores case law (and related ESA regulations) holding that before unoccupied areas can be designated as critical habitat (here all lands above the Rialto Drain and below Seven Oaks Dam) the FWS must find that a designation limited to the species present range (i.e., occupied lands) would be

inadequate and that the unoccupied areas are essential to the conservation of the species.

- The district court's decision approves a defective economic impact analysis.
    - It incorrectly concludes that the FWS considered the impacts of its critical habitat designation on water supply projects above Seven Oaks Dam. It says the FWS considered the "incremental effects" on such projects even though the FWS itself admits that it treated such impacts as part of the "baseline".
    - It incorrectly shifts the burden of establishing that alternative water supplies are available to replace any water supplies lost because of the designation from the FWS (which argued that such supplies are available without any analysis) to the Plaintiffs—requiring us to prove that such supplies are not available.
- The decision tees up the issue of whether NEPA applies to the designation of critical habitat when the designation affects the quality of the human environment. Currently there is a split in the circuits on this issue, with the 9th Circuit finding no such requirement and the 10th Circuit disagreeing and finding that a NEPA obligation exists.

- **The District Court's decision raises at least three issues of national significance**.
    - The interpretation of the ESA to eviscerate the language of § 2(c)(2) of the Act, applies to water resource activities nationwide.
    - The decision to ignore the language of the MSHCP and, with it, the "No Surprises" commitments of the Government in the MSHCP, applies to MSHCPs nationwide.
    - The issue of the application of NEPA to a designation of critical habitat involves a split among the circuit courts of appeal and is an issue of nationwide significance.
- **Much of the research related to an appeal has already been undertaken**.
    - The litigation before the district court involved extensive research that will not need to be duplicated on appeal.
- **This will be a high-profile case that will draw national attention. It is entirely possible that other organizations (including, for instance, the State of California, Building Industry Association, Western States Water Council, Family Farm Alliance or the Western Governors' Association) may lend legal and/or financial support**.

- **Prospects at the Ninth Circuit**

  - As we anticipated at the outset of the litigation, the Ninth Circuit is likely to reject our claims, unless we draw an unusually conservative panel.

  - Pursuing the appeal at the Ninth Circuit is likely to take about a year to 18 months.

- **Prospects at the U.S. Supreme Court**

  - The U.S. Supreme Court generally is able to choose the cases that it hears. There are two chief criteria.

    - The Court often takes cases where there is a split in the circuits (as is the case here). The Court believes that federal law should be uniform among all of the circuits and so is likely to hear a case to resolve that conflict.

    - The Court also takes cases that it believes to be of national significance. Here, there are two additional issues that we believe might be of interest to the Court. First, the ESA's requirement that the United States cooperate with states and local governments. Second, the trial court's ruling that undermines the "No Surprises" and "Safe Harbors" rules.

  - Obtaining a decision from the U.S. Supreme Court on a petition for certiorari will take about 12 months after a decision by the Ninth Circuit. If the Supreme Court grants certiorari, as we hope it will, the chances are good that any adverse decision by the Ninth Circuit (and the district court) will be reversed.

- **Costs**

  - Pursuing an appeal to the Ninth Circuit and petitioning the U.S. Supreme Court to hear the case is estimated to cost about $350,000. We have already received an indication from the Metropolitan Water District that it views this case as important to its interests and is willing to assist in defraying these costs.

  - There would be additional costs to brief the case and argue the case if the U.S. Supreme Court decides to hear the case. Those costs could be up to another $150,000 but, this is where we are most likely to have other parties willing to help defray the costs. And, if the appeal is successful—as the grant of a petition for cert. suggests that it would be--these costs (along with all of the costs and fees generated in the lower courts) would be subject to recovery under the ESA's citizen suit provision or the Equal Access to Justice Act—or both.

Date: Nov 6, 2012; Section: Front Page; Page: A1

ENDANGEREDFISH: CLEANINGUPTEQUESQUITEARROYOINRIVERSIDE

RESTORING HABITAT

Water districts are spending $500,000 to help the Santa Ana sucker, a species at the center of a long legal fight

BY JANET ZIMMERMAN

STAFF WRITER jzimmerman@pe.com

More than a decade of studies, legal fights and millions in taxpayer dollars devoted to the fate of the endangered Santa Ana sucker have largely taken place far from the waterways where the fish lives, or once lived.

Now, for a fraction of the more than $3 million spent on lawsuits and population surveys, the fish is getting some more tangible help: On-the-ground work has begun to restore a remote tributary of the Santa Ana River in hopes of creating an environment where the fish will thrive.

The lower reach of Tequesquite Arroyo in Riverside was clogged with debris that blocked the sucker from reaching gravel-laden areas needed for spawning. In the next phase, predatory fish, non-native bullfrogs and invasive plants will be eliminated.

Though the once-plentiful fish don't exist in the arroyo now, the hope is they will be drawn up the creek to the deeper pools and cooler water they need to flourish. It is, in essence, a years-long experiment.

"There's not enough of a current to direct them now. They think it's a pond," said Kerwin Russell, natural resources manager for the Riverside-Corona Resource Conservation District. "If we can increase the flows so this moves, we have a chance of getting fish up here."

The $500,000 restoration is part of a settle- ment the San Bernardino Valley Municipal Water District and Western Municipal Water District in Riverside reached with the state to compensate for damaging sucker habit with a water diversion project farther north on the river, at the Seven Oaks Dam near Highland.

That funding — $50,000 a year for a decade — is less than one-sixth of what's been spent on studies and attorneys' fees to fight lawsuits over the small, algae-eating fish. Since the 1990s, water districts, environmentalists and state and federal wildlife regulators have waged battles over how much habitat should be designated to help the species recover, and what should be done to help the fish.

Not everyone is happy with the Tequesquite project. Ileene Anderson, a biologist with the Center for Biological Diversity, an environmental group that has sued the federal government to increase protections for the sucker, said there's no evidence the fish ever lived in the arroyo.

Her group would rather see habitat enhanced above the Seven Oaks Dam, where the suckers once lived.

"It seems like they would want to choose a place where suckers have been known to inhabit, to assure a more successful reintroduction," she said. "That's a lot of money to spend on something that may not assure that suckers will live there."

Russell and water district officials are more optimistic. The fish lives in a three-mile stretch of the river south from Highway 60 in Riverside, which is shallow and warmer than the creek, so creating a more desirable environment should draw them in, they said.

Doug Headrick, general manager at San Bernardino Valley Municipal Water District, cited the successful restoration of Sunnyslope Creek, another inlet to the river.

"The sucker quickly showed up there. They know to find these protected areas," he said. "The more of these areas we can create, the less likely they will go extinct."

Protecting the sucker is important because fish need clean water to survive, and if they are suffering, it

indicates an unhealthy watershed that ultimately affects humans, Russell said.

The Tequesquite Arroyo is an isolated, man-made habitat fed by urban runoff from across Riverside, including Sycamore Canyon, UC Riverside and the Wood Streets neighborhood. Water quality testing is just beginning to determine how much pesticide, vehicle fluids and other contaminants the discharge contains, said Russell, who is leading the restoration.

Decades ago, huge chunks of concrete were placed across a section of the creek to provide flood protection for a now-closed landfill nearby. That barrier cut off the sucker fish's access to the upper reaches of the tributary, and they stayed closer to the main river, where they became food for turtles, carp and large-mouth bass, Russell said.

In September, crews spent three weeks breaking up the concrete with sledgehammers, crowbars and concrete saws because the area was too tight for mechanical equipment.

They cleared mattresses, shopping carts, human waste and other detritus of established homeless encampments that also degrade water quality, Russell said.

"There are a number of environmental factors that harm the fish: predation, water quality and habitat," Russell said.

On a recent afternoon, Russell was thigh deep in the creek, swishing a net across the clear water. From near the muddy bank he pulled up swollen bullfrog tadpoles and green sunfish — both predators of the 3-inch-long Santa Ana suckers. He threw them in the dirt, leaving them for the raccoons.

It's too early yet for suckers to appear. But Russell will be back out in February, when spawning begins.

This is the first of three efforts to add a mile of stream to the sucker's habitat. The other two are conservation district cleanups and restoration, at Anza Creek and Hole Creek, and are not being funded by the water agencies.

All three projects also will benefit the speckled dace and the arroyo chub, other imperiled fish species, he said.

Follow Janet Zimmerman on Twitter: @JanetLZimmerman



KURT MILLER/STAFF PHOTOGRAPHER

Kerwin Russell, natural resources manager for the Riverside-Corona Resource Conservation District, seeks non-native species in the Tequesquite tributary of the Santa Ana River in Riverside on Wednesday. Work has begun to restore the tributary and help the sucker fish thrive.



Russell captures a bullfrog tadpole. Bullfrogs are predators of the Santa Ana suckers.



KURT MILLER/STAFF PHOTOGRAPHER

Kerwin Russell inspects a former homeless encampment in the lower reach of the Tequesquite Arroyo. Though the sucker fish don't exist in the arroyo now, the hope is they will be drawn up the creek to the deeper pools and cooler water they need.

STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

PERMIT FOR DIVERSION AND USE OF WATER

PERMIT 21264

Application **31165** of **San Bernardino Valley Municipal Water District and Western Municipal Water District of Riverside County**
P.O. Box 5906
San Bernardino, CA 92412-5906

filed on **March 21, 2001**, has been approved by the State Water Resources Control Board (State Water Board or Board) SUBJECT TO PRIOR RIGHTS and to the limitations and conditions of this permit.

Permittee is hereby authorized to divert and use water as follows:

1. Source of water

Source:	Tributary to:
Santa Ana River (1, 3, 6, 9, 10)	**Pacific Ocean**
Bear Creek (2)	**Santa Ana River thence Pacific Ocean**
Breakneck Creek (4)	**Santa Ana River thence Pacific Ocean**
Keller Creek (5)	**Santa Ana River thence Pacific Ocean**
Alder Creek (7)	**Santa Ana River thence Pacific Ocean**

within the County of **San Bernardino.**

SBVMWD LEGAL
DOCUMENT 2276

2. Location of points of diversion (POD) and points of rediversion (POR)

By California Coordinate System of 1983, Zone **5**	40-acre subdivision of public land survey or projection thereof	Section	Township	Range	Base and Meridian
POD & POR #1: Seven Oaks Dam North 1,866,500 ft. and East 6,835,000 ft.	**NE¼ of NW¼**	**4**	**01S**	**02W**	**SB**
POD #2: North 1,882,500 ft. and East 6,859,600 ft.	**SE¼ of NE¼**	**19**	**01N**	**01W**	**SB**
POD #3: North 1,882,400 ft. and East 6,859,700 ft.	**SE¼ of NE¼**	**19**	**01N**	**01W**	**SB**
POD #4: North 1,880,900 ft. and East 6,858,100 ft.	**NW¼ of SE¼**	**19**	**01N**	**01W**	**SB**
POD #5: North 1,877,700 ft. and East 6,846,200 ft.	**NW¼ of NE¼**	**26**	**01N**	**02W**	**SB**
POD #6: North 1,876,700 ft. and East 6,846,700 ft.	**SW¼ of NE¼**	**26**	**01N**	**02W**	**SB**
POD #7: North 1,877,100 ft. and East 6,843,600 ft.	**NW¼ of NW¼**	**26**	**01N**	**02W**	**SB**
POR #8: North 1,865,800 ft. and East 6,837,100 ft.	**SE¼ of NE¼**	**4**	**01S**	**02W**	**SB**
POD & POR #9: North 1,864,900 ft. and East 6,835,000 ft.	**SE¼ of NW¼**	**4**	**01S**	**02W**	**SB**
POD & POR #10: North 1,862,800 ft. and East 6,834,000 ft.	**SW¼ of SW¼**	**4**	**01S**	**02W**	**SB**

3. Purpose of use	4. Place of use	Section	Township	Range	Base and Meridian	Acres
Municipal, Industrial, Irrigation, Heat Control, Frost Protection and Recreational uses	**San Bernardino Valley Municipal Water District and Western Municipal Water District of Riverside County's Service Areas***					

*The place of use is shown on maps dated June 7, 2010 and filed with the State Water Board.

5a. The water appropriated shall be limited to the quantity which can be beneficially used and shall not exceed **400** cubic feet per second (cfs) by direct diversion and **100,000** acre-feet per annum (afa) by underground and/or surface storage to be diverted from **January 1** to **December 31** of each year. The amount of surface storage at Seven Oaks Dam shall not exceed 50,000 afa. The maximum rate of diversion to underground storage shall not exceed 400 cfs. The total amount of water to be taken from the sources shall not exceed 100,000 acre-feet (af) per water-year of October 1 to September 30. The total rate for water to be taken from the sources for either direct use and/or underground storage shall not exceed 800 cfs.

(0000005E)

5b. The total quantity of water to be taken from the sources under both Application 31165 and Application 31370 shall not exceed 198,317 af per water-year of October 1 to September 30. The total amount of water diverted to storage at Seven Oaks Dam under both Applications 31165 and 31370 shall not exceed 50,000 af per water-year of October 1 to September 30. The total combined rate for water to be taken from the sources under Applications 31165 and 31370 for either direct use, underground storage, and/or offstream surface storage shall not exceed an instantaneous rate of 1,250 cfs.

(0000005L)

6. The amount authorized for appropriation may be reduced in the license if investigation warrants.

(0000006)

7. Construction work and the application of water to beneficial use shall be prosecuted with reasonable diligence. Actual construction shall begin no later than June 30, 2010 and be completed by October 1, 2020. Water shall be put to full beneficial use by December 31, 2059.

(0000009)

8. Progress reports shall be submitted promptly by Permittee when requested by the State Water Board until a license is issued.

(0000010)

9. Permittee shall allow representatives of the State Water Board and other parties, as may be authorized from time to time by said State Water Board, reasonable access to project works to determine compliance with the terms of this permit.

(0000011)

10. Pursuant to California Water Code sections 100 and 275, and the common law public trust doctrine, all rights and privileges under this permit and under any license issued pursuant thereto, including method of diversion, method of use, and quantity of water diverted, are subject to the continuing authority of State Water Board in accordance with law and in the interest of the public welfare to protect public trust uses and to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of said water.

The continuing authority of the State Water Board may be exercised by imposing specific requirements over and above those contained in this permit with a view to eliminating waste of water and to meeting the reasonable water requirements of Permittee without unreasonable draft on the source. Permittee may be required to implement a water conservation plan, features of which may include but not necessarily be limited to: (1) reusing or reclaiming the water allocated; (2) using water reclaimed by another entity instead of all or part of the water allocated; (3) restricting diversions so as to eliminate agricultural tailwater or to reduce return flow; (4) suppressing evaporation losses from water surfaces; (5) controlling phreatophytic growth; and (6) installing, maintaining, and operating efficient water measuring devices to assure compliance with the quantity limitations of this permit and to determine accurately water use as against

reasonable water requirements for the authorized project. No action will be taken pursuant to this paragraph unless the State Water Board determines, after notice to affected parties and opportunity for hearing, that such specific requirements are physically and financially feasible and are appropriate to the particular situation.

The continuing authority of the State Water Board also may be exercised by imposing further limitations on the diversion and use of water by the Permittee in order to protect public trust uses. No action will be taken pursuant to this paragraph unless the State Water Board determines, after notice to affected parties and opportunity for hearing, that such action is consistent with California Constitution Article X, Section 2; is consistent with the public interest; and is necessary to preserve or restore the uses protected by the public trust.

(0000012)

11. The quantity of water diverted under this permit and under any license issued pursuant thereto is subject to modification by the State Water Board if, after notice to the Permittee and an opportunity for hearing, the State Water Board finds that such modification is necessary to meet water quality objectives in water quality control plans which have been or hereafter may be established or modified pursuant to Division 7 of the Water Code. No action will be taken pursuant to this paragraph unless the State Water Board finds that: (1) adequate waste discharge requirements have been prescribed and are in effect with respect to all waste discharges which have any substantial effect upon water quality in the area involved, and (2) the water quality objectives cannot be achieved solely through the control of waste discharges.

(0000013)

12. This permit does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish & G. Code, §§ 2050-2097) or the federal Endangered Species Act (16 U.S.C.A. §§ 1531-1544). If a "take" will result from any act authorized under this water right, the Permittee shall obtain authorization for an incidental take prior to construction or operation of the project. Permittee shall be responsible for meeting all requirements of the applicable Endangered Species Act for the project authorized under this permit.

(0000014)

13. Permittee shall maintain records of the amount of water diverted and used to enable State Water Board to determine the amount of water that has been applied to beneficial use pursuant to Water Code section 1605.

(0000015)

14. This permit shall not be construed as conferring upon the Permittee right of access to the point of diversion.

(0000022)

15. Permittee shall consult with the Division of Water Rights (Division) and, within one year from the date of this permit, shall submit to the State Water Board its Urban Water Management Plan as prepared and adopted in conformance with section 10610, et seq. of the California Water Code, supplemented by any additional information that may be required by the Board.

All cost effective measures identified in the Urban Water Management Plan and any supplements thereto shall be implemented in accordance with the schedule for implementation found therein.

(0000029A)

16. If it is determined after permit issuance that the as-built conditions of the project are not correctly represented by the map(s) prepared to accompany the application, Permittee shall, at his expense have the subject map(s) updated or replaced with equivalent as-built map(s).

Said revision(s) or new map(s) shall be prepared by a civil engineer or land surveyor registered or licensed in the State of California and shall meet the requirements prescribed in section 715 and sections 717 through 723 of the California Code of Regulations, Title 23. Said revision(s) or map(s) shall be furnished upon request of the Chief of the Division of Water Rights[1].

(0000030)

17. No work shall commence and no water shall be diverted, stored or used under this permit until a copy of a stream or lake alteration agreement between the State Department of Fish and Game and the Permittee (DFG) is filed with the Division. Compliance with the terms and conditions of the agreement is the responsibility of the Permittee. If a stream or lake alteration agreement is not necessary for this permitted project, the Permittee shall provide the Division a copy of a waiver signed by DFG.

(0000063)

18. In order to prevent degradation of the quality of water during and after construction of the project, prior to commencement of construction undertaken after issuance of the permit, Permittee shall file a report pursuant to Water Code Section 13260 and shall comply with all waste discharge requirements imposed by the California Regional Water Quality Control Board, Santa Ana Region, or by the State Water Board.

(0000100)

19. Prior to diversion of water under this permit, Permittee shall: (1) install devices to measure the instantaneous rate of diversion and the quantities of water placed into underground storage and (2) install devices to measure or provide documentation of the method to be used to determine the quantity of water recovered from underground storage and placed to beneficial use. All measuring devices and the method of determining the quantity of water placed into and recovered from underground storage shall be approved by the State Water Board prior to diversion of water under this permit. All measuring devices shall be properly maintained. The diversion data shall be posted on Permittee's websites on a weekly basis.

(0080117)

20. The Permittee shall obtain all necessary state and local agency permits required by other agencies prior to construction and diversion of water. Copies of such permits and approvals shall be forwarded to the Deputy Director for Water Rights (Deputy Director).

(0000203)

21. No debris, soil, silt, cement that has not set, oil, or other such foreign substance will be allowed to enter into or be placed where it may be washed by rainfall runoff into the waters of the State. When operations are completed, any excess materials or debris shall be removed from the work area.

(0000208)

22. The State Water Board adopts and incorporates by reference into this permit the mitigation measures and monitoring and reporting requirements applicable to the impacts of the Project on biological and cultural resources, geology, hazardous material and groundwater contamination, groundwater and surface water hydrology, water quality and public services, utilities and transportation identified in the Final EIR, specifically mitigation measures MM BIO-1, MM BIO-2 and MM BIO-6 through MM BIO-10, MM CR 1 through MM CR 4, MM HAZ 1 through MM HAZ 5, MM GEO-1 through MM GEO-8, MM GW-1, MM SW-2 and MM PS-12. (See attached Table 1.) Permittee must implement the measures to mitigate significant impacts and conduct the required

[1] The Chief of the Division of Water Rights is hereafter referred by the State Water Board as the Deputy Director for Water Rights.

reporting and monitoring of those measures as provided in the Mitigation Monitoring and Reporting Plan adopted on March 21, 2007 by the respective Boards of Directors of San Bernardino Valley Municipal Water District and Western Municipal Water District of Riverside County. In addition, Permittee shall submit an annual report to the Deputy Director that includes the results of the Mitigation Monitoring and Reporting Program. The State Water Board reserves jurisdiction to require any reasonable amendments to these measures and requirements to ensure that they will accomplish the stated goal.

(0400500)

23. The State Water Board adopts and incorporates by reference into this permit the mitigation measures and monitoring and reporting requirements applicable to the cumulative impacts of the Project on biological and cultural resources, geology, hazardous material and groundwater contamination, groundwater and surface water hydrology and water quality, and public services, utilities and transportation identified in the EIR, specifically mitigation measures MM Cumulative BIO-1, MM Cumulative CR-1, MM Cumulative CR-2, MM Cumulative HAZ-1, MM Cumulative SW-1 and MM Cumulative GW-1. (See attached Table 2.) Permittee must implement the measures to mitigate cumulative impacts and conduct the required reporting and monitoring of those measures as provided in the Mitigation Monitoring and Reporting Plan adopted by the respective Boards of Directors of San Bernardino Valley Municipal Water District and Western Municipal Water District of Riverside County on March 21, 2007. In addition, Permttee shall submit to the Deputy Director an annual report that includes the results of the Mitigation Monitoring and Reporting Program. The State Water Board reserves jurisdiction to require any reasonable amendments to these measures and requirements to ensure that they will accomplish the stated goal.

(0400500)

24. This permit shall not be construed as conferring upon Permittee right of access to facilities of the U.S. Army Corps of Engineers and the Santa Ana River Mainstem Local Sponsors.

(0000022)

25. This permit is specifically subject to the prior rights of Bear Valley Mutual Water Company, City of Redlands, East Valley Water District, Lugonia Water Company, North Fork Water Company and Redlands Water Company to divert the first 88 cfs of the natural flow of the Santa Ana River pursuant to pre-1914 appropriative rights, to the extent that such rights may exist.

(0400500)

26. This permit is specifically subject to the prior rights of San Bernardino Valley Water Conservation District under Licenses 2831 and 2832 issued pursuant to Applications 2217 and 4807, and any valid pre-1914 appropriative right confirmed by the Court.

(0400500)

27. Nothing in this permit shall be construed as authorizing any diversions contrary to the provisions of the December 19, 2002 Biological Opinion issued by United States Fish and Wildlife Service for operation of Seven Oaks Dam, as may be revised in the future, including flow releases for downstream over-bank inundation to preserve State and federally listed threatened and endangered species and their habitat.

(0600500)

28. Permittee shall only divert water at points of diversion 5 though 10 in compliance with the terms and conditions of Federal Energy Regulatory Commission (FERC) license Project No. 1933 and 401 water quality certification as well as any future FERC licenses and 401 water quality certifications.

(0560900)

29. Permittee shall not, without the prior written consent of Southern California Edison (SCE), construct, operate or maintain diversion works at points of diversion located upstream of the flood inundation pool of Seven Oaks Dam in a manner that interferes with the operation and maintenance of the hydroelectric works licensed to SCE by the Federal Energy Regulatory Commission (FERC) license for Project No. 1933. Permittee's diversion of water at such points of diversion shall not interfere with SCE's diversion of water for hydroelectric purposes, again as described in the FERC license for Project No. 1933. Nothing in this permit shall be construed to limit Permittee's diversion of water from such points of diversion at times when the quantity of water available for diversion at such points of diversion exceeds the demand of SCE's facilities to divert water from the Santa Ana River system.

(0430999)

30. This permit shall not be construed as conferring upon Permittee the right of access to Seven Oaks Dam, the points of diversion, the lands necessary for related facilities, or the lands necessary for inundation for water storage. Access to, construction upon, or inundation of National Forest Service lands shall not commence prior to authorization by the Forest Service, in accordance with applicable laws and regulations. Such authorization will require compliance with all applicable federal laws and regulations. Permittee specifically recognizes that completion of the applicable legal process does not guarantee such authorization will be granted, the issuance of this water right permit notwithstanding.

(0000022)

31. This permit shall not be construed as conferring upon Permittee the right of access to Seven Oaks Dam, the points of diversion, and lands necessary for related facilities; or the lands necessary for inundation for water storage. Permittee shall not commence construction and operation of water diversion facilities at Seven Oaks Dam without a written access agreement from the Santa Ana River Mainstem Project Local Sponsors.

(0000022)

32. Flow in the Santa Ana River is highly variable from year to year. Because the face value of this permit is based on a rare storm event, this permit shall not be construed as giving any assurance that such an event will occur. The actual amount of water available for appropriation may be much less.

(0000999)

33. Permittee is required to follow guidance from existing state and federally mandated projects regarding groundwater contaminant plumes within and outside the San Bernardino Basin Area. This includes coordination with appropriate oversight agencies and compliance with policies regarding the remediation of the groundwater contaminant plumes.

(0400800)

34. Permittee shall not use the Cactus Spreading and Flood Control Basins under this permit.

(0400800)

35a. In order to prevent degradation of the quality of water released to the Santa Ana River from storage at Seven Oaks Dam, the State Water Board may modify this permit to set conditions that apply water quality objectives to any release from storage.

35b. No water shall be released from storage of Seven Oaks Dam for purposes of rediversion by Permittee until Permittee has consulted with the Chief Deputy Director for Water Quality or his or her delegee and the Chief Deputy Director has determined that the releases will be consistent with applicable water quality objectives. The releases shall be consistent with any conditions the Chief Deputy Director determines are necessary to ensure compliance with applicable water quality objectives.

(0400800)

36. In order to prevent degradation of water quality during and after construction of the project, prior to commencement of any construction undertaken after issuance of the permit, Permittee shall file a report pursuant to Water Code Section 13260 and shall comply will all waste discharge requirements imposed by the California Regional Water Quality Control Board, Santa Ana Region, or by the State Water Board.

(0290800)

This permit is issued and Permittee takes it subject to the following provisions of the Water Code:

Section 1390. A permit shall be effective for such time as the water actually appropriated under it is used for a useful and beneficial purpose in conformity with this division (of the Water Code), but no longer.

Section 1391. Every permit shall include the enumeration of conditions therein which in substance shall include all of the provisions of this article and the statement that any appropriator of water to whom a permit is issued takes it subject to the conditions therein expressed.

Section 1392. Every Permittee, if he accepts a permit, does so under the conditions precedent that no value whatsoever in excess of the actual amount paid to the State therefor shall at any time be assigned to or claimed for any permit granted or issued under the provisions of this division (of the Water Code), or for any rights granted or acquired under the provisions of this division (of the Water Code), in respect to the regulation by any competent public authority of the services or the price of the services to be rendered by any Permittee or by the holder of any rights granted or acquired under the provisions of this division (of the Water Code) or in respect to any valuation for purposes of sale to or purchase, whether through condemnation proceedings or otherwise, by the State or any city, city and county, municipal water district, irrigation district, lighting district, or any political subdivision of the State, of the rights and property of any Permittee, or the possessor of any rights granted, issued, or acquired under the provisions of this division (of the Water Code).

STATE WATER RESOURCES CONTROL BOARD

James W. Kassel
for *Victoria A. Whitney*
Deputy Director for Water Rights

Dated: JUN 29 2010

Attachments

Table 1: Mitigation Measures

MM BIO-1	Muni/Western will minimize disturbance to native habitats and listed and non-listed sensitive species by the implementation of the following measures at construction sites prior to and during construction. Where ground disturbance is required, the Muni/Western program will include the following: (1) Clearly marking and delineating the limits of the staging areas as well as the construction corridors/zones in the field and graphically on all final construction drawings and blueprints. Personnel and equipment will be prohibited in native habitats outside the construction limits. (2) Biologically sensitive areas, including individuals or colonies of listed and non-listed sensitive plant species and wildlife species, will be identified and delineated in the field prior to ground disturbance (see MM BIO-3) and will be clearly marked graphically on all final construction plans or blueprints so they will be avoided to maximum extent feasible. (3) Use methods to minimize the construction corridor width to the maximum extent feasible in sensitive habitats, such as transporting and stockpiling excavated materials in disturbed area of the right-of-way (ROW), or into other parts of the ROW by truck or conveyor belt. **Employee Training** Implementation of an employee training program. Muni/Western's program will include an initial meeting with all personnel presented by a qualified biologist familiar will all affected species, habitats, and permit conditions. The employee training program will include a discussion of each species, all applicable laws, the permit conditions, and the potential penalties for violating permit conditions. The employee training program will be conducted before construction activities begin. Regular updates will occur during weekly tailgate meetings with construction personnel, and newly hired personnel will be informed of the permit conditions as well as the habitat and species issues before working on the Project site. **On-Site Monitoring** Biological monitoring of habitat clearing activities and removal of sedentary animals, both common and sensitive, within the ROW prior to clearing. This will require a qualified biologist to be at the location of habitat removal before clearing to attempt to remove animals where visible and, during removal activities, to ensure that no inadvertent impacts to adjacent habitats occur. Weekly inspections of the ROW perimeter near work areas will also reduce the potential for inadvertent impacts to adjacent habitat. **Best Management Practices (BMPs)** Dust control. All areas of mechanical ground disturbance, including dirt access roadways, will be consistently moistened to reduce the creation of dust clouds. The frequency of watering will be consistent with the desired goal and in accordance with regional standards and BMPs. Erosion control. Devices such as straw bales and "v" ditches will be installed in areas where construction activities may directly or indirectly cause erosion or sediment deposition on adjacent habitats. Routine removal of trash from construction areas. All refuse, including non-construction materials such as paper and miscellaneous food packaging materials, will be removed from the ROW to prevent littering of the adjacent habitat areas outside of the ROW. At a minimum, site clean-ups should occur weekly. **Listed Species Protection Measures** In areas where the San Bernardino Kangaroo Rat (SBKR) is present, either within or adjacent to the ROW, Muni/Western will install exclusionary fencing where appropriate to reduce the potential for SBKR entering the ROW.

MM BIO-1 (continued)	Specification for the fencing will be particular to the goal of the SBKR exclusion and will be approved by the United States Fish and Wildlife Service (USFWS). Muni/Western may not install fencing in certain areas such as boulder-strewn washes where fence construction may cause substantial habitat disturbance. Following the installation of fencing, the animals within the ROW will be trapped and released within adjacent suitable habitat outside the ROW. These methods will be approved by the USFWS. In areas where the SBKR is present, either within or adjacent to the ROW, Muni/Western will limit construction activities to daylight hours (approximately 7:00 A.M. to 6:00 P.M.). During night hours, no activities that would unnaturally increase the light or noise within adjacent occupied habitat will occur. In areas where the SBKR, coastal California gnatcatcher CAGN, least Bell's vireo, or southwestern willow flycatcher are present either within or adjacent to the ROW, Muni/Western will avoid or reduce construction activities in the vicinity of occupied habitat during the breeding season. Avoidance will take place from March 1 through June 30. In certain areas, avoidance of southwestern willow flycatcher will continue through July 31. Where complete avoidance is not possible, construction activities will be conducted in a manner that attempts to minimize disturbance during early morning hours and avoids the most sensitive breeding months of April and May. In areas where preconstruction sensitive species surveys and other seasonally limited activities such as seed collection and plant propagation are needed, Muni/Western will prepare a calendar of when such activities need to be accomplished and incorporate this into design and construction schedules to ensure that the surveys can be conducted in the appropriate season without causing delays. (Draft EIR page 3.3-37 through 3.3-39; Final EIR Section 2.4.)
MM BIO-2	Muni/Western will develop a Habitat Revegetation, Restoration, and Monitoring Program (Program), obtaining input from CDFG, and USFWS, for implementation in all habitat areas directly affected by construction activities. The Program will include the following measures: **Invasive Species Control** Where appropriate and feasible, the area to be treated will be treated to kill invasive exotics species and limit their seed production before initiating any earthmoving activity with the objectives of: (1) preventing invasive species from spreading from the disturbance area, and (2) removing weed sources from the salvaged topsoil. Herbicides will be used only by a licensed herbicide applicator and may require notification to property owners or resource agencies. The treatment will be completed before earthmoving in order for this mitigation to have its intended effect (e.g., the treatment would need to occur before target species set seed). **Topsoil Salvage and Replacement** In areas where vegetation and soil are to be removed, the topsoil will be salvaged and replaced, where practicable. This may be accomplished using two lifts, the first to salvage the seed bank, and the second to salvage soil along with soil biota in the root zone. Soil will be stockpiled in two areas near the Project site, with the seed bank labeled to identify it. Topsoil will be replaced in the proper layers after final reconfiguration of disturbed areas. Where presence of extensive deposits of boulders and cobbles limit the opportunity to salvage topsoil and make the above-mentioned procedure infeasible, Muni/Western will salvage available surface material and stockpile it for replacement on the surface of the restored area. Stockpiles will be covered if the soil is to be left for an extended period to prevent losses due to erosion and invasion of weeds. **Habitat Rehabilitation and Revegetation** Muni/Western will develop and implement plans and specifications for replanting areas disturbed by the Project. Replanting will be with native species propagated from locally collected seed or cuttings, and, if applicable, will include seed or sensitive species that would be impacted during construction activities.

MM BIO-2 (continued)	Monitoring procedures and performance criteria will be developed by Muni/Western to address revegetation and erosion control. The performance criteria will consider the level of disturbance and the condition of adjacent habitats. Monitoring will continue for three-to-five years, or until performance criteria have been met. Appropriate remedial measures, such as replanting, erosion control or weed control, will be identified and implemented if it is determined that performance criteria are not being met. (Draft EIR page 3.3-39 through 3.3-40; Final EIR Section 2.4.)
MM BIO-6	Prior to ground disturbance or other activities, qualified botanists will survey all proposed construction, staging, stockpile, and access areas for presence of non-listed sensitive plant species. Preconstruction surveys will occur during appropriate season and in accordance with established protocols (if required). These surveys will be conducted in all construction areas that occur in native habitats. In the event that non-listed sensitive plant species are observed in the impact area during pre-Project surveys, Muni/Western will implement the following measures: (a) Colonies will be clearly marked, mapped, and recorded along with the numbers of individuals in each colony and their respective condition. To the extent feasible, construction areas and access roads will be configured to avoid or minimize loss of individual plants and damage to occupied habitats. (b) Where impacts to non-listed sensitive plant species are unavoidable, Muni/Western will develop and implement a salvage, propagation, replanting, and monitoring program that will use both seed and salvaged plants constituting an ample and representative sample of each colony. (Draft EIR page 3.3-42.)
MM BIO-7	To reduce impacts on biological resources, Muni/Western will realign pipelines to avoid sensitive resources and habitat to the maximum extent feasible. Specifically, Muni/Western will realign Phase II of the Plunge Pool Pipeline northward and place it adjacent to Greenspot Road. (See Draft EIR Figure 3.3-7). This will put the project-related disturbance at the edge of the habitat and avoid bisecting the intermediate to mature RAFSS habitat along the western portion of the alignment. If it is infeasible to implement MM BIO-7, then the residual impact could be compensated by implementation of MM BIO-8, which is intended to compensate for permanent or long-term losses of sensitive RAFSS habitat as a result of installation of permanent facilities or long-term construction impacts that cannot be fully mitigated by MM BIO-1, MM BIO-2, and MM BIO-7. (Draft EIR page 3.3-44.)
MM BIO-8	To compensate for permanent long-term and temporal losses of RAFSS habitat value, Muni/Western will acquire, for every 1 acre impacted, a minimum of 1 acre of good quality habitat of similar or greater habitat value than the RAFSS area impacted by the Plunge Pool pipeline and dedicate it in perpetuity as a habitat conservation easement area, or other appropriate designation, and provide funding for its future management as native habitat in perpetuity. The acquired RAFSS habitat area would ideally be contiguous with existing habitat already set aside in the WSPA or other dedicated RAFSS habitat. If good quality habitat in such a locality is not available for purchase, availability of other RAFSS habitat will be investigated, with the objective of obtaining good quality habitat near the Project area. Implementation of this mitigation measure will be subject to the requirement that such long-term mitigation and reporting plans for such acquisitions are to be approved by the Deputy Director for Water Rights of the State Water Board prior to construction of the Plunge Pool Pipeline. (Draft EIR page 3.3-44; Final EIR Section 2.4.)
MM BIO-9	Muni/Western will monitor and remove invasive non-native species establishing in the channel and adjacent RAFSS habitats between Seven Oaks Dam and Mill Creek. Target species include species of tamarisk or salt cedar (*Tamarix* spp.), fountain grass (*Pennisetum setaceum*), and giant reed (*Arundo donax*). These species establish in

MM BIO-9 (continued)	habitats suitable to SBKR and Santa Ana River woolly-star and have the potential to spread further into adjacent suitable habitat areas. Initial control will be established using a combination of physical removal and herbicidal treatment using appropriate environmental safeguards. Herbicides will be used pursuant to manufacturer's instructions, and standard measures will be taken to avoid impacts to water quality. Two to several follow-up treatments would be anticipated during the first year with follow-up monitoring and treatments at least once annually in the ensuing years. (Draft EIR page 3.3-61; Final EIR Section 2.4.)
MM BIO-10	Muni/Western will develop a program, in coordination with MSHCP agency participants, to selectively restore SBKR and Santa Ana River woolly-star habitat by using habitat manipulation, either by mechanical means or high pressure water, to remove vegetation and leave freshly deposited sand and silt, simulating the habitat-renewing aftermath of natural flooding. This will be done using an adaptive management approach with input from Multispecies Habitat Conservation Plan (MSHCP) stakeholders. If the high pressure water method is used, water will be piped. A high-pressure nozzle will be directed at localized areas of habitat determined to be suitable for SBKR and Santa Ana River woolly-star after renewal. The nozzle will be hand operated or operated from a light vehicle. Treatments will be accomplished in a randomized block design to allow experimental testing of variables such as duration and intensity of spray, addition of clean stand, season of disturbance, application of seed vs. allowing natural dispersal, etc. A rigorous monitoring program funded by Muni/Western will be established to enable the differences among experimental treatments to be determined. The primary indicator of success will be related to development of habitat characteristics identified with pioneer to intermediate RAFSS habitat within the SBKR and Santa Ana River woolly-star populations that have been documented. These characteristics are documented in the literature and will be specified as part of the Muni/Western Program. The program will be adjusted appropriately as results from earlier efforts become available. The design and implementation of the ongoing effort will be funded by Muni/Western and conducted by representatives of Muni/Western with input from the USFWS and CDFG. A complete description of this method is also included in Appendix E7 of the Draft EIR, Section 2.0. Muni/Western commit to achieving a mitigation performance of restoring 10 acres of intermediate- to late-stage RAFSS habitat to the early or intermediate stage RAFSS habitat during the first 20 years of Project implementation. (Draft EIR pages 3.3-61 and 3.3-62; Final EIR Section 2.4.)
MM CR-1	In the event of an unanticipated archaeological or paleontological resource discovery during construction, all ground disturbances within 150 feet of the discovery will be halted or redirected to other areas until the discovery has been documented by a qualified archaeologist or paleontologist, and its potential significance evaluated consistent with CEQA. Resources considered significant will be avoided by Project design. If avoidance is not feasible, the resource will be subject to a data recovery mitigation program, as appropriate. If human remains are discovered the County Coroner will be contacted, and all procedures required by the California Health and Safety Code Section 7050.5, State CEQA Guidelines Section 15064.5(e) and PRC Section 5097.98 will be followed. (Draft EIR page 3.9-19.)
MM-CR-2	Proposed construction of the Plunge Pool Pipeline will avoid physical impacts to the Francis Cuttle Weir Dam to the extent feasible. In the event that any portion of the Francis Cuttle Weir Dam would be modified or demolished, a qualified architectural historian will prepare a historic recordation of the Francis Cuttle Weir Dam, in the context of the Conservation District's groundwater spreading system. The recordation will conform to the standards of either the Historic American Buildings Survey (HABS) or the Historic American Engineering Record (HAER). (Draft EIR page 3.9-20.)

MM CR-3	Prior to construction activities along the segment of the Plunge Pool Pipeline, Phase I, align north of Greenspot Road, the location of the North Fork Canal will be precisely mapped on engineering design plans to identify where the canal falls within the construction corridor. Temporary fencing will be placed 5 feet south of the canal along the portion of the canal that falls within the construction corridor to provide a small buffer area, and no heavy construction equipment or vehicles will be allowed north of the fencing. (Draft EIR page 3.9-21.)
MM CR-4	If it is necessary to install the Morton Canyon Connector II Pipeline through the "Hole in the Wall" within the retaining wall of Greenspot Bridge, construction activities will be confined to previously disturbed sections only and the wall will be restored to pre-Project conditions. Prior to construction, a qualified architectural historian will review the final construction designs of the Morton Canyon Connector II Pipeline to verify avoidance of significant impacts to any Greenspot Bridge feature. (Draft EIR page 3.9-24.)
MM HAZ-1	Muni/Western will direct the contractor to wash out concrete trucks in a designated area where the material cannot run off into a stream or percolate into the groundwater. This area will be specified on all applicable construction plans and be in place before any concrete is poured. Muni/Western will direct the contractor to construction vehicles in a manner that contains fluids, such as lubricants, within an impervious area to avoid spill-related water quality impacts. (Draft EIR page 3.12-12.)
MM HAZ-2	Muni/Western will direct the contractor to inspect and, as necessary, service all equipment before it enters the construction site and regularly thereafter, and before working immediately adjacent to the Santa Ana River or any other drainage or creek to avoid equipment leak-related water quality impacts. Muni/Western will direct the contractor to repair any leaks or hoses/fittings in poor condition before the equipment begins work. (Draft EIR page 3.12-12.)
MM HAZ-3	Muni/Western will direct the contractor to prepare a spill prevention and contamination plan prior to equipment use on the site. Muni/Western will direct the contractor to follow the spill prevention plan during Project construction to prevent spill-related water quality impacts. This plan will include, but not necessarily be limited to: a. Specific bermed equipment maintenance and refueling areas. b. Bermed and lined hazardous material storage areas on site that are covered during the rainy season. c. Hazardous material spill cleanup equipment on site (e.g.,absorbent pads, shovels, and bags to contain contaminated soil). d. Workers trained in the location and use of cleanup equipment. (Draft EIR page 3.12-12.)
MM HAZ-4	Using available data, in conjunction with the integrated surface and groundwater models, Muni/Western will identify groundwater trends, including plume movement and isolate changes attributable to implementation of the Project. To the extent feasible given existing infrastructure, and consistent with meeting other basin management objectives, Muni/Western will direct Project water spreading to limit adverse plume movements. (Draft EIR page 3.12-14.)
MM-HAZ-5	Muni/Western will make an alternative water supply available to parties affected by contaminated wells, or provide treatment for affected wells, at Muni/Western's discretion. The alternative supply or treatment for affected wells will be made available for all times when pertinent water quality standards are exceeded as a result of the Project. (Final EIR section 2.3.2.)

MM GEO-1	Before beginning construction, a sedimentation and erosion control plan will be prepared by Muni/Western and submitted to the Santa Ana Regional Water Quality Control Board (SARWQCB) for approval. In addition, a Storm Water Pollution Prevention Plan (SWPPP) will be prepared by Muni/Western and submitted to the SARWQCB for approval prior to construction. Where possible, erosion control measures will be implemented by Muni/Western before beginning work in the rainy season. To minimize short-term impacts associated with erosion and off-site siltation of the SAR, standard erosion and sediment control features will be used during and immediately after grading and excavations.
MM GEO-2	Muni/Western will direct the contractor to install, prior to de-watering activities, energy dissipation devices at discharge points to prevent erosion. Sedimentation basins (such as straw bales lined with filter fabric) will be used at dewatering discharge points to prevent excess downstream sedimentation. These basins will be constructed during dewatering and regularly maintained during construction, including after storm events, to keep them in good working order.
MM GEO-3	Muni/Western will implement recommendations established in a site-specific geotechnical report, prepared by a qualified engineer or engineering geologist. The report recommendations will be based on comprehensive evaluation of slope stability, seismic, and soil conditions that may affect construction of the pipelines and related facilities. Recommendations will be consistent with provisions of California Code of Regulations, Title 8, Construction and Safety Orders. Project grading and excavations will be observed by a geotechnical engineer, engineering geologist, or other qualified representative, to verify compliance with recommendations of the geotechnical report. The geotechnical investigation will be completed in accordance with: (1) CDMG Special Publication 117, *Guidelines for Evaluating and Mitigating Seismic Hazards in California* (CDMG 1997). (2) Southern California Earthquake Center, Recommended Procedures for Implementation of DMG Special Publication 117 Guidelines for Analyzing and Mitigating Liquifaction in California (SCEC1999).
MM GEO-4	Muni/Western will implement seismic-related recommendations contained in a site-specific geotechnical report, as discussed in MM GEO-3, to minimize seismically induced damage to the pipeline.
MM GEO-5	A water flow shut-off mechanism will be installed by Muni/Western at the Plunge Pool Pipeline Intake Structure to terminate flow immediately following a large earthquake in the vicinity of the site.
MM GEO-6	Muni/Western will complete emergency repairs to the pipeline and/or related facilities, in the event of seismically induced damage. MM GEO-1 and MMGEO-2 will be applied to reduce erosion related impacts associated with soil disturbance during emergency repairs.
MM GEO-7	Muni/Western will implement a groundwater level monitoring program using data from Index Wells (see Figure 3.4-5). This information will be used in conjunction with forecasts of groundwater levels derived from Muni/Western integrated surface and groundwater models to identify trends in groundwater levels and identify changes attributable to the Project. To the extent feasible given existing infrastructure, and consistent with meeting other basin management objectives, Muni/Western will direct Project water spreading to limit high groundwater conditions in the vicinity of Devil Canyon, Lytle Creek, Mill Creek, and areas in the forebay and intermediate area of the SBBA.

MM GEO-8	Muni/Western will implement a groundwater level monitoring program using data from Index Wells. This information will be used in conjunction with forecasts of groundwater levels derived from Muni/Western integrated surface and groundwater models to identify trends in groundwater levels and isolate changes attributable to the Project. To the extent feasible given existing infrastructure, and consistent with meeting other basin management objectives, Muni/Western will direct Project water spreading to limit potential for subsidence in the Pressure Zone area of the SBBA.
MM GW-1	Using available reliable data, Muni/Western will, on an annual basis, evaluate impacts of the Project on TDS and nitrate concentrations in the SBBA. To the extent feasible given existing infrastructure, and consistent with meeting other basin management objectives, Muni/Western will direct Project water spreading to reduce significant TDS and nitrate impacts.
MM SW-2	An energy dissipation structure, a device to slow fast moving flows so as to prevent erosion, will be placed at the terminus of the pipeline delivering water to Lytle Basins channel to ensure that water from the Project does not scour or erode the channel.
MM PS-12	Per the requirements of the Seven Oaks Accord, to avoid a significant effect on groundwater levels at one or more index wells located outside the Pressure Zone, Muni/Western will spread sufficient water to maintain static groundwater levels at the affected index wells. To implement this mitigation measure, Muni/Western will use a groundwater monitoring program based on information derived from the index wells. This information will be used in conjunction with forecasts of groundwater levels derived from Muni/Western integrated surface and groundwater models to identify trends in groundwater levels and isolate the share of change attributable to the Project. Remedial action will be implemented prior to an actual 10-foot reduction being reached, to avoid the significant impact.

Table 2: Cumulative Mitigation Measures

MM Cumulative BIO-1	The San Bernardino General Plan continues a number of policies in the Natural Resources Element designed to require review of biological impacts for each development project in coordination with the development and enforcement of Habitat Conservation Plans, and development of monitoring programs. The Riverside County General Plan Draft Program EIR identifies policies form the Multipurpose Open Space Element of the County of Riverside General Plan as well as additional measures to reduce impacts to biological resources associated with growth. Policies are designed to require review of biological impacts for each development project, avoidance of habitat fragmentation, and use of constructed wetlands to treat water before it enters the natural stream system. Residual impacts: despite General Plan policies, significant unavoidable cumulative biological impacts would still occur in San Bernardino and Riverside Counties.
MM Cumulative CR-1	Individual review of each of the related projects under CEQA would likely result in the identification of any significant cultural resource impacts and provide mitigation to reduce or avoid impacts. It is not certain that all significant cumulative impacts could be successfully mitigated, given the potentially large amount of ground disturbance involved with the Project and related projects. Residual impacts: potential cumulative impacts on cultural resources would remain significant.
MM Cumulative CR-2	The Natural Resources Element of the San Bernardino County General Plan contains a number of policies to mitigate impacts to cultural resources. Generally, these policies require cultural resource field surveys with all project submittals; the preparation of cultural resource overlays for all existing Planning Areas not covered by an overlay map; preliminary cultural resource reviews by the Archaeological Information Center; the cataloging of artifacts discovered as a result of a cultural resource investigation; and notification of the Native American Heritage Commission if projects require the excavation of Native American archaeological sites. The Multipurpose Open Space Element of the Riverside County General Plan also contains relevant policies that would mitigate impacts to cultural resources. The Riverside County General Plan Draft Program EIR identifies additional mitigation measures including compliance with State Health and Safety Code Section 7050.5 that requires disturbance of an area to cease where human remains have been encountered until the Riverside County Coroner has made a determination of the origin and disposition; avoidance of

MM Cumulative CR-2 (Continued)	cultural resources where possible, where avoidance of cultural resources is not possible, the planting of deterrent plant species such as prickly pear cactus shall be completed to minimize public availability to the site; and additional measures if avoidance and/or preservation of cultural resources is not possible, such as having a participant-observer present from the appropriate Indian Band or Tribe during archaeological testing or excavation of a project site. Residual impacts: significant cumulative impacts to cultural resources could still occur given the potentially large amount of ground disturbance related to growth and development.
MM Cumulative HAZ-1	The San Bernardino County General Plan includes policies to reduce impacts related to hazardous materials. Specifically, the Hazardous Waste/Materials section of the Man-made Hazards Element includes policies HW-1 through HW-26. In general, these measures establish an effective and expeditious permitting process for siting hazardous waste facilities that includes extensive public participation; ensures the protection of public health and safety when siting needed hazardous waste facilities; develops uniform set of criteria for the siting of hazardous waste facilities in the County, including a requirement that facilitates the siting only in areas with a zoning overlay of Specified Hazardous Waste Facility; and ensures coordination among agencies and County departments in the review of all hazardous waste applications within the County.
MM Cumulative SW-1	The San Bernardino General Plan contains a number of policies in the Water section of the Natural Resources Element designed to coordinate and manage water resources throughout the County. However, with regard to water resources in San Bernardino County, significant unavoidable impacts would still occur. The Riverside County General Plan addresses localized flooding risks in the Safety Element of the proposed Riverside County General Plan. Additionally, the proposed Riverside County General Plan Draft Program EIR contains measures to further mitigate flooding impacts including use of FEMA documents to minimize flood hazards, prohibition by the County of the alteration of floodways and channelization where possible, and the requirement that the 10–year flood flows be contained within the tops of curbs and the 100-year flood flows within the street rights-of-way. These policies would mitigate impacts related to surface water in Riverside County. Residual impacts: significant cumulative impacts to surface water resources related to water demand and generation of urban contaminants could still occur in San Bernardino County.

MM Cumulative GW-1	The San Bernardino County General Plan contains a number of policies in the Water section of the Natural Resources Element designed to coordinate and manage water resources throughout the County. The Riverside County General Plan contains a number of policies in the multipurpose Open Space Element and Land Use Element designed to avoid overdraft and groundwater contamination. Residual impacts: significant unavoidable cumulative groundwater impacts would still occur in San Bernardino County.

STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

PERMIT FOR DIVERSION AND USE OF WATER

PERMIT 21265

Application **31370** of **San Bernardino Valley Municipal Water District and Western Municipal Water District of Riverside County**
P.O. Box 5906
San Bernardino, CA 92412-5906

filed on **November 4, 2002**, has been approved by the State Water Resources Control Board (State Water Board or Board) SUBJECT TO PRIOR RIGHTS and to the limitations and conditions of this permit.

Permittee is hereby authorized to divert and use water as follows:

1. Source of water

Source:	Tributary to:
Santa Ana River (1, 3, 6, 9, 10, 11,12)	**Pacific Ocean**
Bear Creek (2)	**Santa Ana River thence Pacific Ocean**
Breakneck Creek (4)	**Santa Ana River thence Pacific Ocean**
Keller Creek (5)	**Santa Ana River thence Pacific Ocean**
Alder Creek (7)	**Santa Ana River thence Pacific Ocean**

within the County of **San Bernardino.**

2. Location of points of diversion (POD) and points of rediversion (POR)

By California Coordinate System of 1983, Zone **5**	40-acre subdivision of public land survey or projection thereof	Section	Township	Range	Base and Meridian
POD & POR #1: Seven Oaks Dam North 1,866,500 ft. and East 6,835,000 ft.	**NE¼ of NW¼**	**4**	**01S**	**02W**	**SB**
POD #2: North 1,882,500 ft. and East 6,859,600 ft.	**SE¼ of NE¼**	**19**	**01N**	**01W**	**SB**
POD #3: North 1,882,400 ft. and East 6,859,700 ft.	**SE¼ of NE¼**	**19**	**01N**	**01W**	**SB**
POD #4: North 1,880,900 ft. and East 6,858,100 ft.	**NW¼ of SE¼**	**19**	**01N**	**01W**	**SB**
POD #5: North 1,877,700 ft. and East 6,846,200 ft.	**NW¼ of NE¼**	**26**	**01N**	**02W**	**SB**
POD #6: North 1,876,700 ft. and East 6,846,700 ft.	**SW¼ of NE¼**	**26**	**01N**	**02W**	**SB**
POD #7: North 1,877,100 ft. and East 6,843,600 ft.	**NW¼ of NW¼**	**26**	**01N**	**02W**	**SB**
POR #8: North 1,865,800 ft. and East 6,837,100 ft.	**SE¼ of NE¼**	**4**	**01S**	**02W**	**SB**
POD & POR #9: North 1,864,900 ft. and East 6,835,000 ft.	**SE¼ of NW¼**	**4**	**01S**	**02W**	**SB**
POD & POR #10: North 1,864,900 ft. and East 6,834,600 ft.	**SE¼ of NW¼**	**4**	**01S**	**02W**	**SB**
POD & POR #11: North 1,863,500 ft. and East 6,834,000 ft.	**NW¼ of SW¼**	**4**	**01S**	**02W**	**SB**
POD & POR #12: North 1,862,800 ft. and East 6,834,000 ft.	**SW¼ of SW¼**	**4**	**01S**	**02W**	**SB**

2 (continued) Location of point of diversion

By California Coordinate System of 1983, Zone **6**	40-acre subdivision of public land survey or projection thereof	Section	Township	Range	Base and Meridian
POR #13: **Lake Mathews (Cajalco Dam)** **North 2,249,950 ft. and** **East 6,193,550 ft.**	**NE¼ of SW¼**	**12**	**04S**	**06W**	**SB**
POR #14: **Diamond Valley Lake Dam** **North 2,188,680 ft. and** **East 6,313,210 ft.**	**NE¼ of NW¼**	**11**	**06S**	**02W**	**SB**
POR #15 **Lake Skinner Dam** **North 2,157,870 ft. and** **East 6,311,180 ft.**	**SW¼ of SE¼**	**3**	**07S**	**02W**	**SB**

3. Purpose of use	4. Place of use	Section (Projected)*	Township	Range	Base and Meridian	Acres
Municipal, Industrial, Irrigation, Heat Control, Frost Protection and Recreational uses	**San Bernardino Valley Municipal Water District and Western Municipal Water District of Riverside County's Service Areas***					

*The place of use is shown on maps dated June 7, 2010 and June 14, 2010 and filed with the State Water Board.

5a. The water appropriated shall be limited to the quantity which can be beneficially used and shall not exceed **1,100** cubic feet per second (cfs) by direct diversion and **100,000** acre-feet per annum (afa) by underground and/or surface storage to be diverted from **January 1** to **December 31** of each year. The amount of surface storage at Seven Oaks Dam shall not exceed 50,000 afa. The maximum rate of diversion to offstream storage shall not exceed 1,250 cfs. The maximum rate of diversion to underground storage shall not exceed 400 cfs. The total amount of water to be taken from the sources shall not exceed 100,000 acre-feet (af) per water-year from October 1 to September 30. The total rate for water to be taken from the sources for either direct use, underground storage, and/or offstream surface storage shall not exceed 1,250 cfs.

(0000005E)

5b. The total quantity of water to be taken from the sources under both Application 31165 and Application 31370 shall not exceed 198,317 af per water-year from October 1 to September 30. The total amount of water diverted to storage at Seven Oaks Dam under both Applications 31165 and 31370 shall not exceed 50,000 af per water-year from October 1 to September 30. The total combined rate for water to be taken from the sources under Applications 31165 and 31370 for either direct use, underground storage, and/or offstream surface storage shall not exceed an instantaneous rate of 1,250 cfs.

(0000005L)

6. The amount authorized for appropriation may be reduced in the license if investigation warrants.

(0000006)

7. Construction work and the application of water to beneficial use shall be prosecuted with reasonable diligence. Actual construction shall begin no later than June 30, 2010 and be completed by October 1, 2020. Water shall be put to full beneficial use by December 31, 2059.

(0000009)

8. Progress reports shall be submitted promptly by Permittee when requested by the State Water Board until a license is issued.

(0000010)

9. Permittee shall allow representatives of the State Water Board and other parties, as may be authorized from time to time by said State Water Board, reasonable access to project works to determine compliance with the terms of this permit.

(0000011)

10. Pursuant to California Water Code sections 100 and 275, and the common law public trust doctrine, all rights and privileges under this permit and under any license issued pursuant thereto, including method of diversion, method of use, and quantity of water diverted, are subject to the continuing authority of State Water Board in accordance with law and in the interest of the public welfare to protect public trust uses and to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of said water.

The continuing authority of the State Water Board may be exercised by imposing specific requirements over and above those contained in this permit with a view to eliminating waste of water and to meeting the reasonable water requirements of Permittee without unreasonable draft on the source. Permittee may be required to implement a water conservation plan, features of which may include but not necessarily be limited to: (1) reusing or reclaiming the water allocated; (2) using water reclaimed by another entity instead of all or part of the water allocated; (3) restricting diversions so as to eliminate agricultural tailwater or to reduce return flow; (4) suppressing evaporation losses from water surfaces; (5) controlling phreatophytic growth; and (6) installing, maintaining, and operating efficient water measuring devices to assure compliance with the quantity limitations of this permit and to determine accurately water use as against reasonable water requirements for the authorized project. No action will be taken pursuant to this paragraph unless the State Water Board determines, after notice to affected parties and opportunity for hearing, that such specific requirements are physically and financially feasible and are appropriate to the particular situation.

The continuing authority of the State Water Board also may be exercised by imposing further limitations on the diversion and use of water by the Permittee in order to protect public trust uses. No action will be taken pursuant to this paragraph unless the State Water Board determines, after notice to affected parties and opportunity for hearing, that such action is consistent with California Constitution Article X, Section 2; is consistent with the public interest; and is necessary to preserve or restore the uses protected by the public trust.

(0000012)

11. The quantity of water diverted under this permit and under any license issued pursuant thereto is subject to modification by the State Water Board if, after notice to the Permittee and an opportunity for hearing, the State Water Board finds that such modification is necessary to meet water quality objectives in water quality control plans which have been or hereafter may be established or modified pursuant to Division 7 of the Water Code. No action will be taken

pursuant to this paragraph unless the State Water Board finds that: (1) adequate waste discharge requirements have been prescribed and are in effect with respect to all waste discharges which have any substantial effect upon water quality in the area involved, and (2) the water quality objectives cannot be achieved solely through the control of waste discharges.

(0000013)

12. This permit does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish & G. Code, §§ 2050-2097) or the federal Endangered Species Act (16 U.S.C.A. §§ 1531-1544). If a "take" will result from any act authorized under this water right, the Permittee shall obtain authorization for an incidental take prior to construction or operation of the project. Permittee shall be responsible for meeting all requirements of the applicable Endangered Species Act for the project authorized under this permit.

(0000014)

13. Permittee shall maintain records of the amount of water diverted and used to enable State Water Board to determine the amount of water that has been applied to beneficial use pursuant to Water Code section 1605.

(0000015)

14. This permit shall not be construed as conferring upon the Permittee right of access to the point of diversion.

(0000022)

15. Permittee shall consult with the Division of Water Rights (Division) and, within one year from the date of this permit, shall submit to the State Water Board its Urban Water Management Plan as prepared and adopted in conformance with section 10610, et seq. of the California Water Code, supplemented by any additional information that may be required by the Board.

All cost effective measures identified in the Urban Water Management Plan and any supplements thereto shall be implemented in accordance with the schedule for implementation found therein.

(0000029A)

16. If it is determined after permit issuance that the as-built conditions of the project are not correctly represented by the map(s) prepared to accompany the application, Permittee shall, at his expense have the subject map(s) updated or replaced with equivalent as-built map(s). Said revision(s) or new map(s) shall be prepared by a civil engineer or land surveyor registered or licensed in the State of California and shall meet the requirements prescribed in section 715 and sections 717 through 723 of the California Code of Regulations, Title 23.. Said revision(s) or map(s) shall be furnished upon request of the Chief of the Division of Water Rights[1].

(0000030)

17. No work shall commence and no water shall be diverted, stored or used under this permit until a copy of a stream or lake alteration agreement between the State Department of Fish and Game (DFG) and the Permittee is filed with the Division. Compliance with the terms and conditions of the agreement is the responsibility of the Permittee. If a stream or lake alteration agreement is not necessary for this permitted project, the Permittee shall provide the Division a copy of a waiver signed by DFG.

(0000063)

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[1] The Chief of the Division of Water Rights is hereafter referred by the State Water Board as the Deputy Director for Water Rights.

18. In order to prevent degradation of the quality of water during and after construction of the project, prior to commencement of construction undertaken after issuance of the permit, Permittee shall file a report pursuant to Water Code Section 13260 and shall comply with all waste discharge requirements imposed by the California Regional Water Quality Control Board, Santa Ana Region, or by the State Water Board.

(0000100)

19. Prior to diversion of water under this permit, Permittee shall: (1) install devices to measure the instantaneous rate of diversion and the quantities of water placed into underground storage, and (2) install devices to measure or provide documentation of the method to be used to determine the quantity of water recovered from underground storage and placed to beneficial use. All measuring devices and the method of determining the quantity of water placed into and recovered from underground storage shall be approved by the State Water Board prior to diversion of water under this permit. All measuring devices shall be properly maintained. The diversion data shall be posted on Permittee's websites on a weekly basis.

(0080117)

20. The Permittee shall obtain all necessary state and local agency permits required by other agencies prior to construction and diversion of water. Copies of such permits and approvals shall be forwarded to the Deputy Director for Water Rights (Deputy Director).

(0000203)

21. No debris, soil, silt, cement that has not set, oil, or other such foreign substance will be allowed to enter into or be placed where it may be washed by rainfall runoff into the waters of the State. When operations are completed, any excess materials or debris shall be removed from the work area.

(0000208)

22. The State Water Board adopts and incorporates by reference into this permit the mitigation measures and monitoring and reporting requirements applicable to the impacts of the Project on biological and cultural resources, geology, hazardous material and groundwater contamination, groundwater and surface water hydrology, water quality and public services, utilities and transportation identified in the Final EIR, specifically mitigation measures MM BIO-1, MM BIO-2 and MM BIO-6 through MM BIO-10, MM CR 1 through MM CR 4, MM HAZ 1 through MM HAZ 5, MM GEO-1 through MM GEO-8, MM GW-1, MM SW-2 and MM PS-12. (See attached Table 1.) Permittee must implement the measures to mitigate significant impacts and conduct the required reporting and monitoring of those measures as provided in the Mitigation Monitoring and Reporting Plan adopted on March 21, 2007 by the respective Boards of Directors of San Bernardino Valley Municipal Water District and Western Municipal Water District of Riverside County. In addition, Permittee shall submit an annual report to the Deputy Director that includes the results of the Mitigation Monitoring and Reporting Program. The State Water Board reserves jurisdiction to require any reasonable amendments to these measures and requirements to ensure that they will accomplish the stated goal.

(0400500)

23. The State Water Board adopts and incorporates by reference into this permit the mitigation measures and monitoring and reporting requirements applicable to the cumulative impacts of the Project on biological and cultural resources, geology, hazardous material and groundwater contamination, groundwater and surface water hydrology and water quality, and public services, utilities and transportation identified in the EIR, specifically mitigation measures MM Cumulative BIO-1, MM Cumulative CR-1, MM Cumulative CR-2, MM Cumulative HAZ-1, MM Cumulative SW-1 and MM Cumulative GW-1. (See attached Table 2.) Permittee must implement the measures to mitigate cumulative impacts and conduct the required reporting and monitoring of those measures as provided in the Mitigation Monitoring and Reporting Plan adopted by the respective Boards of Directors of San Bernardino Valley Municipal Water District and Western

Municipal Water District of Riverside County on March 21, 2007. In addition, Permttee shall submit to the Deputy Director an annual report that includes the results of the Mitigation Monitoring and Reporting Program. The State Water Board reserves jurisdiction to require any reasonable amendments to these measures and requirements to ensure that they will accomplish the stated goal.

(0400500)

24. This permit shall not be construed as conferring upon Permittee right of access to facilities of the U.S. Army Corps of Engineers and the Santa Ana River Mainstem Local Sponsors.

(0000022)

25. This permit is specifically subject to the prior rights of Bear Valley Mutual Water Company, City of Redlands, East Valley Water District, Lugonia Water Company, North Fork Water Company and Redlands Water Company to divert the first 88 cfs of the natural flow of the Santa Ana River pursuant to pre-1914 appropriative rights, to the extent that such rights may exist.

(0400500)

26. This permit is specifically subject to the prior rights of San Bernardino Valley Water Conservation District under Licenses 2831 and 2832 issued pursuant to Applications 2217 and 4807, and any valid pre-1914 appropriative right confirmed by the Court.

(0400500)

27. Nothing in this permit shall be construed as authorizing any diversions contrary to the provisions of the December 19, 2002 Biological Opinion issued by United States Fish and Wildlife Service for operation of Seven Oaks Dam, as may be revised in the future, including flow releases for downstream over-bank inundation to preserve State and federally listed threatened and endangered species and their habitat.

(0600500)

28. Permittee shall only divert water at points of diversion 5 though 10 in compliance with the terms and conditions of Federal Energy Regulatory Commission (FERC) license Project No. 1933 and 401 water quality certification as well as any future FERC licenses and 401 water quality certifications.

(0560900)

29. Permittee shall not, without the prior written consent of Southern California Edison (SCE), construct, operate or maintain diversion works at points of diversion located upstream of the flood inundation pool of Seven Oaks Dam in a manner that interferes with the operation and maintenance of the hydroelectric works licensed to SCE by the Federal Energy Regulatory Commission (FERC) license for Project No. 1933. Permittee's diversion of water at such points of diversion shall not interfere with SCE's diversion of water for hydroelectric purposes, again as described in the FERC license for Project No. 1933. Nothing in this permit shall be construed to limit Permittee's diversion of water from such points of diversion at times when the quantity of water available for diversion at such points of diversion exceeds the demand of SCE's facilities to divert water from the Santa Ana River system.

(0430999)

30. This permit shall not be construed as conferring upon Permittee the right of access to Seven Oaks Dam, the points of diversion, the lands necessary for related facilities, or the lands necessary for inundation for water storage. Access to, construction upon, or inundation of National Forest Service lands shall not commence prior to authorization by the Forest Service, in accordance with applicable laws and regulations. Such authorization will require compliance with all applicable federal laws and regulations. Permittee specifically recognizes that completion of

the applicable legal process does not guarantee such authorization will be granted, the issuance of this water right permit notwithstanding.

(0000022)

31. This permit shall not be construed as conferring upon Permittee the right of access to Seven Oaks Dam, the points of diversion, and lands necessary for related facilities, or the lands necessary for inundation for water storage. Permittee shall not commence construction and operation of water diversion facilities at Seven Oaks Dam without a written access agreement from the Santa Ana River Mainstem Project Local Sponsors.

(0000022)

32. Flow in the Santa Ana River is highly variable from year to year. Because the face value of this permit is based on a rare storm event, this permit shall not be construed as giving any assurance that such an event will occur. The actual amount of water available for appropriation may be much less.

(0000999)

33. Permittee is required to follow guidance from existing state and federally mandated projects regarding groundwater contaminant plumes within and outside the San Bernardino Basin Area. This includes coordination with appropriate oversight agencies and compliance with policies regarding the remediation of the groundwater contaminant plumes.

(0400800)

34. Permittee shall not use the Cactus Spreading and Flood Control Basins under this permit.

(0400800)

35a. In order to prevent degradation of the quality of water released to the Santa Ana River from storage at Seven Oaks Dam, the State Water Board may modify this permit to set conditions that apply water quality objectives to any release from storage.

35b. No water shall be released from storage of Seven Oaks Dam for purposes of rediversion by Permittee until Permittee has consulted with the Chief Deputy Director for Water Quality or his or her delegee and the Chief Deputy Director has determined that the releases will be consistent with applicable water quality objectives. The releases shall be consistent with any conditions the Chief Deputy Director determines are necessary to ensure compliance with applicable water quality objectives.

(0400800)

36. In order to prevent degradation of water quality during and after construction of the project, prior to commencement of any construction undertaken after issuance of the permit, Permittee shall file a report pursuant to Water Code Section 13260 and shall comply will all waste discharge requirements imposed by the California Regional Water Quality Control Board, Santa Ana Region, or by the State Water Board.

(0400800)

This permit is issued and Permittee takes it subject to the following provisions of the Water Code:

Section 1390. A permit shall be effective for such time as the water actually appropriated under it is used for a useful and beneficial purpose in conformity with this division (of the Water Code), but no longer.

Section 1391. Every permit shall include the enumeration of conditions therein which in substance shall include all of the provisions of this article and the statement that any appropriator of water to whom a permit is issued takes it subject to the conditions therein expressed.

Section 1392. Every Permittee, if he accepts a permit, does so under the conditions precedent that no value whatsoever in excess of the actual amount paid to the State therefore shall at any time be assigned to or claimed for any permit granted or issued under the provisions of this division (of the Water Code), or for any rights granted or acquired under the provisions of this division (of the Water Code), in respect to the regulation by any competent public authority of the services or the price of the services to be rendered by any Permittee or by the holder of any rights granted or acquired under the provisions of this division (of the Water Code) or in respect to any valuation for purposes of sale to or purchase, whether through condemnation proceedings or otherwise, by the State or any city, city and county, municipal water district, irrigation district, lighting district, or any political subdivision of the State, of the rights and property of any Permittee, or the possessor of any rights granted, issued, or acquired under the provisions of this division (of the Water Code).

STATE WATER RESOURCES CONTROL BOARD

James W. Kassel

for *Victoria A. Whitney*
Deputy Director for Water Rights

Dated: JUN 29 2010

Attachments

Table 1: Mitigation Measures

MM BIO-1	Muni/Western will minimize disturbance to native habitats and listed and non-listed sensitive species by the implementation of the following measures at construction sites prior to and during construction. Where ground disturbance is required, the Muni/Western program will include the following: (1) Clearly marking and delineating the limits of the staging areas as well as the construction corridors/zones in the field and graphically on all final construction drawings and blueprints. Personnel and equipment will be prohibited in native habitats outside the construction limits. (2) Biologically sensitive areas, including individuals or colonies of listed and non-listed sensitive plant species and wildlife species, will be identified and delineated in the field prior to ground disturbance (see MM BIO-3) and will be clearly marked graphically on all final construction plans or blueprints so they will be avoided to maximum extent feasible. (3) Use methods to minimize the construction corridor width to the maximum extent feasible in sensitive habitats, such as transporting and stockpiling excavated materials in disturbed area of the right-of-way (ROW), or into other parts of the ROW by truck or conveyor belt. **Employee Training** Implementation of an employee training program. Muni/Western's program will include an initial meeting with all personnel presented by a qualified biologist familiar with all affected species, habitats, and permit conditions. The employee training program will include a discussion of each species, all applicable laws, the permit conditions, and the potential penalties for violating permit conditions. The employee training program will be conducted before construction activities begin. Regular updates will occur during weekly tailgate meetings with construction personnel, and newly hired personnel will be informed of the permit conditions as well as the habitat and species issues before working on the Project site. **On-Site Monitoring** Biological monitoring of habitat clearing activities and removal of sedentary animals, both common and sensitive, within the ROW prior to clearing. This will require a qualified biologist to be at the location of habitat removal before clearing to attempt to remove animals where visible and, during removal activities, to ensure that no inadvertent impacts to adjacent habitats occur. Weekly inspections of the ROW perimeter near work areas will also reduce the potential for inadvertent impacts to adjacent habitat. **Best Management Practices (BMPs)** Dust control. All areas of mechanical ground disturbance, including dirt access roadways, will be consistently moistened to reduce the creation of dust clouds. The frequency of watering will be consistent with the desired goal and in accordance with regional standards and BMPs. Erosion control. Devices such as straw bales and "v" ditches will be installed in areas where construction activities may directly or indirectly cause erosion or sediment deposition on adjacent habitats. Routine removal of trash from construction areas. All refuse, including non-construction materials such as paper and miscellaneous food packaging materials, will be removed from the ROW to prevent littering of the adjacent habitat areas outside of the ROW. At a minimum, site clean-ups should occur weekly. **Listed Species Protection Measures** In areas where the San Bernardino Kangaroo Rat (SBKR) is present, either within or adjacent to the ROW, Muni/Western will install exclusionary fencing where appropriate to reduce the potential for SBKR entering the ROW.

MM BIO-1 (Continued)	Specification for the fencing will be particular to the goal of the SBKR exclusion and will be approved by the United States Fish and Wildlife Service (USFWS). Muni/Western may not install fencing in certain areas such as boulder-strewn washes where fence construction may cause substantial habitat disturbance. Following the installation of fencing, the animals within the ROW will be trapped and released within adjacent suitable habitat outside the ROW. These methods will be approved by the USFWS. In areas where the SBKR is present, either within or adjacent to the ROW, Muni/Western will limit construction activities to daylight hours (approximately 7:00 A.M. to 6:00 P.M.) During night hours, no activities that would unnaturally increase the light or noise within adjacent occupied habitat will occur. In areas where the SBKR, coastal California gnatcatcher CAGN, least Bell's vireo, or southwestern willow flycatcher are present either within or adjacent to the ROW, Muni/Western will avoid or reduce construction activities in the vicinity of occupied habitat during the breeding season. Avoidance will take place from March 1 through June 30. In certain areas, avoidance of southwestern willow flycatcher will continue through July 31. Where complete avoidance is not possible, construction activities will be conducted in a manner that attempts to minimize disturbance during early morning hours and avoids the most sensitive breeding months of April and May. In areas where preconstruction sensitive species surveys and other seasonally limited activities such as seed collection and plant propagation are needed, Muni/Western will prepare a calendar of when such activities need to be accomplished and incorporate this into design and construction schedules to ensure that the surveys can be conducted in the appropriate season without causing delays. (Draft EIR page 3.3-37 through 3.3-39; Final EIR Section 2.4.)
MM BIO-2	Muni/Western will develop a Habitat Revegetation, Restoration, and Monitoring Program (Program), obtaining input from CDFG, and USFWS, for implementation in all habitat areas directly affected by construction activities. The Program will include the following measures: **Invasive Species Control** Where appropriate and feasible, the area to be treated will be treated to kill invasive exotics species and limit their seed production before initiating any earthmoving activity with the objectives of: (1) preventing invasive species from spreading from the disturbance area, and (2) removing weed sources from the salvaged topsoil. Herbicides will be used only by a licensed herbicide applicator and may require notification to property owners or resource agencies. The treatment will be completed before earthmoving in order for this mitigation to have its intended effect (e.g., the treatment would need to occur before target species set seed). **Topsoil Salvage and Replacement** In areas where vegetation and soil are to be removed, the topsoil will be salvaged and replaced, where practicable. This may be accomplished using two lifts, the first to salvage the seed bank, and the second to salvage soil along with soil biota in the root zone. Soil will be stockpiled in two areas near the Project site, with the seed bank labeled to identify it. Topsoil will be replaced in the proper layers after final reconfiguration of disturbed areas. Where presence of extensive deposits of boulders and cobbles limit the opportunity to salvage topsoil and make the above-mentioned procedure infeasible, Muni/Western will salvage available surface material and stockpile it for replacement on the surface of the restored area. Stockpiles will be covered if the soil is to be left for an extended period to prevent losses due to erosion and invasion of weeds. **Habitat Rehabilitation and Revegetation** Muni/Western will develop and implement plans and specifications for replanting areas disturbed by the Project. Replanting will be with native species propagated from locally collected seed or cuttings, and, if applicable, will include seed or sensitive species that would be impacted during construction activities. Monitoring procedures and performance criteria will be developed by Muni/Western to

MM BIO-2 (Continued)	address revegetation and erosion control. The performance criteria will consider the level of disturbance and the condition of adjacent habitats. Monitoring will continue for three-to-five years, or until performance criteria have been met. Appropriate remedial measures, such as replanting, erosion control or weed control, will be identified and implemented if it is determined that performance criteria are not being met. (Draft EIR page 3.3-39 through 3.3-40; Final EIR Section 2.4.)
MM BIO-6	Prior to ground disturbance or other activities, qualified botanists will survey all proposed construction, staging, stockpile, and access areas for presence of non-listed sensitive plant species. Preconstruction surveys will occur during appropriate season and in accordance with established protocols (if required). These surveys will be conducted in all construction areas that occur in native habitats. In the event that non-listed sensitive plant species are observed in the impact area during pre-Project surveys, Muni/Western will implement the following measures: (a) Colonies will be clearly marked, mapped, and recorded along with the numbers of individuals in each colony and their respective condition. To the extent feasible, construction areas and access roads will be configured to avoid or minimize loss of individual plants and damage to occupied habitats. (b) Where impacts to non-listed sensitive plant species are unavoidable, Muni/Western will develop and implement a salvage, propagation, replanting, and monitoring program that will use both seed and salvaged plants constituting an ample and representative sample of each colony. (Draft EIR page 3.3-42.)
MM BIO-7	To reduce impacts on biological resources, Muni/Western will realign pipelines to avoid sensitive resources and habitat to the maximum extent feasible. Specifically, Muni/Western will realign Phase II of the Plunge Pool Pipeline northward and place it adjacent to Greenspot Road. (See Draft EIR Figure 3.3-7). This will put the project-related disturbance at the edge of the habitat and avoid bisecting the intermediate to mature RAFSS habitat along the western portion of the alignment. If it is infeasible to implement MM BIO-7, then the residual impact could be compensated by implementation of MM BIO-8, which is intended to compensate for permanent or long-term losses of sensitive RAFSS habitat as a result of installation of permanent facilities or long-term construction impacts that cannot be fully mitigated by MM BIO-1, MM BIO-2, and MM BIO-7. (Draft EIR page 3.3-44.)
MM BIO-8	To compensate for permanent long-term and temporal losses of RAFSS habitat value, Muni/Western will acquire, for every 1 acre impacted, a minimum of 1 acre of good quality habitat of similar or greater habitat value than the RAFSS area impacted by the Plunge Pool pipeline, and dedicate it in perpetuity as a habitat conservation easement area, or other appropriate designation, and provide funding for its future management as native habitat in perpetuity. The acquired RAFSS habitat area would ideally be contiguous with existing habitat already set aside in the WSPA or other dedicated RAFSS habitat. If good quality habitat in such a locality is not available for purchase, availability of other RAFSS habitat will be investigated, with the objective of obtaining good quality habitat near the Project area. Implementation of this mitigation measure will be subject to the requirement that such long-term mitigation and reporting plans for such acquisitions are to be approved by the Deputy Director for Water Rights of the State Water Resources Control Board prior to construction of the Plunge Pool Pipeline. (Draft EIR page 3.3-44; Final EIR Section 2.4.)
MM BIO-9	Muni/Western will monitor and remove invasive non-native species establishing in the channel and adjacent RAFSS habitats between Seven Oaks Dam and Mill Creek. Target species include species of tamarisk or salt cedar (*Tamarix* spp.), fountain grass (*Pennisetum setaceum*), and giant reed (*Arundo donax*). These species establish in habitats suitable to SBKR and Santa Ana River woolly-star and have the potential to

MM BIO-9 (Continued)	spread further into adjacent suitable habitat areas. Initial control will be established using a combination of physical removal and herbicidal treatment using appropriate environmental safeguards. Herbicides will be used pursuant to manufacturer's instructions, and standard measures will be taken to avoid impacts to water quality. Two to several follow-up treatments would be anticipated during the first year with follow-up monitoring and treatments at least once annually in the ensuing years. (Draft EIR page 3.3-61; Final EIR Section 2.4.)
MM BIO-10	Muni/Western will develop a program, in coordination with MSHCP agency participants, to selectively restore SBKR and Santa Ana River woolly-star habitat by using habitat manipulation, either by mechanical means or high pressure water, to remove vegetation and leave freshly deposited sand and silt, simulating the habitat-renewing aftermath of natural flooding. This will be done using an adaptive management approach with input from Multispecies Habitat Conservation Plan (MSHCP) stakeholders. If the high-pressure water method is used, water will be piped. A high-pressure nozzle will be directed at localized areas of habitat determined to be suitable for SBKR and Santa Ana River woolly-star after renewal. The nozzle will be hand-operated or operated from a light vehicle. Treatments will be accomplished in a randomized block design to allow experimental testing of variables such as duration and intensity of spray, addition of clean stand, season of disturbance, application of seed vs. allowing natural dispersal, etc. A rigorous monitoring program funded by Muni/Western will be established to enable the differences among experimental treatments to be determined. The primary indicator of success will be related to development of habitat characteristics identified with pioneer to intermediate RAFSS habitat within the SBKR and Santa Ana River woolly-star populations that have been documented. These characteristics are documented in the literature and will be specified as part of the Muni/Western Program. The program will be adjusted appropriately as results from earlier efforts become available. The design and implementation of the ongoing effort will be funded by Muni/Western and conducted by representatives of Muni/Western with input from the USFWS and CDFG. A complete description of this method is also included in Appendix E7 of the Draft EIR, Section 2.0. Muni/Western commit to achieving a mitigation performance of restoring 10 acres of intermediate- to late-stage RAFSS habitat to the early or intermediate stage RAFSS habitat during the first 20 years of Project implementation (Draft EIR pages 3.3-61 and 3.3-62; Final EIR Section 2.4.)
MM CR-1	In the event of an unanticipated archaeological or paleontological resource discovery during construction, all ground disturbances within 150 feet of the discovery will be halted or redirected to other areas until the discovery has been documented by a qualified archaeologist or paleontologist, and its potential significance evaluated consistent with CEQA. Resources considered significant will be avoided by Project design. If avoidance is not feasible, the resource will be subject to a data recovery mitigation program, as appropriate. If human remains are discovered the County Coroner will be contacted, and all procedures required by the California Health and Safety Code Section 7050.5, State CEQA Guidelines Section 15064.5(e) and PRC Section 5097.98 will be followed. (Draft EIR page 3.9-19.)
MM-CR-2	Proposed construction of the Plunge Pool Pipeline will avoid physical impacts to the Francis Cuttle Weir Dam to the extent feasible. In the event that any portion of the Francis Cuttle Weir Dam would be modified or demolished, a qualified architectural historian will prepare a historic recordation of the Francis Cuttle Weir Dam, in the context of the Conservation District's groundwater spreading system. The recordation will conform to the standards of either the Historic American Buildings Survey (HABS) or the Historic American Engineering Record (HAER). (Draft EIR page 3.9-20.)

MM CR-3	Prior to construction activities along the segment of the Plunge Pool Pipeline, Phase I, align north of Greenspot Road, the location of the North Fork Canal will be precisely mapped on engineering design plans to identify where the canal falls within the construction corridor. Temporary fencing will be placed 5 feet south of the canal along the portion of the canal that falls within the construction corridor to provide a small buffer area, and no heavy construction equipment or vehicles will be allowed north of the fencing. (Draft EIR page 3.9-21.)
MM CR-4	If it is necessary to install the Morton Canyon Connector II Pipeline through the "Hole in the Wall" within the retaining wall of Greenspot Bridge, construction activities will be confined to previously disturbed sections only and the wall will be restored to pre-Project conditions. Prior to construction, a qualified architectural historian will review the final construction designs of the Morton Canyon Connector II Pipeline to verify avoidance of significant impacts to any Greenspot Bridge feature. (Draft EIR page 3.9-24.)
MM HAZ-1	Muni/Western will direct the contractor to wash out concrete trucks in a designated area where the material cannot run off into a stream or percolate into the groundwater. This area will be specified on all applicable construction plans and be in place before any concrete is poured. Muni/Western will direct the contractor to construction vehicles in a manner that contains fluids, such as lubricants, within an impervious area to avoid spill-related water quality impacts. (Draft EIR page 3.12-12.)
MM HAZ-2	Muni/Western will direct the contractor to inspect and, as necessary, service all equipment before it enters the construction site and regularly thereafter, and before working immediately adjacent to the Santa Ana River or any other drainage or creek to avoid equipment leak-related water quality impacts. Muni/Western will direct the contractor to repair any leaks or hoses/fittings in poor condition before the equipment begins work. (Draft EIR page 3.12-12.)
MM HAZ-3	Muni/Western will direct the contractor to prepare a spill prevention and contamination plan prior to equipment use on the site. Muni/Western will direct the contractor to follow the spill prevention plan during Project construction to prevent spill-related water quality impacts. This plan will include, but not necessarily be limited to: a. Specific bermed equipment maintenance and refueling areas. b. Bermed and lined hazardous material storage areas on site that are covered during the rainy season. c. Hazardous material spill cleanup equipment on site (e.g.,absorbent pads, shovels, and bags to contain contaminated soil). d. Workers trained in the location and use of cleanup equipment. (Draft EIR page 3.12-12.)
MM HAZ-4	Using available data, in conjunction with the integrated surface and groundwater models, Muni/Western will identify groundwater trends, including plume movement and isolate changes attributable to implementation of the Project. To the extent feasible given existing infrastructure, and consistent with meeting other basin management objectives, Muni/Western will direct Project water spreading to limit adverse plume movements. (Draft EIR page 3.12-14.)
MM-HAZ-5	Muni/Western will make an alternative water supply available to parties affected by contaminated wells, or provide treatment for affected wells, at Muni/Western's discretion. The alternative supply or treatment for affected wells will be made available for all times when pertinent water quality standards are exceeded as a result of the Project. (Final EIR section 2.3.2.)
MM GEO-1	Before beginning construction, a sedimentation and erosion control plan will be prepared by Muni/Western and submitted to the Santa Ana Regional Water Quality Control Board

MM GEO-1 (Continued)	(SARWQCB) for approval. In addition, a Storm Water Pollution Prevention Plan (SWPPP) will be prepared by Muni/Western and submitted to the SARWQCB for approval prior to construction. Where possible, erosion control measures will be implemented by Muni/Western before beginning work in the rainy season. To minimize short-term impacts associated with erosion and off-site siltation of the SAR, standard erosion and sediment control features will be used during and immediately after grading and excavations.
MM GEO-2	Muni/Western will direct the contractor to install, prior to de-watering activities, energy dissipation devices at discharge points to prevent erosion. Sedimentation basins (such as straw bales lined with filter fabric) will be used at dewatering discharge points to prevent excess downstream sedimentation. These basins will be constructed during dewatering and regularly maintained during construction, including after storm events, to keep them in good working order.
MM GEO-3	Muni/Western will implement recommendations established in a site-specific geotechnical report, prepared by a qualified engineer or engineering geologist. The report recommendations will be based on comprehensive evaluation of slope stability, seismic, and soil conditions that may affect construction of the pipelines and related facilities. Recommendations will be consistent with provisions of California Code of Regulations, Title 8, Construction and Safety Orders. Project grading and excavations will be observed by a geotechnical engineer, engineering geologist, or other qualified representative, to verify compliance with recommendations of the geotechnical report. The geotechnical investigation will be completed in accordance with: (1) CDMG Special Publication 117, *Guidelines for Evaluating and Mitigating Seismic Hazards in California* (CDMG 1997). (2) Southern California Earthquake Center, Recommended Procedures for Implementation of DMG Special Publication 117 Guidelines for Analyzing and Mitigating Liquifaction in California (SCEC1999).
MM GEO-4	Muni/Western will implement seismic-related recommendations contained in a site-specific geotechnical report, as discussed in MM GEO-3, to minimize seismically induced damage to the pipeline.
MM GEO-5	A water flow shut-off mechanism will be installed by Muni/Western at the Plunge Pool Pipeline Intake Structure to terminate flow immediately following a large earthquake in the vicinity of the site.
MM GEO-6	Muni/Western will complete emergency repairs to the pipeline and/or related facilities, in the event of seismically induced damage. MM GEO-1 and MMGEO-2 will be applied to reduce erosion related impacts associated with soil disturbance during emergency repairs.
MM GEO-7	Muni/Western will implement a groundwater level monitoring program using data from Index Wells (see Figure 3.4-5). This information will be used in conjunction with forecasts of groundwater levels derived from Muni/Western integrated surface and groundwater models to identify trends in groundwater levels and identify changes attributable to the Project. To the extent feasible given existing infrastructure, and consistent with meeting other basin management objectives, Muni/Western will direct Project water spreading to limit high groundwater conditions in the vicinity of Devil Canyon, Lytle Creek, Mill Creek, and areas in the forebay and intermediate area of the SBBA.

MM GEO-8	Muni/Western will implement a groundwater level monitoring program using data from Index Wells. This information will be used in conjunction with forecasts of groundwater levels derived from Muni/Western integrated surface and groundwater models to identify trends in groundwater levels and isolate changes attributable to the Project. To the extent feasible given existing infrastructure, and consistent with meeting other basin management objectives, Muni/Western will direct Project water spreading to limit potential for subsidence in the Pressure Zone area of the SBBA.
MM GW-1	Using available reliable data, Muni/Western will, on an annual basis, evaluate impacts of the Project on TDS and nitrate concentrations in the SBBA. To the extent feasible given existing infrastructure, and consistent with meeting other basin management objectives, Muni/Western will direct Project water spreading to reduce significant TDS and nitrate impacts.
MM SW-2	An energy dissipation structure, a device to slow fast moving flows so as to prevent erosion, will be placed at the terminus of the pipeline delivering water to Lytle Basins channel to ensure that water from the Project does not scour or erode the channel.
MM PS-12	Per the requirements of the Seven Oaks Accord, to avoid a significant effect on groundwater levels at one or more index wells located outside the Pressure Zone, Muni/Western will spread sufficient water to maintain static groundwater levels at the affected index wells. To implement this mitigation measure, Muni/Western will use a groundwater monitoring program based on information derived from the index wells. This information will be used in conjunction with forecasts of groundwater levels derived from Muni/Western integrated surface and groundwater models to identify trends in groundwater levels and isolate the share of change attributable to the Project. Remedial action will be implemented prior to an actual 10-foot reduction being reached, to avoid the significant impact.

Table 2: Cumulative Mitigation Measures

MM Cumulative BIO-1	The San Bernardino General Plan continues a number of policies in the Natural Resources Element designed to require review of biological impacts for each development project in coordination with the development and enforcement of Habitat Conservation Plans, and development of monitoring programs. The Riverside County General Plan Draft Program EIR identifies policies form the Multipurpose Open Space Element of the County of Riverside General Plan as well as additional measures to reduce impacts to biological resources associated with growth. Policies are designed to require review of biological impacts for each development project, avoidance of habitat fragmentation, and use of constructed wetlands to treat water before it enters the natural stream system. Residual impacts: despite General Plan policies, significant unavoidable cumulative biological impacts would still occur in San Bernardino and Riverside Counties.
MM Cumulative CR-1	Individual review of each of the related projects under CEQA would likely result in the identification of any significant cultural resource impacts and provide mitigation to reduce or avoid impacts. It is not certain that all significant cumulative impacts could be successfully mitigated, given the potentially large amount of ground disturbance involved with the Project and related projects. Residual impacts: potential cumulative impacts on cultural resources would remain significant.
MM Cumulative CR-2	The Natural Resources Element of the San Bernardino County General Plan contains a number of policies to mitigate impacts to cultural resources. Generally, these policies require cultural resource field surveys with all project submittals; the preparation of cultural resource overlays for all existing Planning Areas not covered by an overlay map; preliminary cultural resource reviews by the Archaeological Information Center; the cataloging of artifacts discovered as a result of a cultural resource investigation; and notification of the Native American Heritage Commission if projects require the excavation of Native American archaeological sites. The Multipurpose Open Space Element of the Riverside County General Plan also contains relevant policies that would mitigate impacts to cultural resources. The Riverside County General Plan Draft Program EIR identifies additional mitigation measures including compliance with State Health and Safety Code Section 7050.5 that requires disturbance of an area to cease where human remains have been encountered until the Riverside County Coroner has made a determination of the origin and disposition; avoidance of

	cultural resources where possible, where avoidance of cultural resources is not possible, the planting of deterrent plant species such as prickly pear cactus shall be completed to minimize public availability to the site; and additional measures if avoidance and/or preservation of cultural resources is not possible, such as having a participant-observer present from the appropriate Indian Band or Tribe during archaeological testing or excavation of a project site. Residual impacts: significant cumulative impacts to cultural resources could still occur given the potentially large amount of ground disturbance related to growth and development.
MM Cumulative HAZ-1	The San Bernardino County General Plan includes policies to reduce impacts related to hazardous materials. Specifically, the Hazardous Waste/Materials section of the Man-made Hazards Element includes policies HW-1 through HW-26. In general, these measures establish an effective and expeditious permitting process for siting hazardous waste facilities that includes extensive public participation; ensures the protection of public health and safety when siting needed hazardous waste facilities; develops uniform set of criteria for the siting of hazardous waste facilities in the County, including a requirement that facilitates the siting only in areas with a zoning overlay of Specified Hazardous Waste Facility; and ensures coordination among agencies and County departments in the review of all hazardous waste applications within the County.
MM Cumulative SW-1	The San Bernardino General Plan contains a number of policies in the Water section of the Natural Resources Element designed to coordinate and manage water resources throughout the County. However, with regard to water resources in San Bernardino County, significant unavoidable impacts would still occur. The Riverside County General Plan addresses localized flooding risks in the Safety Element of the proposed Riverside County General Plan. Additionally, the proposed Riverside County General Plan Draft Program EIR contains measures to further mitigate flooding impacts including use of FEMA documents to minimize flood hazards, prohibition by the County of the alteration of floodways and channelization where possible, and the requirement that the 10–year flood flows be contained within the tops of curbs and the 100-year flood flows within the street rights-of-way. These policies would mitigate impacts related to surface water in Riverside County. Residual impacts: significant cumulative impacts to surface water resources related to water demand and generation of urban contaminants could still occur in San Bernardino County.

MM Cumulative GW-1	The San Bernardino County General Plan contains a number of policies in the Water section of the Natural Resources Element designed to coordinate and manage water resources throughout the County. The Riverside County General Plan contains a number of policies in the multipurpose Open Space Element and Land Use Element designed to avoid overdraft and groundwater contamination. Residual impacts: significant unavoidable cumulative groundwater impacts would still occur in San Bernardino County.

JOINT PROSECUTION AND COST-SHARING AGREEMENT RE FINAL RULE OF THE UNITED STATES FISH & WILDLIFE SERVICE TO DESIGNATE CRITICAL HABITAT FOR THE SANTA ANA SUCKER

This Joint Prosecution and Cost-Sharing Agreement ("**Agreement**") is entered into by and among the undersigned (the "**Parties**"), as listed on Exhibit A hereto.

RECITALS

A. The Parties are cooperating on efforts to review and analyze the effects of the United States Fish & Wildlife Service's Final Rule to Designate Critical Habitat for the Santa Ana Sucker (the "**Final Rule**"), which was published in the Federal Register on December 14, 2010. If the Parties conclude that the Final Rule has adverse effects, including but not limited to preventing maintenance of existing infrastructure, preventing the construction of new infrastructure, and/or limiting the diversion of water from the Santa Ana River or other streams, one or more of the Parties may commence litigation against the United States or seek other relief from the effects of the Final Rule. These cooperative efforts, both before and during any litigation may include the utilization of various experts and consultants to assist with the review and evaluation of the effects of the Final Rule, and the necessity, wisdom, and efficacy of potential challenges to it.

B. Through this Agreement, the Parties desire to govern their payment of costs and fees arising from their cooperative efforts and to confirm their common interests in maintaining a joint prosecution with respect to the Final Rule, to allow them to continue to share information related to the Final Rule, while continuing to preserve, to the fullest extent possible, the protections of the attorney-client privilege, work product privilege, common-interest doctrine,

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DOCUMENT 2304

deliberative process privilege, executive privilege, privileges regarding mediation or settlement communications, or any other privilege or protection existing under state or federal law.

AGREEMENT

NOW, THEREFORE, in consideration of the above recitals, and the mutual covenants and conditions contained herein, the Parties agree as follows:

1. The Parties shall contribute the sums listed in Exhibit B hereto, which sets forth each Party's contribution towards the fees and costs collectively incurred in the Parties' cooperative efforts on the Final Rule, plus the funds that may be needed to pursue a challenge to the Final Rule (whether by litigation or otherwise). If additional funds are needed, then the participating Parties will agree upon the amount of additional call(s) for funds and each participating Party's contribution to such call(s). In the event that any new parties decide to join the undersigned Parties and participate in this Agreement, Exhibits A and B shall be modified accordingly, and the amounts contributed shall be adjusted. San Bernardino Valley Municipal Water District shall have the responsibility for collecting each Party's contribution of funds, processing invoices submitted by the experts and consultants pursuant to their scopes of work attached hereto, coordinating communications among the Parties to the retained consulting experts, and for maintaining an accurate accounting of this administration of funds.

2. For purposes of this Agreement, "Joint Prosecution Materials" includes, but is not limited to, all communications (including communications related to the Final Rule or the proposed rule issued by the United States Fish & Wildlife Service on December 9, 2009 made prior to the execution of this Agreement), factual materials, mental impressions, legal analyses, theories or strategies, memoranda, reports, notes, emails or any other communications or documents that are protected from disclosure by the attorney-client privilege, work product

privilege, deliberative process privilege, executive privilege, common-interest doctrine, joint prosecution/defense doctrine, privileges regarding mediation or settlement communications, or any other privilege or protection existing under state or federal law, and that are exchanged among the Parties and/or their respective counsel in connection with the Final Rule. Joint Prosecution Materials do not include final versions of any correspondence, studies, or reports prepared by or on behalf of one or more Parties intended for review by the United States Fish & Wildlife Service or a non-Party.

3. The Parties will maintain as confidential all Joint Prosecution Materials (as defined above). Disclosure of Joint Prosecution Materials shall be limited to the Parties and their employees and contractors as well as any counsel, consultants, and lobbyists retained by the parties, or on behalf of the parties, for the purpose of maintaining a joint prosecution with respect to the Final Rule, subject to the further provisions of this Agreement.

4. Any Joint Prosecution Materials shared or transmitted by or between Parties should be clearly designated "CONFIDENTIAL: JOINT PROSECUTION MATERIALS." However, the failure to include such designation shall not preclude such materials from being afforded the protections of this Agreement and shall not be construed to constitute a waiver of any privilege or other protection.

5. Each Party shall take all appropriate measures to ensure that any person who is granted access to Joint Prosecution Materials is familiar with the terms of this Agreement and complies with those terms.

6. Each Party is represented by its own respective legal counsel in connection with the Final Rule, and the cooperative efforts referenced herein. Said legal counsel will not have an attorney-client relationship with any other Party to this Agreement as a result of the legal

counsel's participation in discussions and actions related to the Parties' cooperative efforts on the Final Rule. Similarly, said legal counsel will not have a duty of loyalty or confidentiality to any Party to this Agreement other than the legal counsel's specific client(s), and consequently, no Party may seek to disqualify the legal counsel for another Party as a result of the legal counsel's participation in discussions and actions related to the Parties' cooperative efforts on the Final Rule.

7. Except where required by the order of a court of competent jurisdiction, or by the prior written consent of the remaining Parties, a Party will not reveal to non-Parties any Joint Prosecution Materials it has received from another Party.

8. Each Party shall notify the Party that generated any Joint Prosecution Materials of any request to disclose the Joint Prosecution Materials to any non-Party, or of any proceeding before any court, administrative agency, or tribunal to compel the disclosure of such Joint Prosecution Materials, as soon as practicable after receipt of such request or the initiation of such proceeding. If a Party becomes subject to any judicial or administrative order purporting to compel release of Joint Prosecution Materials, that Party shall: (a) promptly notify the Party that generated the materials and all remaining Parties, and (b) make all reasonable efforts to give that Party an opportunity to protect the Joint Prosecution Materials.

9. No party is required to treat as confidential within the meaning of this Agreement any material where such material is, or hereafter becomes (without violation of this Agreement), public record, public knowledge, or is obtained from sources other than exchanges under this Agreement.

10. The sharing of Joint Prosecution Materials among the Parties is not intended to and will not constitute a waiver of any privilege or other protection of confidentiality, including

but not limited to the attorney-client privilege, work product privilege, common-interest doctrine, deliberative process privilege, executive privilege, privileges relating to mediation or settlement communications, or any other privilege or protection existing under state or federal law.

11. Execution of this Agreement constitutes the mutual agreement of the Parties that any sharing of Joint Prosecution Materials among themselves is reasonably necessary for the accomplishment of the Parties' common purposes as described above. Any sharing of Joint Prosecution Materials among the Parties is in reliance on this Agreement and the protections that arise from the Parties' common interests in reviewing, evaluating and potentially challenging the Final Rule.

12. Nothing in this Agreement shall obligate any Party to exchange documents or information with any other Party, whether or not such documents or information would be covered by this Agreement as Joint Prosecution Materials.

13. By this Agreement the Parties each acknowledge and agree that cooperation in the matters referenced above may involve the communication and sharing of confidential information and further agree that the interests of the Parties are not adverse as to matters within the scope of this Agreement. Each of the Parties has had a full opportunity to consult with separate counsel, is fully informed, and has concluded that the risk of any potential conflict of interest is outweighed by the benefits and efficiencies afforded by the opportunities for cooperation and sharing of Joint Prosecution Materials as provided for herein. The Parties consent to the sharing of Joint Prosecution Materials among their counsel, waive any potential conflict of interest created thereby, and mutually agree that this sharing of Joint Prosecution Materials and cooperation shall not constitute grounds for seeking disqualification of counsel in any matter or action.

14. If there is a breach of this Agreement by a Party, the Parties agree that the non-breaching Party will have no adequate remedy at law in money or damages and shall be entitled to seek and obtain, in addition to all other remedies that may be available, a temporary restraining order, injunctive relief, or other equitable relief against the breach or its continuance.

15. Nothing in this Agreement shall be construed to waive any rights, claims, or privileges that any Party shall have against another Party or any other person or entity.

16. This Agreement shall be binding upon the successors and assigns of the Parties.

17. This Agreement is made under, and shall be construed in accordance with, the laws of the State of California.

18. The individuals signing this Agreement in a representative capacity warrant that they have the authority to do so on behalf of the entity or entities they represent, and further agree that as representatives of the entity or entities that they respectively represent, they themselves are bound by all terms of this Agreement.

19. Any Party may withdraw from this Agreement by providing written notice to the other Parties. If a Party withdraws from this Agreement, the provisions of this Agreement shall continue to apply to the Joint Prosecution Materials that were shared during the time period when that Party was a party to this Agreement.

20. All notices and other communications required to be given to a Party under the terms of this Agreement (a) shall be in writing, (b) shall be personally delivered, or transmitted by facsimile or email, and (c) shall be directed to such Party at the address, facsimile number or email address specified below, or at such other address, facsimile number or email address as such Party may hereafter designate by notice in accordance with this paragraph.

Exhibit A

List of Parties

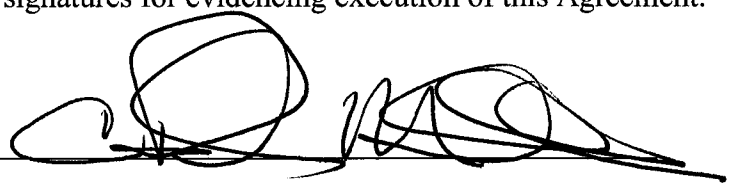
1. San Bernardino Valley Municipal Water District
2. Western Municipal Water District of Riverside County
3. City of Riverside Public Utilities
4. City of San Bernardino Municipal Water Department
5. San Bernardino Valley Water Conservation District
6. East Valley Water District
7. City of Redlands
8. Yucaipa Valley Water District
9. Bear Valley Mutual Water Company/Crafton Water Company
10. Big Bear Municipal Water District
11. West Valley Water District
12. Riverside County Flood Control District

Exhibit B

Each Party's Contribution

Agency	Contribution
San Bernardino Valley Municipal Water District	$90,000
Western Municipal Water District	$75,000
City of San Bernardino Municipal Water Department	$75,000
City of Riverside Public Utilities Department	$75,000
San Bernardino Valley Water Conservation District	$1,000
East Valley Water District	$75,000
City of Redlands	$50,000
Yucaipa Valley Water District	$15,000
Bear Valley/Crafton Water Companies	$50,000
Big Bear Municipal Water District	$15,000
Riverside County Flood Control District	$75,000
West Valley Water District	$15,000
Total	$611,000

21. This Agreement may be executed in counterparts, each of which so executed shall be deemed an original irrespective of the date of the execution, and said counterparts shall together constitute one and the same Agreement. Further, facsimile or .PDF copies of signatures shall be as effective as original signatures for evidencing execution of this Agreement.

By: 

Print Name: C. Patrick Milligan

Date: April 14, 2011

Title: Board President

Representing: San Bernardino Valley Municipal Water District

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By: _____

Print Name: John V. Rossi

Date: 4/13/11

Title: General Manager

Representing: Western Municipal Water District

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

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By: Belinda J. Graham

Print Name: Belinda J. Graham

Date: April 20, 2011

Title: Assistant City Manager

Representing: City of Riverside

Attest: Kerry Morton
or City Clerk

APPROVED AS TO FORM
Susan Wilson
DEPUTY CITY ATTORNEY

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

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By: 

Print Name: Stacey Aldstadt

Date: April 6, 2011

Title: General Manager

Representing: San Bernardino Municipal Water Department

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

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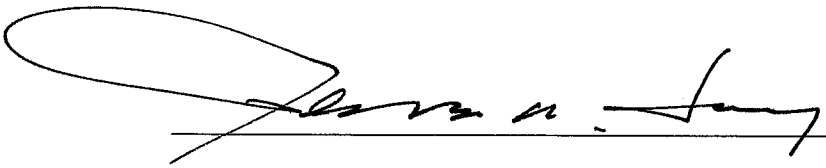
By: 

Print Name: CLARE H. DAY

Date: 27 APRIL 2011

Title: PRESIDENT

Representing: SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

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By: 

Print Name: Robert Martin

Date: April 25, 2011

Title: General Manager

Representing: East Valley Water District

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

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By: _____

Print Name: Pete Aguilar

Date: May 3, 2011

Title: Mayor

Representing: City of Redlands

ATTEST:

_____
Sam Irwin, City Clerk

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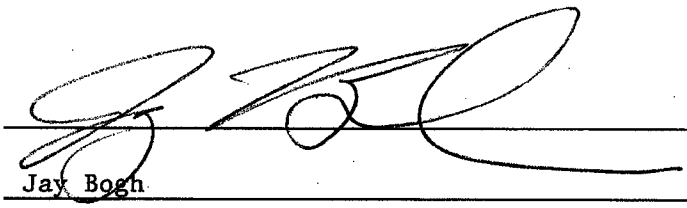
By: 

Print Name: Jay Bogh

Date: April 26, 2011

Title: Board President

Representing: Yucaipa Valley Water District

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

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By: 

Print Name: Michael L. Huffstutler

Date: May 5, 2011

Title: General Manager

Representing: Bear Valley Mutual Water Company

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

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By: _____

Print Name: Scott Hevle

Date: 8/6/11

Title: Gen. Mgr.

Representing: Big Bear Municipal Water District

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

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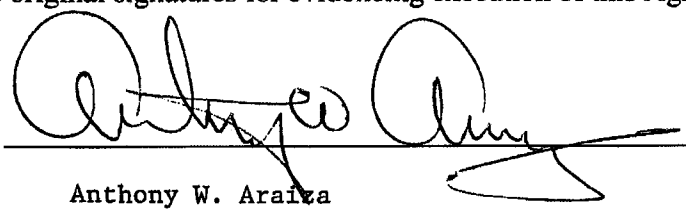
By: 

Print Name: Anthony W. Araiza

Date: April 28, 2011

Title: General Manager

Representing: West Valley Water District

CONFIDENTIAL
JOINT PROSECUTION MATERIAL

Receipt # 4155 19

DATE FILED & POSTED

NOTICE OF EXEMPTION

To:
San Bernardino County Clerk
Hall of Records Building, First Floor
222 W. Hospitality Lane
San Bernardino, CA 92415

Kern County Clerk
1115 Truxtun Avenue
Bakersfield, CA 93301

From:
San Bernardino Valley Municipal Water District
380 East Vanderbilt Way
San Bernardino, CA 92408

CLERK OF THE BOARD
OCT 07 2011
COUNTY OF
SAN BERNARDINO

Project Title: Water Banking and Water Supply Reliability Program with Kern Delta Water District

Location -- Specific: Counties of Kern and San Bernardino, within service areas of Kern Delta Water District and San Bernardino Valley Municipal Water District

Description of Nature, Purpose, and Beneficiaries of Project: San Bernardino Valley Municipal Water District (hereinafter, "Valley District") proposes to bank State Water Project water in banking facilities operated by the Kern Delta Water District (hereinafter, "Kern Delta") for later withdrawal and use within Valley District. Under the program, the Valley District will bank up to 30,000 acre-feet of the water it would otherwise be allocated during the 2011-2012 water year pursuant to Table "A" of its State Water Project contract in existing water banking facilities operated by the Kern Delta. Diversions to the water banking facilities will be made through existing water conveyance facilities and will occur during the period between October 2011 and February 2012. Under the proposal, Kern Delta will, at Valley District's request, return up to 5,000 acre-feet per year to Valley District through existing conveyance facilities during or after the 2011-12 water year.

The proposal is consistent with and included within the scope of Kern Delta's 2002 Final Environmental Impact Report ("FEIR") for its Groundwater Banking And In-Lieu Water Supply Project (State Clearinghouse # 2001011103), which addressed the environmental impacts of the use of Kern Delta's facilities for the banking of up to 213,000 acre-feet by other water agencies, such as Valley District. Because Valley District's proposal involves making use of presently-unused capacity of the California Aqueduct, other State Water Project facilities, and Kern Delta's conveyance and banking facilities, all of which were indentified in Kern Delta's FEIR as facilities that would be used to bank water, the project represents the use of existing facilities within the limits established by applicable legal requirements. Moreover, the environmental effects, if any, of the project were fully analyzed in Kern Delta's FEIR, and the project does not alter the conclusions of the 2002 FEIR.

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Name of Public Agency Approving or Carrying Out Activity: San Bernardino Valley Municipal Water District

Finding of Exempt Status:

☒ Categorical Exemption. CEQA Guidelines § 15301 (Existing Facilities)

Reasons why activity is exempt:

The project is exempt from CEQA review pursuant to 14 Cal. Code Regs. § 15301 (Existing Facilities) because the proposal is for the banking and recovery of up to 30,000 acre feet of water delivered pursuant to an existing long term State Water Project contract through existing water conveyance facilities to and from existing water banking facilities. The overall program for water banking by Kern Delta (of which this banking project is a small part) was previously analyzed under CEQA and any significant effects on the environment were fully mitigated.

Agency Contact Person: Douglas Headrick **Telephone**: (909) 387-9200

Signature: Douglas D Headrick **Date:** 10/7/2011

Douglas Headrick

Title: General Manager

☑ Signed by Public Agency

☐ Signed by Applicant

Date received for filing by County Clerk:

State of California—The Resources Agency
DEPARTMENT OF FISH AND GAME

2011 ENVIRONMENTAL FILING FEE CASH RECEIPT

RECEIPT# 415519

STATE CLEARING HOUSE # *(If applicable)*

SEE INSTRUCTIONS ON REVERSE. TYPE OR PRINT CLEARLY

LEAD AGENCY: San Bernardino Valley Municipal Water District
DATE: 10/7/2011

COUNTY/STATE AGENCY OF FILING: County of San Bernardino
DOCUMENT NUMBER:

PROJECT TITLE: Water Banking and Water Supply Reliability Program with Kern Delta

PROJECT APPLICANT NAME: San Bernardino Valley Municipal Water District
PHONE NUMBER: 909/387-9200

PROJECT APPLICANT ADDRESS: 380 East Vanderbilt Way
CITY: San Bernardino
STATE: CA
ZIP CODE: 92408

PROJECT APPLICANT *(Check appropriate box):*

☒ Local Public Agency ☐ School District ☐ Other Special District ☐ State Agency ☐ Private Entity

CHECK APPLICABLE FEES:

☐ Environmental Impact Report (EIR)	$2,839.25	$
☐ Mitigated/Negative Declaration (ND)(MND)	$2,044.00	$
☐ Application Fee Water Diversion *(State Water Resources Control Board Only)*	$850.00	$
☐ Projects Subject to Certified Regulatory Programs (CRP)	$965.50	$
☑ County Administrative Fee	$50.00	$ 50.00
☐ Project that is exempt from fees		
☑ Notice of Exemption		
☐ DFG No Effect Determination (Form Attached)		
☐ Other		$

PAYMENT METHOD: #394150

☐ Cash ☐ Credit ☑ Check ☐ Other TOTAL RECEIVED $ 50.00

SIGNATURE: X

TITLE: Deputy Clerk

WHITE - PROJECT APPLICANT YELLOW - DFG/ASB PINK - LEAD AGENCY GOLDENROD - COUNTY CLERK FG 753.5a (Rev. 11/10)

State of California—The Resources Agency
DEPARTMENT OF FISH AND GAME

2011 ENVIRONMENTAL FILING FEE CASH RECEIPT

RECEIPT# 415519

STATE CLEARING HOUSE # *(If applicable)*

SEE INSTRUCTIONS ON REVERSE. TYPE OR PRINT CLEARLY

LEAD AGENCY: San Bernardino Valley Municipal Water District
DATE: 10/7/2011

COUNTY/STATE AGENCY OF FILING: County of San Bernardino
DOCUMENT NUMBER:

PROJECT TITLE: Water Banking and Water Supply Reliability Program with Kern Delta

PROJECT APPLICANT NAME: San Bernardino Valley Municipal Water District
PHONE NUMBER: 909/387-9200

PROJECT APPLICANT ADDRESS: 380 East Vanderbilt Way
CITY: San Bernardino
STATE: CA
ZIP CODE: 92408

PROJECT APPLICANT *(Check appropriate box):*

☒ Local Public Agency ☐ School District ☐ Other Special District ☐ State Agency ☐ Private Entity

CHECK APPLICABLE FEES:

☐ Environmental Impact Report (EIR)	$2,839.25	$
☐ Mitigated/Negative Declaration (ND)(MND)	$2,044.00	$
☐ Application Fee Water Diversion *(State Water Resources Control Board Only)*	$850.00	$
☐ Projects Subject to Certified Regulatory Programs (CRP)	$965.50	$
☑ County Administrative Fee	$50.00	$ 50.00
☐ Project that is exempt from fees		
☑ Notice of Exemption		
☐ DFG No Effect Determination (Form Attached)		
☐ Other		$

PAYMENT METHOD: #394150

☐ Cash ☐ Credit ☑ Check ☐ Other TOTAL RECEIVED $ 50.00

SIGNATURE: X

TITLE: Deputy Clerk

WHITE - PROJECT APPLICANT YELLOW - DFG/ASB PINK - LEAD AGENCY GOLDENROD - COUNTY CLERK FG 753.5a (Rev. 11/10)

AGREEMENT BETWEEN KERN DELTA WATER DISTRICT AND THE SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT FOR A WATER MANAGEMENT PROGRAM

THIS AGREEMENT ("**Agreement**"), dated as of Oct 26, 2011, is entered into by and between the **KERN DELTA WATER DISTRICT** ("**Kern Delta**"), and **THE SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT** ("**Valley**"). Valley and Kern Delta may be referred to individually as Party or collectively as Parties.

PREAMBLE

This Agreement is in furtherance of development of a water management program ("Regulation Program") that is being implemented by Kern Delta and Valley for the purpose of enhancing the water supply available to both entities. It is intended that nothing in this Agreement or the Regulation Program is to (1) materially impair the integrity of existing and ongoing Kern Delta operations; (2) adversely impact either physically, operationally or economically the Kern Delta or its landowners; or (3) result in a net decrease in water supplies available for beneficial use within Kern Delta's boundaries specifically and the southern San Joaquin Valley generally. It is the intention of the Parties that, through provisions of this Agreement, actual or prospective adverse impacts of the Regulation Program will be avoided. The Regulation Program is intended to be operated in a manner to optimize available water supplies. It will utilize Kern Delta Facilities, as well as the Cross Valley Canal and the Intertie

Canal of the Arvin-Edison Transportation Facilities.

RECITALS

A. Kern Delta includes approximately 129,000 acres within its boundaries. Attached Exhibit B includes maps setting forth the boundaries (service area) of Kern Delta (Exhibit B-1); the Regulation Program Facilities (Exhibits B-2 and B-3). Approximately 87,000 acres have existing service connections to the Kern Delta distribution system (2,000 acres of which lie outside Kern Delta's boundaries), and the landowners within said surface water service area are in large part dependent on Kern Delta for a water supply. Additionally, Kern Delta's operations enhance groundwater conditions for the remaining approximately 34,000 acres within the District. To meet landowner demand, Kern Delta has, among other things, (i) contracted for a water supply with the Kern County Water Agency ("KCWA") providing for delivery to Kern Delta of 25,500 acre-feet of Table A Water from the California State Water Project ("Table A Water"); (2) entered into agreements with Buena Vista Water Storage District ("Buena Vista") providing for the exchange of Kern Delta's Table A Water for a like amount of Buena Vista's Kern River water; (3) acquired various Kern River water rights historically utilized to serve lands within and without Kern Delta's boundaries ("Kern River Entitlement"); and (4) entered into agreements with The Metropolitan Water District of Southern California ("Metropolitan") providing for the regulation of Metropolitan's water in the groundwater basin underlying Kern Delta. At times, Kern Delta has water available from its Table A Water, its Kern River Entitlement, or other sources, which could be better regulated through additional facilities constructed within Kern Delta and, in consideration of the benefits to be derived through this Agreement, Kern Delta is willing to regulate for Valley other water provided by Valley.

B. Valley is a public agency formed under the Municipal Water District Act of 1911. Valley provides imported supplies for water agencies to supplement local municipal water supplies within service area located in San Bernardino and Riverside Counties. Valley obtains its water supplies from the State Water Project, and other sources. Valley seeks to augment its dry year water supplies by arranging for delivery to and banking of water within Kern Delta and the extraction and delivery of banked water to Valley during periods of insufficient supply from available sources.

C. Valley and Kern Delta find that it will be mutually advantageous to enter into the Regulation Program as provided in this Agreement, whereby Kern Delta will regulate water on Valley's behalf and deliver that water to Valley upon request. The regulated water generally will be banked in the Kern Delta Basin and, upon demand of Valley; such water will be delivered to Valley through either an existing intertie into the California Aqueduct or through an exchange for water in the California Aqueduct, or both.

D. The Regulation Program will provide for usage by Valley of existing Kern Delta Facilities and construction and operation, for Valley usage, of Kern Delta Regulation Program Facilities, as well as Valley's usage of certain of Arvin-Edison Transportation Facilities and Cross Valley Canal. This Regulation Program is intended to provide a minimum recharge and return capability of 5,000 acre-feet annually.

E. This Agreement, through regulation and conservation of water supplies, is intended to (1) provide Valley with additional supplies of water and (ii) consistent with providing benefit to Valley also provide Kern Delta with access to new facilities, improved reliability of supplies and improve Kern Delta's ability to enhance groundwater conditions.

F. Consistent with the California Environmental Quality Act ("CEQA"), Kern Delta,

acting as lead agency, has completed an Environmental Impact Report concerning the Regulation Program. Kern Delta's Board of Directors, on November 12, 2002, considered, approved and certified the Final Environmental Impact Report ("FEIR"), as being in compliance with CEQA, and Valley's Board of Directors, acting as a responsible agency, on October 4, 2011,considered and approved a Notice of Exemption for the activities contemplated under this Agreement. A Notice of Determination to proceed with the Regulation Program was adopted by Kern Delta on November 12, 2002. In August 2011 Kern Delta prepared an addendum to the aforementioned EIR; this action is consistent with Kern Delta's 2002 Environmental Impact Report, which addresses the use of Kern Delta's existing and new recharge and conveyance facilities to enhance Kern Delta surface and groundwater supplies, (Exhibit E, Addendum to the FEIR).

G. The parties have relied upon various studies to make the following assumption upon which this Agreement is based: that, with existing facilities and wells along with the new facilities contemplated under this Agreement for the operation of the Regulation Program, it will be possible to regulate sufficient water in, and return sufficient water from, the groundwater basin for both Kern Delta's Normal and Customary Uses and Regulation Program purposes.

ARTICLE 1. DEFINITIONS

As used in this Agreement, each of the following terms shall have the respective meaning given to it in this Article 1 unless expressly stated to the contrary where such term is used.

1.1 "Account" means an account maintained by Kern Delta for the benefit of Valley pursuant to this Agreement in which Regulated Water, which is Delivered Water less losses deducted in accordance with Article 3 (Operational Losses), is credited upon delivery to the Point of Delivery to Kern Delta and is debited upon delivery to the Point of Delivery to Valley.

1.2 **"Account Balance"** means the difference between the credits and debits in the Account.

1.3 **"Agreement"** means, as of any particular time, this Agreement for a Water Management Program, as amended or supplemented by the Parties through that time.

1.4 **"Arvin-Edison Intake Canal"** means the Arvin-Edison Intake Canal owned and operated by the Arvin-Edison Water Storage District to the full extent of the capacity rights provided for in the Arvin-Edison MOU.

1.5 **"Arvin-Edison MOU"** means the agreement among Kern Delta with Arvin-Edison Water Storage District to use all or a portion of Arvin-Edison Transportation Facilities.

1.6 **"Arvin-Edison Transportation Facilities"** means Arvin-Edison Intake Canal, Forest Frick Pumping Plant, and all appurtenant facilities and structures as specified in the Arvin-Edison MOU.

1.7 **"Cross Valley Canal"** means the Cross Valley Canal owned and operated by the Kern County Water Agency to the full extent of Kern Delta's designated capacity (i.e., not including unused capacity of other participants) in the enlarged Cross Valley Canal as provided in the Cross Valley Canal Participation Agreement.

1.8 **"Cross Valley Canal Participation Agreement"** has the meaning provided for in this agreement, Recitals Section D.

1.9 **"Delivered Water"** means water which Valley makes available to Kern Delta at the Point of Delivery to Kern Delta pursuant to this Agreement.

1.10 **"Delivery Canal"** means (i) the Cross Valley Canal; and (ii) all interconnecting facilities from the Cross Valley Canal used to transport water to Kern Delta's service areas.

1.11 **"DWR"** means the Department of Water Resources of the State of California.

1.12 **"Effective Date"** means the date set forth on the first line of this Agreement

1.13 **"Execution Date"** means the date set forth on the first line of this Agreement.

1.14 **"Financial Account"** means the Account provided for in Section 5.1 (Put Payments).

1.15 **"KCWA"** means the Kern County Water Agency.

1.16 **"Kern Delta Basin"** means that portion of the southern San Joaquin Valley groundwater basin underlying the lands within the boundaries of Kern Delta.

1.17 **"Kern Delta Facilities"** means Kern Delta Regulation Program Facilities.

1.18 **"Kern Delta Regulation Program Facilities"** means Kern Delta Regulation Program Facilities.

1.19 **"Normal and Customary Uses"** means (i) deliveries to meet historic demands, as existing prior to Execution Date, of water users within Kern Delta's surface water service areas as provided at Subsection 4.2.2 of Section 4.2 (Conditions On Return of Regulated Water), (ii) historic transfers (including exchanges) and transfers similar to the type historically existing prior to Execution Date, entered into by Kern Delta with other entities, and (iii) operational conditions and criteria which would exist and/or be employed with or without the Regulation Program (for example spreading programs, energy load management, aquatic pest control and the like).

1.20 **"Participation Payment"** means the amount of money paid by Valley to Kern Delta for Delivered Water as full compensation for regulation program implementation costs (i.e., design, construction, inspection, administration and right of way) which amount is $40.00 per acre foot.

1.21 "Point of Delivery to Kern Delta" means the California Aqueduct turnout to the Cross Valley Canal; or other turnout mutually agreed upon by the parties such as the Arvin-Edison Transportation Facilities.

1.22 "Point of Delivery to Valley" means the California Aqueduct at/or between Reaches 12E and 14A, or any other point of delivery mutually agreed upon by the parties.

1.23 "Put Payment" means the Participation Payment and operation, maintenance and replacement costs determined on a per acre-foot basis, and energy cost in accordance with Section 5.1 (Put Payments) hereof.

1.24 "Regulated Water" means Delivered Water less losses deducted in accordance with Article 3 (Operational Losses), credited pursuant to Section 2.5 (Regulation of Water).

1.25 "Regulation Program" means the water management program provided for in this Agreement.

1.26 "Take Payment" means the amount of money paid by Valley to Kern Delta for each acre foot of Regulated Water returned to Valley pursuant to this Agreement, which amount is specified in Section 5.2 (Take Payments) hereof.

1.27 "Year" means a calendar year commencing on January 1 and ending on December 31.

ARTICLE 2. REGULATION OF WATER

2.1 Source of Water. Valley shall provide Delivered Water at the Point of Delivery to Kern Delta for regulation under this Agreement. All such Delivered Water (exclusive of losses) shall be credited to Valley's Account as Regulated Water. Delivered Water shall be of at least as good water quality as otherwise available from the California Aqueduct or as Kern Delta

would otherwise be able to accept for its own use.

2.2 Program Level. If requested by Valley, Kern Delta shall accept from Valley at the Point of Delivery to Kern Delta such a quantity of Delivered Water as will result in crediting to the Account 26,700 acre-feet (after losses determined pursuant to Article 3) of Regulated Water.

2.3 Priorities and Schedule For Regulation.

2.3.1 Kern Delta shall have first priority to utilize Kern Delta Facilities for the purpose of meeting Normal and Customary Uses. Regulation for Valley shall be second priority to the first priority.

2.3.2 Regulation program operations shall not cause a net decrease in supplies available to Kern Delta for its own purposes.

2.4 Scheduling of Delivered Water. Valley shall submit a schedule to Kern Delta for delivery of Delivered Water. Kern Delta, in conformity with Valley's schedule, shall be responsible for scheduling delivery of Delivered Water with KCWA and shall coordinate with KCWA on its resulting request to DWR for scheduling of Delivered Water. Valley shall provide written notice to Kern Delta of its intent to provide water for regulation pursuant to Section 2.6 (Deliveries).

2.5 Regulation of Water.

2.5.1 Kern Delta shall take control and possession of Delivered Water at the Point of Delivery to Kern Delta and shall credit the Account in an amount equal to the water so delivered less the deduction for losses provided for in Article 3 (Operational Losses) with respect to such water.

2.5.2 At the time Kern Delta credits the Account, pursuant to Subsection 2.5.1

of this Section 2.5 (Regulation of Water), legal title to such water, together with the right to withdraw from the Kern Delta Basin an amount sufficient to return to Valley the Regulated Water, shall vest in Kern Delta. Upon crediting Valley's Account, Kern Delta shall convey and cause to be regulated the water so credited. Kern Delta shall thereafter hold and return the Regulated Water as provided in Article 4 (Return of Water) of this Agreement.

2.5.3 Kern Delta shall accurately maintain the Account and prepare and maintain adequate supporting records. All records shall be subject to audit, review and approval by Valley at Valley's exercise upon reasonable notification to Kern Delta.

2.5.4 Valley acknowledges that Regulated Water may be commingled with other water. At all times during the term of this Agreement, there shall be in the Kern Delta Basin an amount at least equal to the amount of the Account Balance, which shall be deemed to be Regulated Water. Kern Delta shall be deemed to remove Regulated Water from storage only as and when requested by Valley pursuant to the terms of this Agreement, and any other removal of water by Kern Delta from the Kern Delta Basin shall be deemed to be the removal of water that is not Regulated Water.

2.6 Deliveries. Valley shall not be obligated to provide Delivered Water; but shall nevertheless use reasonable efforts to provide quantities of Delivered Water which, after losses pursuant to Article 3 (Operational Losses), shall result in Kern Delta crediting the minimum amounts of Regulated Water specified in Section 5.1 (Put Payments).

ARTICLE 3. OPERATIONAL LOSSES

Transportation losses, evaporation, metering discrepancies and any other losses of water, for purposes of this Agreement are collectively fixed to be eleven percent (11%) of the amount

of Delivered Water provided for the Regulation Program as measured at the Point of Delivery to Kern Delta. These losses are subject to modification in the future with the concurrence of both Parties. Any modifications shall only apply to deliveries made after the date of the modification and Account Balance shall not be adjusted as to previous Delivered Water and Regulated Water.

ARTICLE 4. RETURN OF WATER

4.1 Methods of Return of Regulated Water.

4.1.1 Kern Delta shall only be obligated to return Regulated Water so long as the return does not cause the Account Balance to be less than zero.

4.1.2 Upon request by Valley, Kern Delta shall deliver Regulated Water to Valley at the Point of Delivery to Valley by any one or more of the following methods: (i) an exchange of Regulated Water for SWP water in the California Aqueduct; (ii) an exchange of Regulated Water for other surface supplies, or with Valley's consent, groundwater deliverable to and into the California Aqueduct; (iii) the recovery of Regulated Water and delivery thereof to and into the California Aqueduct via existing or new Kern Delta facilities; or (iv) any other means mutually acceptable to the Parties.

4.1.3 In utilizing the methods specified in Subsection 4.1.2(ii) and (iv) of Section 4.1 (Methods of Return of Regulated Water), Kern Delta may propose to exchange Valley's Regulated Water for an equal amount of water from other sources which Kern Delta elects to make available in the California Aqueduct. Kern Delta will be deemed to have affected such an exchange by delivering such water to Valley at the Point of Delivery to Valley.

4.1.4 Kern Delta, upon request of Valley, and subject to the conditions at Sections 4.2 (Conditions On Return of Regulated Water) through 4.4 (Water Quality), shall

return up to 5,000 acre-feet of Regulated Water per year, subject to Section 4.2.3.

4.2 Conditions on Return of Regulated Water. The return of Regulated Water by Kern Delta to Valley shall be subject to the following terms and conditions:

4.2.1 Except as otherwise provided for in Section 8.1 (Regulation Program), for each acre-foot of Regulated Water held by Kern Delta for Valley, Kern Delta shall ultimately return one acre-foot of water to Valley.

4.2.2 Return of Regulated Water by Kern Delta shall not interfere with Normal and Customary Uses by Kern Delta of its available water supplies. Kern Delta may modify from time to time its service area. Any such modifications shall not interfere with Kern Delta's ability to deliver Regulated Water to Valley unless consented to in writing by Valley.

4.2.3 Notwithstanding any other provision of this Agreement, Kern Delta may temporarily reduce or terminate groundwater pumping for the purpose of returning Regulated Water to Valley to (i) ensure that the groundwater basin underlying Kern Delta is protected (to the maximum extent practicable), (ii) ensure that Valley's Account Balance does not become negative, (iii) ensure that the project facilities are physically capable of returning banked water either through exchange or directly, to the California Aqueduct, and (iv) protect Kern Delta's groundwater basin in regards to an extended drought. However, such reduction or termination shall only be temporary and Kern Delta shall, with Valley's approval, adjust the scheduling of groundwater pumping to mitigate reductions in return of Regulated Water and to the extent practical, in a manner that does not cause additional unreimbursed costs to Kern Delta, Kern Delta shall take measures to change the timing and location of pumping to avoid reduction in or termination of the return of Regulated Water or return other available supplies.

4.2.4 The Regulation Program shall not adversely affect Kern Delta's existing

exchanges with other parties.

4.3 Annual Scheduling of Regulated Water. Valley shall notify Kern Delta of its intent to take delivery of Regulated Water at a Point of Delivery to Valley as early in the Year as possible, but no later than March 15 of the same Year. If such notification is provided after March 15 Kern Delta shall, in good faith, endeavor to comply with the notice to the maximum extent feasible. Kern Delta shall be responsible for all necessary approvals to return the Regulated Water to the Point of Delivery to Valley. Valley shall be responsible for any necessary approvals and costs once the Regulated Water has been returned to the Point of Delivery to Valley, provided that Kern Delta shall cooperate in obtaining such approvals.

4.4 Water Quality.

4.4.1 Based on available data, the parties have concluded that Kern Delta currently can supply Regulated Water at the California Aqueduct which meets existing Safe Drinking Water Act primary and secondary standards. (The foregoing is only a reference to an existing standard and shall not be interpreted as causing Kern Delta to become subject to the Safe Drinking Water Act.) Subject only to Kern Delta obligations under contracts or agreements existing as of Execution Date, Kern Delta shall take no direct action that would knowingly cause the quality of recovered groundwater returned as Regulated Water to not meet the existing or reasonably predictable future Safe Drinking Water primary and secondary standards. Should Kern Delta knowingly take such impermissible direct action which causes the quality of Regulated Water delivered into the California Aqueduct to not meet existing or reasonably predictable future Safe Drinking Water Act primary and secondary standards, Kern Delta shall be responsible for taking additional steps, at Kern Delta's expense, to ensure that such water meets such standards. The preceding sentence shall not apply to delivery of water under Kern

Delta's Normal and Customary Uses or water quality degraded as a result of operating under this Program. In the event that future water quality standards change, or the quality of groundwater from Kern Delta wells or surface water is such that Kern Delta cannot meet acceptable standards for direct pumpback of Regulated Water into the California Aqueduct, Regulated Water shall be returned to Valley by alternative methods satisfactory to Valley. Such alternative methods may include, but are not necessarily limited to: purchases, exchanges with others, and/or by improving Regulated Water quality to acceptable standards for direct pumpback, with the additional costs of any such methods being paid by Valley. Kern Delta's operations and financial situation shall not be adversely impacted as a result of these alternative methods.

4.4.2 Without limiting the foregoing, Kern Delta shall rotate pumping if and to the extent necessary to maximize Regulated Water quality and to use the best quality wells available, to the greatest extent practicable, for Regulated Water return purposes.

ARTICLE 5. COMPENSATION

5.1 Put Payments. Valley shall pay Kern Delta for each acre foot of Delivered Water a Put Payment which shall consist of; (i) a Participation Payment, plus (ii) an amount equal to actual costs per acre foot of operation, maintenance and replacement of Kern Delta Facilities used to regulate Delivered Water determined in accordance with Section 5.5 (OM&R Fees); plus (iii) an amount sufficient to pay all energy costs associated with the delivery, distribution, and recharge of each acre foot of Delivered Water determined in accordance with Section 5.4 (Power & Energy Costs).

5.2 Take Payments. For each acre foot of Regulated Water returned by Kern Delta to Valley, whether by recovery from the Kern Delta Basin or by exchange, Valley shall pay to

Kern Delta a Take Payment equal to the sum of the following components: (i) $47.00 adjusted pursuant to Subsection 5.3 (Adjustment of Rates) from the Effective Date; plus (ii) an amount equal to actual costs per acre foot of operation, maintenance, repair and replacement of Kern Delta Facilities used to provide Regulated Water to Valley calculated as set forth in Section 5.5 (OM&R Fees) below; plus (iii) an amount sufficient to pay all energy costs associated with the delivery of each acre foot of Regulated Water to Valley calculated as set forth in Section 5.4 (Power & Energy Costs) below.

5.3 Adjustment of Rates. The amount payable for a calendar year under Section 5.1 and Section 5.2 shall be adjusted commencing December 1 of each year commencing 2011 for the following year by the fraction of the numerator of which is the Consumer Price Index, All Urban Consumers, All Items Index, Western Cities with populations of 50,000 to 330,000 (the "CPI") for December of the Year immediately preceding the Year with respect to which the adjusted amount is being determined and the denominator of which shall be the CPI for 2010 (based on the 1982-84 index).

5.4 Power & Energy Costs.

5.4.1 The Put Payment component as specified in Section 5.1 to convey Delivered Water from Kern Delta's Point of Delivery to Spreading Facilities or in lieu delivery points shall be an amount sufficient to pay all energy costs associated with the delivery, distribution, and recharge of each acre foot of Delivered Water. Take Payment component specified in Subsection 5.2 shall be determined by calculating the average unit power and energy costs to pump Regulated Water from the Kern Delta Basin for either direct delivery to the California Aqueduct or for entitlement exchange, and to convey Regulated Water through the distribution system and to deliver such water into the California Aqueduct. Said power costs

shall be computed based on the amount of energy consumed to pump, withdraw, transport, and when applicable to convey to the California Aqueduct Valley's Regulated Water in a given Year multiplied by Kern Delta's average actual unit power cost for that period.

5.4.2 The initial calculation of energy costs shall be consistent with the calculation shown in the table included in Exhibit "B-1," (Methodology for Determining Energy Requirements) and incorporated herein by this reference. The Table 2 (Energy Analysis Results) in Exhibit B-1 may be revised from time to time by written consent of the Parties, which consent shall not be unreasonably withheld. The intent of Exhibit B-1 is to provide Kern Delta with sufficient revenue to recover the power costs incurred by Kern Delta for transportation, regulation and withdrawal of Delivered and Regulated Water and to allow Kern Delta flexibility to change the calculation based on experience and the changing electric utility industry and possible changes in its power supply and transmission contracts.

5.5 OM&R Fees. For each acre-foot of Delivered Water or Regulated Water, whether conveyed directly by Kern Delta or by exchange, Valley shall pay to Kern Delta the applicable operation, maintenance and replacement fee ("OM&R fee") based on the following rates which are to approximate Kern Delta's actual OM&R and administrative costs to perform the functions listed. The methodology for determining such costs is included in Exhibit "B-2" (Methodology for Determining O&M Costs and Replacement Cost) attached hereto and incorporated herein by this reference.

5.5.1 Spreading (Either direct recharge or in-lieu or exchange) OM&R Fee of $3.52 per acre-foot of Delivered Water regulated for Valley.

5.5.2 Extraction (Either direct pumping or in-lieu or exchange) OM&R Fee of $8.20 per acre-foot of Regulated Water delivered to Valley upon return of Regulated Water.

5.5.3 Conveyance (Either directly conveyed or exchange) OM&R Fee of $19.88 per acre-foot of Delivered Water (upon delivery into storage), and $12.88 per acre-foot of Regulated Water (upon return of Regulated Water).

5.5.4 Commencing December of the first full year following Execution Date, each OM&R Fee provided for in this Section 5.5 (OM&R Fees) shall be adjusted for the following year by the fraction of the numerator of which is the Consumer Price Index, All Urban Consumers, All Items Index, Western Cities with populations of 50,000 to 330,000 (the "CPI") for December of the Year immediately preceding the Year with respect to which the adjusted amount is being determined and the denominator of which shall be the CPI for 2010 (based on the 1982-84 index). In lieu of the aforesaid adjustment for each of the sixth and subsequent fifth full years ("Methodology Adjustment Years") following Execution Date, each OM&R Fee provided for in this Section 5.5 (OM&R Fees) shall be subject to the Methodology Adjustment, which shall utilize the applicable methodology provided for in Exhibit B-2 (Methodology for Determining O&M Costs and Replacement Costs). For purposes of calculating adjustments in years between Methodology Adjustment Years, the OM&R Fee determined for the previous Methodology Adjustment Year shall be utilized for adjustments until the next succeeding Methodology Adjustment Year.

5.6 State Project Costs. For all Regulated Water returned by Kern Delta pursuant to Subsection 4.1.2 of Section 4.1 (Methods of Return of Regulated Water), Valley shall pay applicable State Water Project costs beyond the Point of Delivery to Valley.

5.7 Payment Schedule. For payment obligations incurred pursuant to Participation Payments; Sections 5.1 (Put Payments); 5.2 (Take Payments); 5.4 (Power & Energy Costs); and 5.5 (OM&R Fees), Kern Delta may only bill Valley for water previously credited or debited to

Account pursuant to this Agreement. In all events, Kern Delta may only bill Valley, no more frequently than monthly for payments under this Agreement which payments shall be due Kern Delta and shall become delinquent thirty (30) days after Valley receives the invoice under the terms of this Agreement. Data supporting the amounts invoiced shall be provided upon the request of Valley. Kern Delta shall correct any erroneous billing promptly upon discovery of the error. If Valley has been underbilled, payment of the underbilled amount, together with interest thereon at the average investment yield of Valley's investments as reported monthly by Valley's Treasurer, shall be due and become delinquent thirty (30) days after Valley receives the corrective invoice and data justifying the change. Correction of overpayments by Valley shall become delinquent unless refunded by Kern Delta to Valley within forty-five days of discovery by either Valley or Kern Delta, together with interest thereon computed from the date the overpayment was made at the average investment yield of Valley's investments as reported monthly by Valley's Treasurer.

5.8 Delinquencies. In addition to other amounts payable, delinquencies shall bear interest at the rate of one percent (1%) per month.

ARTICLE 6. DIVISION OF RISK RESPONSIBILITIES

Kern Delta and Valley agree to cooperate, in reducing, to the greatest extent practicable, the risk from claims arising against any of the Parties from implementation of this Agreement. In the event of claims by third parties relating to this Agreement, the responsibilities of Kern Delta, and Valley shall be divided as follows:

6.1 Kern Delta Responsibilities. Kern Delta shall defend, indemnify and hold harmless Valley and its directors, officers, agents, employees and volunteers against any and all

losses, claims, demands and causes of action (herein collectively referred to as "claims") and shall assume responsibility for payment of any settlements, judgments, costs and attorneys' fees arising from claims concerning the following:

(a) Control, carriage, transportation, handling, use, disposal, or distribution of Delivered, Regulated or Transported Water from the Point of Delivery to Kern Delta and to the Point of Delivery to Valley;

(b) Any contest or dispute by any landowner or water user within the service area of, or otherwise served by, Kern Delta concerning the allocation of benefits among or the assessment of charges to Kern Delta landowners or water users;

(c) Construction, repair, modification, or replacement of any Regulation Program Facilities;

(d) Operation of the Regulation Program or Kern Delta Facilities or the actions of Kern Delta's officers, employees or agents; and

(e) Any other activities under the exclusive control of Kern Delta. If Valley is named in any such action, it may submit its defense to Kern Delta, which shall bear the full cost of defense, except to the extent that Valley utilizes its own counsel for such defense. Notwithstanding the foregoing, the responsibility for any claims challenging the validity, underlying authority or enforceability of the Regulation Program under this Agreement shall be as provided at Section 6.3 (Other Claims). Valley shall not be entitled to any indemnification from Kern Delta except as set forth in this Section 6.1 (Kern Delta Responsibilities).

6.2 Valley Responsibilities. Valley shall defend, indemnify and hold harmless Kern Delta and its respective directors, officers, agents, employees and volunteers, against any and all claims and shall assume responsibility for payment of any settlements, judgments, costs or

attorneys' fees arising from claims concerning the following:

(a) Control, transportation, handling, use, disposal or distribution of Delivered Water to the Point of Delivery to Kern Delta and Regulated Water from the Point of Delivery to Valley;

(b) Any claim by a landowner, resident, public agency or other entity within the service area of, or otherwise served by, Valley challenging the Regulation Program or this Agreement directly or indirectly;

(c) Construction, repair, modification or replacement of any of the facilities of Valley, or the State Water Project;

(d) Operation of the facilities of or the actions of the officers, employees or agents of Valley; and

(e) Any other activities under the exclusive control of Valley.

If Kern Delta is named in any such action, it may submit its defense to Valley involved, in which event Valley shall bear the full cost of defense, except to the extent Kern Delta utilizes its own counsel for such defense. Notwithstanding the foregoing, the responsibility for any claims challenging the validity, underlying authority or enforceability of the Program under this Agreement shall be as provided at Section 6.3 (Other Claims). Kern Delta shall not be entitled to any indemnification from Valley except as set forth in this Section 6.2 (Valley Responsibilities).

6.3 Other Claims. As for any claims by a third party with respect to the Regulation Program which are not otherwise provided for at Sections 6.1 (Kern Delta Responsibilities) or 6.2 (Valley Responsibilities), including any claims challenging the underlying authority for or the validity or enforceability of the Regulation Program under this Agreement, Valley shall be responsible for payment of any settlements it has approved or any judgments with respect to such claims. If Kern Delta is named in any action with respect to such a claim, it may submit its

defense to Valley and Valley shall bear the full cost of defense, except to the extent Kern Delta utilizes its own counsel for such defense. At the request of Valley, Kern Delta shall join in the defense of any claim which is not adverse to Kern Delta's water supply or financial interests, in which case Valley shall reimburse Kern Delta for all of its costs of defense. However, with respect to claims in which one or more of the plaintiffs resides or does business in Kern County challenging the recovery of groundwater under this Agreement, Valley may demand that Kern Delta join in the defense of claims. In such case, Kern Delta must comply with any such demand, the Parties shall jointly manage the litigation, and Kern Delta and Valley shall each pay one-half of the defense costs. In other such cases, Valley shall reimburse Kern Delta for all of its costs of defense.

6.4 Multiple Claims. In the event that payments are made in settlement of a claim, in satisfaction of a judgment or for defense costs where the claim arises from issues applying to both Kern Delta and Valley, payments shall be divided in proportion to the relative liability of each arising from the common claim. If the Parties cannot agree on the proportion, then the share to be paid by each of Kern Delta and Valley shall be submitted to arbitration as provided at Article 7 hereof.

ARTICLE 7. DISPUTE RESOLUTION

7.1 Informal Mediation. In the event of a dispute regarding the interpretation or implementation of this Agreement, or if the parties are unable to agree upon a matter as to which their agreement is provided for hereunder, the Parties will endeavor to resolve the dispute by using the services of a mutually acceptable consultant. The fees and expenses of the consultant shall be shared equally by the Parties.

7.2 Arbitration.

7.2.1 If a consultant cannot be agreed upon, or if the consultant's recommendations are not acceptable to the Parties, and unless the Parties otherwise agree, the matter shall be resolved by arbitration as provided in this Article 7 and in the California Arbitration Act (Part 3 [commencing with § 1280], Tit. 9, Calif. Code Civ. Proc.), including Section 1283.05. The Parties agree to be bound by the majority decision of a three-member panel to be selected as follows: (i) one member shall be selected by Valley; (ii) one member shall be selected by Kern Delta; and (iii) the third member shall be selected by the other two (2) members. If the two (2) members selected by Valley and Kern Delta are unable to agree on the selection of a third member, either Party may petition a court to appoint the third member pursuant to Code of Civil Procedure Section 1281.6. Each Party shall be responsible for any fees and expenses of the member of the panel appointed by that Party, and the fees and expenses of the third member of the panel shall be shared fifty percent (50%) by Kern Delta and fifty percent (50%) by Valley.

7.2.2 If a Party asserts that another Party has breached obligations under this Agreement, it may request that the arbitration panel order the other Party to comply with this Agreement. Upon the panel finding that a Party has in fact breached this Agreement, the panel shall order compliance. The panel may order any other equitable relief permitted by California law, including declaratory or injunctive relief, applicable to the matter before the panel for resolution. If termination is sought by a party pursuant to the terms hereof, the panel may determine the issues of whether a default has occurred or other condition precedent to the termination alleged has been satisfied and, if so, may issue orders implementing that termination. The orders of the panel shall be judicially enforceable. The panel may order that the effective

date of its order be the date of the breach, if appropriate. If Valley has suspended payments as provided in Subsection 9.1.2 of Section 9.1 (Remedies in the Event of Kern Delta's Willful Failure to Perform), it shall reimburse Kern Delta for any monies withheld and then due to Kern Delta as soon as Kern Delta again fully complies with this Agreement unless otherwise ordered by the panel. The panel may not order any damages (including consequential or punitive damages) beyond those provided for or permitted under this Agreement.

ARTICLE 8 TERM OF AGREEMENT

8.1 Regulation Program. Unless the Regulation Program provisions of this Agreement are earlier terminated pursuant to Subsection 9.1.3 of Section 9.1 (Remedies in the Event of Kern Delta's Willful Failure to Perform), Section 9.2 (Remedies in the Event of Valley's Voluntary Failure to Perform), Section 9.3 (Remedies in Event of Failure of Certain Other Remedies), or Section 10.2 (Involuntary Termination), Valley's right to provide Delivered Water pursuant to Section 2.1 (Source of Water) and to receive Regulated Water pursuant to Article 4 (Return of Water) shall terminate at the end of 2035. At the end of 2035, the entire Account Balance shall be debited and the remaining Regulated Water, if any, shall be available for Kern Delta to utilize for its own purposes.

8.2 Agreement Termination. This Agreement shall terminate at the time of termination of both the Regulation Program unless extended pursuant to Section 8.3 (Pending and Late Arising Claims).

8.3 Pending and Late Arising Claims. If a claim arising under or with respect to one or more terms of this Agreement has not been resolved when such term terminates, or if such a claim is brought after this Agreement has terminated but within the period of time for bringing

such a claim under California law ("Late Arising Claim"), the provisions of this Agreement shall continue in full force and effect for such additional period of time as is necessary to resolve such claims and to satisfy the rights and obligations of the Parties hereto with respect thereto.

8.4 Renewals of Agreement. This Agreement may be renewed by mutual agreement of the Parties, which renewal shall, unless otherwise agreed, effect a continuation of both parties' rights and duties under this Agreement.

ARTICLE 9. REMEDIES

9.1 Remedies in the Event of Kern Delta's Willful Failure to Perform.

9.1.1 If Valley alleges that Kern Delta has not substantially performed according to the terms of this Agreement or has willfully failed to perform this Agreement by causing (or, if within Kern Delta's jurisdiction, permitting) other entities or persons to interfere with Regulation Program operation, or by failing to accept or return water as and when required by this Agreement, or if Kern Delta has otherwise breached its obligations under this Agreement and notice has been provided to Kern Delta pursuant to Section 11.4 (Waiver/Cure of Defaults) and Kern Delta has failed to cure the alleged breach within the time provided in Section 11.4 (Waiver/Cure of Defaults), Valley may, at any time thereafter while the default is continuing, advise Kern Delta of the remedy or remedies provided in Article 7 (Dispute Resolution), and Subsections 9.1.2 and 9.1.3 below which Valley intends to pursue with respect to such default. Kern Delta may challenge at any time, through Article 7 (Dispute Resolution), whether in fact there has been a breach of or default under this Agreement by Kern Delta.

9.1.2 In the event of an alleged breach as to which Valley has given notice to Kern Delta pursuant to Section 9.1.1, Valley may elect to suspend any payment obligations it

may have under Article 5 (Compensation) of this Agreement until Kern Delta complies with the terms of this Agreement and cures such breach or default, or is determined, pursuant to Article 7 (Dispute Resolution), not to have violated the Agreement. Notwithstanding such suspension of Valley's payment obligations, this Agreement shall remain in effect unless and until Valley elects to terminate the Agreement under Section 9.1.3 in which case termination shall occur in accordance with and as provided in such provision. Notwithstanding an election by Valley under this Section 9.1.2 to suspend payment obligations, Valley or Kern Delta may thereafter also seek relief under Article 7 (Dispute Resolution).

9.1.3 If Kern Delta willfully fails to recharge or return water for or to Valley under circumstances where such performance or nonperformance is not excused by the terms of this Agreement and Valley elects to terminate this Agreement, Kern Delta shall purchase the amount of Valley's Regulated Water in its Account Balance for an amount equal to Valley's previous payments with respect to such Regulated Water, all adjusted as provided in Section 5.5.2, all payable within one (1) year of said election by Valley to terminate. Once such payment has been fully made, this Agreement shall be fully terminated except for Preamble; Recitals; Articles 1 (Definitions); 7 (Dispute Resolution); 8 (Term of Agreement); 9 (Remedies); and 11 (Miscellaneous Provisions). Upon payment in full by Kern Delta as provided above, Valley's beneficial interest in the amount of Regulated Water in Valley's Account Balance shall vest in Kern Delta free of obligations and Kern Delta shall be entitled to produce and use such water for its own account.

9.2 Remedies in the Event of Valley's Voluntary Failure to Perform. If Valley has not substantially performed according to the terms of this Agreement, and notice has been provided to Valley pursuant to Section 11.4 (Waiver/Cure of Defaults) and Valley has failed to

cure the alleged breach within the time provided in Section 11.4 (Waiver/Cure of Defaults), Kern Delta may at its election, at any time thereafter while the default is continuing, either (i) suspend further performance and thereafter seek relief under Article 7 (Dispute Resolution), recommencing performance once Valley complies with the Agreement, or (ii) terminate this Agreement. If Kern Delta elects to terminate this Agreement, any Regulated Water remaining in Valley's Account shall be transferred to Kern Delta at no cost to Kern Delta. In such event, Kern Delta shall have no further responsibility for repayment of funds advanced by Valley under Article 5 (Compensation). Valley may challenge at any time, through Article 8 (Dispute Resolution), whether in fact there has been a breach of this Agreement by Valley.

9.3 Remedies in Event of Failure of Certain Other Remedies. If: (i) Kern Delta has breached or defaulted in the performance of its obligations under this Agreement, and (ii) Valley has given notice of the breach or default pursuant to Subsection 9.1.1 of Section 9.1 (Remedies in the Event of Kern Delta's Willful Failure to Perform), and (iii) Kern Delta has failed to cure that breach or default within thirty (30) days as required by Section 11.4 (Waiver/Cure of Defaults), and (iv) Valley has elected a remedy for that breach or default pursuant to Subsection 9.1.1 of Section 9.1 (Remedies in the Event of Kern Delta's Willful Failure to Perform), and (v) Kern Delta has agreed to such remedy or, if Kern Delta has not so agreed, Valley has obtained a judgment or court order against Kern Delta (whether based on an order of an arbitration panel under Article 7 (Dispute Resolution) or otherwise) which judgment or court order Kern Delta has failed or refused to perform, *then* Valley may notify Kern Delta that Valley is entitled to and intends to exercise its right to appointment of a successor in place of Kern Delta and, thereafter, Valley may apply to a court of competent jurisdiction for such appointment of a successor who shall be charged with performing the duties pursuant to the

terms of this Agreement. The successor, when appointed, shall be entitled to exercise any and all rights theretofore held by Kern Delta for Valley. Upon the later of (i) receipt by Valley at the California Aqueduct of water in an amount equal to Valley's Account Balance pursuant to the exercise by such successor of its rights, or (ii) expiration of the term specified in Section 8 (Term of Agreement), this Agreement shall be fully terminated unless extended pursuant to Section 8.4 (Pending and Late Arising Claims).

ARTICLE 10. EARLY TERMINATION

10.1 Resignation of Kern Delta. Kern Delta may not resign its duties and obligations under this Agreement for the term of this Agreement except as permitted by Sections 9.2 (Remedies in the Event of Valley's Voluntary Failure to Perform) and 10.2 (Involuntary Termination), and any other attempt by Kern Delta to resign shall be deemed to be a breach of its obligations hereunder.

10.2 Involuntary Termination. Notwithstanding Article 9 (Remedies), in the event that Kern Delta is unable to perform its obligations under this Agreement for reasons beyond its control, the following shall apply ("reasons beyond its control" as used in this sentence shall not include any reasons caused by Kern Delta's breach of its obligations under this Agreement or other failure to comply with any of its legal obligations).

10.2.1 If such inability to perform relates to the Regulation Program, and that inability to perform includes the inability of Kern Delta to return Regulated Water which remains in the Valley Account Balance, Kern Delta shall purchase the Regulated Water which Kern Delta is unable to return for an amount equal to the costs which Kern Delta would have incurred to purchase such water under its contract with the KCWA in the Year such Regulated Water was

delivered to storage. Such payment by Kern Delta to Valley upon involuntary termination under this Section 9.2 (Remedies in the Event of Valley's Voluntary Failure to Perform) shall be financed over time upon terms mutually agreeable to Valley and Kern Delta. If Valley and Kern Delta are unable to agree on such terms in a reasonable period of time, they shall resolve their disagreement pursuant to Article 7 (Dispute Resolution). Once such payments have been fully made, this Agreement shall be fully terminated. If payment is made as provided above, the beneficial interest in the amount of Valley's Regulated Water in Valley's Account Balance which Kern Delta is unable to return shall vest in Kern Delta.

ARTICLE 11. MISCELLANEOUS PROVISIONS

11.1 Successors and Assigns. This Agreement shall bind and inure to the benefit of the successors and assigns of the Parties; provided, however, neither Party shall assign any of their rights or obligations under this Agreement without the prior written consent of the other. Nothing in this Agreement is intended to confer any right or remedy under this Agreement on any person other than the parties to this Agreement and their respective successors and permitted assigns, or to relieve or discharge any obligation or liability of any person to any party to this Agreement, or to give any person any right of subrogation or action over or against any party to this Agreement.

11.2 No Precedent. Kern Delta entering into this Agreement shall not create in Valley any rights beyond those expressly provided by this Agreement, nor shall it establish any precedent for extension or renewal of this Agreement beyond its term. Furthermore, Valley shall not make any claim to continued use of water provided under this Agreement, beyond that expressly provided under this Agreement, including, but not limited to, asserting any right

against Kern Delta to use of water beyond the term of this Agreement under the doctrine of intervening public use.

11.3 No Modification of Existing Contracts. This Agreement shall not be interpreted to modify the terms or conditions of either the water supply contracts between DWR and Valley or the water supply and related agreements between Kern Delta and other parties.

11.4 Waiver/Cure of Defaults. The failure of any Party to enforce against the other a provision of this Agreement shall not constitute a waiver of that Party's right to enforce such a provision at a later time. No Party shall be deemed to be in default of any provision of this Agreement unless the other Party has given written notice specifically stating the alleged default and the Party in default fails to cure the default within thirty (30) days of receipt of such written notice.

11.5 Construction of Agreement. The language in all parts of this Agreement shall be in all cases construed simply according to its fair meaning and not strictly for or against any of the parties hereto and Section 1654 of the Civil Code has no application to interpretation of this Agreement. Headings at the beginning of Sections, paragraphs and subparagraphs of this Agreement are solely for the convenience of the Parties, are not a part of this Agreement and shall not be used in construing it. The preamble, recitals and all exhibits and schedules to this Agreement are part of this Agreement and are incorporated herein by this reference. When required by the context: whenever the singular number is used in this Agreement, the same shall include the plural, and the plural shall include the singular; and the masculine gender shall include the feminine and neuter genders and vice versa. Unless otherwise required by the context (or otherwise provided herein): the words "herein," "hereof" and "hereunder" and similar words shall refer to the Agreement generally and not merely to the provision in which such term

is used; the word "person" shall include individual, partnership, corporation, limited liability company, business trust, joint stock company, trust, unincorporated association, joint venture, governmental authority and other entity of whatever nature; each of the words "Valley" and "Kern Delta" shall include the respective representatives, successors and permitted assigns, if any, of such person; the words "including," "include" or "includes" shall be interpreted in a non-exclusive manner as though the words "but [is] not limited to" or "but without limiting the generality of the foregoing" immediately followed the same; the word "month" shall mean calendar month; and the term "business day" shall mean any day other than a Saturday, Sunday or legal holiday. If the day on which performance of any act or the occurrence of any event hereunder is due is not a business day, the time when such performance or occurrence shall be due shall be the first business day occurring after the day on which performance or occurrence would otherwise be due hereunder. All times provided in this Agreement for the performance of any act will be strictly construed, time being of the essence of this Agreement.

11.6 Entire Agreement. This Agreement and other documents expressly referenced herein constitute the entire agreement between the Parties pertaining to the matters provided for herein and, except as herein provided, supersedes all prior and/or contemporaneous agreements and understanding, whether written or oral, pertaining between the Parties relating to the matters provided for herein. In the event of inconsistency between and among (i) other documents, (ii) Exhibits to this Agreement, and (iii) the remaining provisions of this Agreement, the remaining provisions of this Agreement shall control.

11.7 Severability. In the event that a court of competent jurisdiction or an arbitration panel as provided at Article 7 (Dispute Resolution) determines that a provision included in this Agreement is legally invalid or unenforceable and such decision becomes final, the Parties to this

Agreement shall use their best efforts to (i) within thirty (30) days of the date of such final decision identify by mutual agreement the provisions of this Agreement which must be revised, and (ii) within three (3) months thereafter promptly agree on the appropriate revision(s). The time periods specified above may be extended by mutual agreement of the Parties. Pending the completion of the actions designated above, to the extent it is reasonably practical and can be done without violating any applicable provisions of law, the provisions of this Agreement which were not found to be legally invalid or unenforceable in the final decision shall continue in effect. If the Parties cannot agree on appropriate revisions, this Agreement shall be involuntarily terminated in accordance with Section 9.2 (Remedies in the Event of Valley's Voluntary Failure to Perform).

11.8 Force Majeure. All obligations of the Parties other than monetary or payment obligations shall be suspended for so long as and to the extent the performance thereof is prevented, directly or indirectly, not to exceed one year, by earthquakes, fires, tornadoes, facility failures, floods, strikes, other casualties, acts of God, orders of court or governmental agencies having competent jurisdiction, or other events or causes beyond the control of the Parties. In no event shall any liability accrue against a Party, to its officers, agents or employees, for any damage arising out of or connected with a suspension of performance pursuant to this Section 11.8. All time limits to perform and the term of the Agreement shall be extended by period equivalent to the length of suspension. In event of such an occurrence of duration in excess of one year, Section 10.2 (Involuntary Termination) shall control, unless the Parties otherwise agree.

11.9 Notices. All notices, requests and demands hereunder ("Notices") shall be in writing and shall be deemed to have been duly given when delivered (or, if mailed, postage

prepaid, on the third business day after mailing, if that date is earlier than actual delivery). Notices shall be sent to a Party at the address of that Party set forth below or, if such Party has furnished notice of a change of that address as herein provided, to the address of that Party most recently so furnished. Notices for Kern Delta shall be sent to the Engineer Manager of Kern Delta at 501 Taft Highway, Bakersfield, CA 93307-6247. Notices for Valley shall be sent to the General Manager of Valley at 380 East Vanderbilt Way, San Bernardino 92408. Each Party hereto (a "Recipient") who receives from another Party hereto (a "Sender") by electronic facsimile transmission (telecopier) any writing which appears to be signed by that Sender is authorized to rely and act upon that writing in the same manner as if the original signed writing was in the possession of the Recipient upon oral confirmation of that Sender to the Recipient that the writing was signed by that Sender and is intended by that Sender to be relied upon by the Recipient. Each Party transmitting any writing to any other Party by electronic facsimile transmission agrees to forward immediately to that Recipient, by expedited means (for next day delivery, if possible), or by first class mail if the Recipient so agrees, the signed hard copy of that writing, unless the Recipient expressly agrees to some other disposition of the original by the Sender.

11.10 Regulatory Changes. It is recognized that changes in Kern Delta's actual costs of operating the Regulation Program or changes in other conditions affecting the Regulation Program may occur on or after the date this Agreement is executed as a result of enactments, amendments, changes in implementation or interpretation, or repeal of any federal or state law, rule, regulation or ordinance or changes in contract terms (each, a "Regulatory Change"). If either Party determines that a Regulatory Change has occurred that would result in a material change (upward or downward) in Kern Delta's costs or other conditions relating to regulating,

recovering or transporting water pursuant to the terms of this Agreement, which change is not reflected in the adjustments in the payments due from Valley to Kern Delta pursuant to Article 5 (Compensation) or other provision of this Agreement, such Party shall promptly inform the other Party of the nature and extent of such alleged Regulatory Change and of the reason why that party believes an adjustment pursuant to this Section 11.10 is warranted in the payments due from Valley to Kern Delta or in other terms or conditions. The Parties will thereupon attempt to reach an appropriate amendment of this Agreement in light of the Regulatory Change. If such agreement cannot be reached within forty-five (45) days after either Party has provided the required notice and information, the matter shall be resolved pursuant to Article 7 (Dispute Resolution), the qualified third party or arbitration panel being charged with determining (i) whether a Regulatory Change has occurred (if that is in dispute), (ii) the amount of change, if any, in Kern Delta's costs resulting from the Regulatory Change, and (iii) the manner in which the payments due from Valley to Kern Delta or other terms or conditions which should be modified are to be adjusted to fairly and equitably reflect that change in Kern Delta's costs or other terms and conditions (it being the intent of the Parties that no windfall or unwarranted compensation or benefit should result to any Party as a result of any adjustment made pursuant to this Section 11.10). Any adjustment to the payments due from Valley to Kern Delta or other terms and conditions made pursuant to this Section 11.10 shall be effective as of the first day such Regulatory Change affects Kern Delta operations hereunder unless the Parties otherwise agree and may be reconsidered thereafter at any time, at the request of any Party, if the adjustment is unjustly under-compensating or over-compensating any Party.

11.11 Further Assurances. Each Party hereto, upon the request of the other, agrees to perform such further acts and to execute and deliver such other documents as are reasonably necessary to carry out the provisions of this instrument.

11.12 Counterparts. This Agreement, and any document or instrument entered into, given or made pursuant to this Agreement or authorized hereby, and any amendment or supplement thereto may be executed in two or more counterparts, and by each party on a separate counterpart, each of which, when executed and delivered, shall be an original and all of which together shall constitute one instrument, with the same force and effect as though all signatures appeared on a single document. Any signature page of this Agreement or of such an amendment, supplement, document or instrument may be detached from any counterpart without impairing the legal effect of any signatures thereon, and may be attached to another counterpart identical in form thereto but having attached to it one or more additional signature pages. In proving this Agreement or any such amendment, supplement, document or instrument, it shall not be necessary to produce or account for more than one counterpart thereof signed by the party against whom enforcement is sought.

Executed the day and year first hereinabove written.

THE SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By:_____
President

APPROVED AS TO FORM:

By:_____

General Counsel

KERN DELTA WATER DISTRICT

By:_____
President

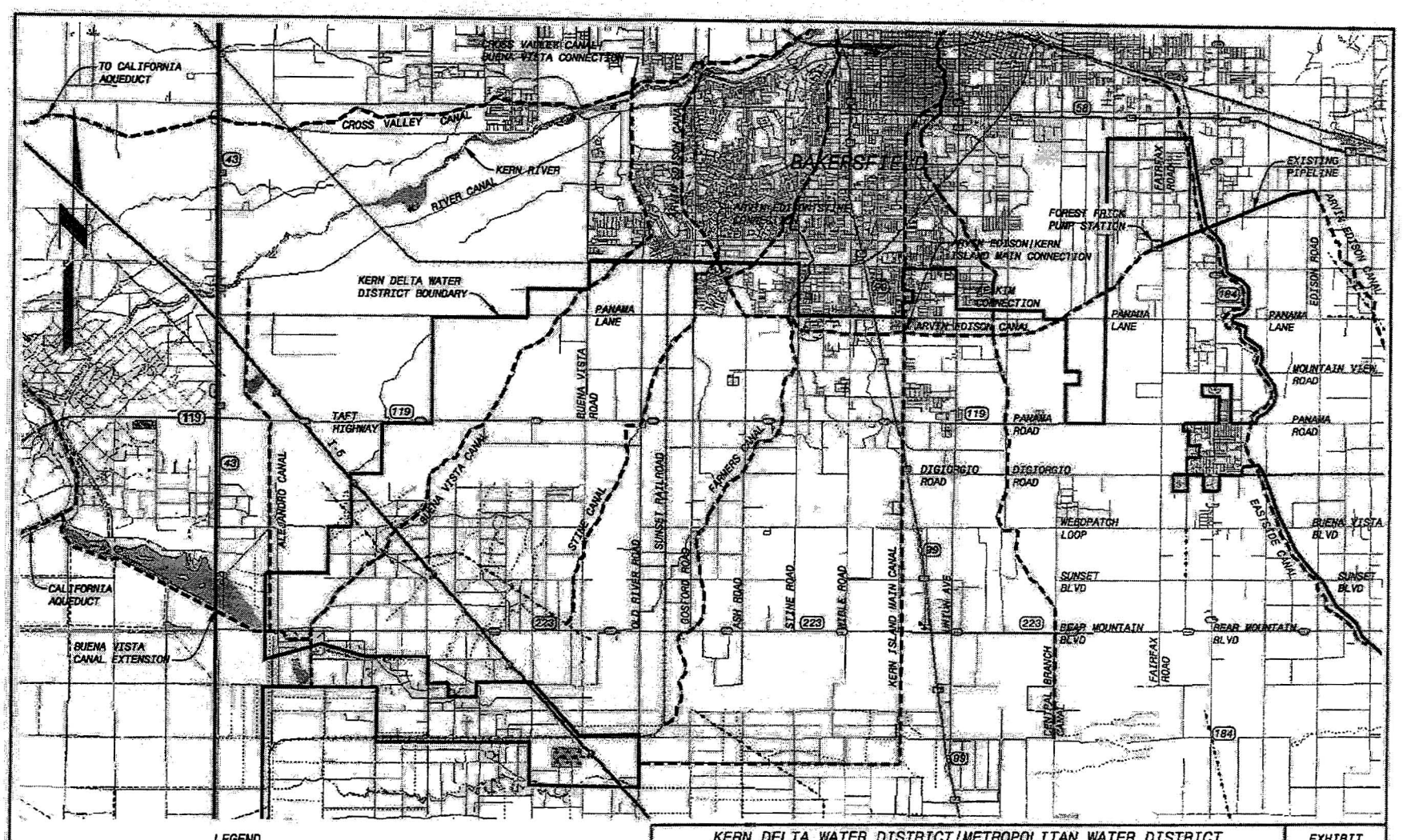
By:_____
Secretary

APPROVED AS TO FORM:

By:_____
General Counsel

Exhibits

A. Map Depicting Kern-Delta Boundaries and Program Facilities
B-1. Methodology for Determining Energy Requirements
B-2. Methodology for Determining O&M Costs and Replacement Cost
C. Certification That Conditions Precedent Have Been Satisfied or Waived
D. Map Depicting Kern Delta Boundaries and Program Facilities



KERN DELTA WATER DISTRICT/METROPOLITAN WATER DISTRICT
WATER MANAGEMENT PROGRAM

KERN DELTA BOUNDARIES AND PROGRAM FACILITIES

EXHIBIT

A

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EXHIBIT B-1

BLACK & VEATCH Corporation

METHODOLOGY FOR DETERMINING ENERGY REQUIREMENTS

Kern Delta Water District Water Banking Program
Water Banking Program

B&V Project 99241
B&V File D.2
January 11, 2002

To: L. Mark Mulkay
Project Manager

From: Steven N. Foellmi, P.E.
Technical Manager

Prepared By: Klint Reedy, P.E.
Victor Tsai

EXECUTIVE SUMMARY

PURPOSE

The purpose of this memorandum is to evaluate the energy requirements associated with the facilities required for the Kern Delta Water District Water (KDWD) Banking Program (Kern Delta Project). The estimated energy requirements associated with these facilities are based on Black & Veatch experience and record data from the operation of similar facilities by other local agencies. In addition to estimating the power requirements, a preliminary assessment of the existing local electrical distribution facilities ability to meet potential future operating demands are investigated.

BACKGROUND

As part of the Water Banking Program, five new pump stations (Kern Delta pump stations No.1 through 5) would be built along the new Kern Delta Canal to allow for conveyance of water between the Kern Water Bank Authority (KWBA) Canal and the Arvin-Edison Canal. The pumping plants would take water from a lower canal segment and lift it to the adjacent canal segment. During wet years, the proposed

Kern Delta canal system would allow for the diversion of water from the California Aqueduct to the Kern Delta agricultural canals and spreading basins.

An existing pump within the existing Arvin-Edison Forrest Frick Pump Station would also be used to meet irrigation demands in the eastern section of the Kern Delta service area through the in-lieu (pipeline) facilities. These facilities will allow the use of State Water Project (SWP) water.

The project would also include thirty-two groundwater wells to recover previously stored water in the groundwater basin. The extraction wells would be located near existing water conveyance facilities.

ENERGY ANALYSIS

The facilities requiring energy to operate the water-banking project include of five pumping stations along the proposed canal conveyance facility, thirty-two new groundwater wells which will be utilized to withdraw stored water supplies, and the existing Arvin-Edison Forrest Frick Pump Station will be used to provide SWP supplies to meet irrigation demands in lieu of current groundwater extraction operations. The canal pumping stations and groundwater extraction wells are planned as motor-operated pumps with electricity to be provided from the existing Pacific Gas and Electric Company (PG&E) facilities.

Energy Rate Schedules and Metering Requirements

Energy rate schedules have been obtained from PG&E for evaluation of the power and metering requirements relevant to the operation of the pumping stations and groundwater extraction wells. PG&E recommends using schedule AG-5B, "Large Time-of-Use Agricultural Power for the Water Banking facilities. Schedule AG-5B is used for customers with high annual operation (generally over 1,200 hours) who run 24 hours per day or can minimize electric use on sum weekdays between noon and 6 p.m.

Energy rates for this schedule vary by the summer or winter season and the time of day the energy is consumed. A seasonal demand charge and a maximum-peak-period demand charge, based on peak kW usage, is also exercised. In addition to these base charges, PG&E also has a flat surcharge rate of $0.02953/kWh in

accordance with the "Energy Procurement Surcharge Schedule (EPS)". This surcharge is applied after all other calculations are made and is applicable to all kW-hours consumed. Lastly, the customer's bill includes a customer charge, a meter charge, and a one-time installation and processing charge per meter.

A summary of the AG-5B / EPS rate schedule is provided in Table 1.

TABLE 1

PG&E "AG-5B/ EPS" RATE SCHEDULE

Charges	Summer Season (May – October)	Winter Season (November – April)
Energy Charge (per kWh per month)		
Peak (12 noon–6:00 p.m.) Mon.-Fri.*	$0.14294	-
Partial Peak (8:30 a.m.-12:00 p.m.) & (6:00 p.m.-9:30 p.m.) Mon.-Fri.*	-	$0.04661
Off-Peak	$0.04088	$0.03706
Demand Charges (per kW)		
Seasonal billing demand	$6.55	$4.40
Peak Period Demand	$2.70	-
Surcharges (per kWh)		
EPS Rate for AG-5B Schedule	$0.02953	$0.02953
Monthly Base Service Charges		
Customer Charge per meter	$16.00	$16.00
Meter Charge per month	$6.00	$6.00

* Except Holidays.

Energy Analysis Model Development and Methodology

A preliminary version of the energy model has been created in Microsoft Excel using a single workbook that incorporates several worksheets. The model estimates power requirements of the proposed Water Banking facilities based on user defined operating scenarios. The following input is required by the user to perform a simulation:

1. Number of pumps operating at the five existing canal pumping stations (1 or 2 pumps @ 100 cfs each).
2. Desired flowrate for the "in lieu" element of the program (typically 25 to 30 cfs).
3. Number of groundwater wells operating during withdraw operation in dry years (between 0 to 32 groundwater wells).

4. Define seasonal operating conditions for "storage" and "withdrawal" facilities (daily hours of operation).

The total dynamic lift of each groundwater well is estimated and assumed to be consistent for each well. Electrical horsepower is calculated from the total dynamic lift, flowrate, and the overall efficiency (pump and motor). Currently the overall efficiency is estimated and a single typical value is used. However, it is anticipated that record flow rates and power data will be available and the program will utilize specific efficiencies based on the record data.

The model estimates power requirements for each of the pumping facilities along the proposed canal conveyance facility. The output tabulates the daily, monthly, and yearly facility power requirements.

Model Assumptions

Currently, the following assumptions have been made for the pumping plant facilities:

1. Combined pump and motor efficiency is 75 percent for all pumps at all plants under all conditions.
2. Arvin-Edison Forrest Frick Pumping Station has an assumed 67 percent combined pump and motor efficiency.
3. Proposed canal pumping plants will deliver 100 cfs or 200 cfs. The model currently assumes that when a pump from a pumping station is taken off-line to accommodate decreased flows, a single pump is operating at all the other pumping stations.

The following assumptions have been made for the groundwater extraction wells:

1. Combined pump and motor efficiency is 75 percent for all groundwater pumps.
2. Since the design of the wells is at conceptual levels, the power supply requirements are calculated assuming a "typical" well, and then multiplied by the number of wells.
3. Due to the lack of specific detailed design, the length of well discharge pipeline is estimated in order to calculate losses for the "typical well".
4. Each of the wells will extract groundwater at a rate of 6.25 cfs.

5. Assume negligible groundwater level drop due to extraction.

Some of these assumptions will be modified or quantified after additional data is received.

Energy Analysis Results

Preliminary analysis has been completed assuming the facilities operate at 200 cfs, 24 hours per day, until 55,500 ac-ft is stored into the groundwater basin. The initial results are presented in the following table.

TABLE 2
ENERGY ANALYSIS RESULTS

	Storage Mode [1] [2] 1 cycle = 64,750 Ac-Ft [3]	Withdrawal Mode [4] 1 cycle = 55,500 Ac-Ft
Summer Costs		
$/month	$108,000	$615,000
$/cycle	$648,000	$3,690,000
$/ac-ft	$7	$49
Winter Costs		
$/month	$82,500	$445,000
$/cycle	$495,000	$2,660,000
$ /ac-ft	$5	$35

(1) Assumes canal facilities operate 24 hours per day, 7 days per week for 20 weeks, totaling 55,500 Ac-Ft.
(2) Assumes In-Lieu facilities operate during off-peak hours, totaling 9,250 Ac-Ft.
(3) 50,000 Ac-Ft storage + 9,250 Ft In-Lieu
(4) Assumes groundwater facilities operate 24 hours per day, 7 days per week.

The initial analysis estimated the electrical costs associated with operating the water banking program facilities 24 hours per day, 7 days per week. As presented in Table 1, significant savings maybe realized if the facilities were operated in a manner that minimizes peak demand charges.

CONCEPTUAL ELECTRICAL ARRANGEMENT

Based on the electrical demands estimated in the energy evaluation, conceptual one-line diagrams have been prepared for the canal pumping facilities and the groundwater pumping facilities and are attached for reference. An order of magnitude cost estimate was prepared for the new electrical equipment required between the existing PG&E 12 kV distribution power line and the pumping equipment, totaling $80,000 per site. This cost is generally accurate for both the groundwater wells and the canal pumping stations.

Typically, PG&E will install and maintain this equipment and will recover the costs in the monthly billings. Alternatively, the KDWD can install and maintain the facilities between the main distribution power line and the pumping facilities and be eligible for a "voltage discount" within their rate. Upon preliminary investigation, it is recommended that KDWD have PG&E provide, install, and maintain these facilities.

CONCLUSION

A customized spreadsheet has been developed to estimate power requirements for the Kern Delta facilities. Currently, it is assumed that all facilities operate 24 hours per day seven days per week. However, significant savings may be realized if the facilities are operated to avoid peak demand periods. It is recommended that the model presented herein be used to evaluate the potential savings associated with minimizing peak demand charges.

EXHIBIT B-2

BLACK & VEATCH Corporation

METHODOLGY FOR DETERMINING O&M COSTS & REPLACEMENT COST

Kern Delta Water District
Water Banking Program

B&V Project 99241
B&V File D.2
January 9, 2002

To: L. Mark Mulkay
Project Manager

From: Steven N. Foellmi, P.E.
Technical Manager

Prepared By: Klint Reedy, P.E.
Victor Tsai

EXECUTIVE SUMMARY

PURPOSE

The purpose of this memorandum is to evaluate the operations and maintenance (O&M) requirements associated with the Kern Delta Water District Water Banking Program components (Kern Delta Project). The recommended manufacturer O&M requirements and estimated replacement costs associated with operation of the major equipment components have been identified and tabulated. Actual maintenance history from similar facilities, and engineer's experience on similar projects were also utilized to define the O&M schedule for the facilities in the preferred project.

BACKGROUND

As part of the Water Banking Program, five new pump stations (Kern Delta pump stations No.1 through 5) would be built along the new Kern Delta Canal allowing conveyance of water between the Kern Water bank Authority (KWBA) Canal and the Arvin-Edison Canal. The pumping plants would take water from a lower canal segment and lift it to the adjacent canal segment. During wet years, the proposed Kern Delta

canal system would allow for the diversion of water from the California Aqueduct to the Kern Delta agricultural canals and spreading basins.
An existing pump within the existing Arvin-Edison Forrest Frick Pump Station would also be used to meet irrigation demands in the eastern section of the Kern Delta service area through the in-lieu (pipeline) facilities. These facilities will allow the use of SWP water "in-lieu" of local groundwater.

Lastly, the project includes 32 new groundwater wells to recover previously stored water in the groundwater basin. The extraction wells would be located near existing water conveyance facilities.

OPERATION AND MAINTENANCE INVESTIGATION

The water-banking project facilities that require O&M include the five pumping stations along a proposed canal conveyance facility, 32 new groundwater wells to withdraw stored supplies, and the existing pump within the Arvin-Edison Forrest Frick Pump Station.

A maintenance schedule for the preferred project components and a preliminary estimate for the corresponding O&M costs has been included. The schedule includes recommended procedures for operating the canal pump stations, groundwater pumps and motors, and the equipment within the Arvin-Edison Forrest Frick Pump Station. The procedures include placing the equipment in service and operating it under both normal and abnormal conditions.

Operation & Maintenance Schedule

The attached example O&M schedule is based on information and recommendations obtained from the equipment manufacturers, maintenance history from other agencies with similar equipment, and the engineer's experience on similar projects. The attached example schedule is intended to provide a general idea of the O&M procedures required for each of the major equipment components of the Water Banking Project. Prior to startup of these facilities, a more detailed O&M schedule should be developed based on specific manufacturer's manuals and shop drawing information.

Estimated O&M Costs

A preliminary estimate of the O&M costs associated with the recommended maintenance procedures for the proposed Water Banking equipment is summarized in

Table 1.

Table 1
Annual Operation & Maintenance Costs
(2002 Dollars)

Description	Cost
STORAGE MODE	
Annual Power Costs	$1,143,000
Labor (Personnel)	$435,000
Annual Maintenance Costs[1]	$54,000
Total Annual O&M Cost	**$1,632,000**
5 YR Minor overhaul of canal pumps	$25,000
20 YR Major overhaul of canal pumps	$57,000
50 YR Major canal / spreading basin equipment replacement	$2,400,000
Present Worth of Maintenance Costs [4]	**$716,817**
Cost per AC-FT of Stored Water	**$14**
WITHDRAWAL MODE	
Annual Power Costs	$6,350,000
Labor (Personnel)	$492,000
Annual Maintenance Costs[2]	$67,000
Total Annual O&M Cost	**$6,909,000**
5 YR Minor Overhaul of GW Pumps	$55,000
20 YR Major Overhaul of GW Pumps	$124,000
50 YR Major groundwater pump equipment replacement	$2,200,000
Present Worth of Maintenance Costs [3]	**$842,741**
Cost per AC-FT of Recovered Water	**$53**

[1] Maintenance costs for storage mode include idle maintenance costs for the groundwater facilities.
[2] Maintenance costs for withdrawal mode include idle maintenance costs for the canal pumps.
[3] Assumes 3% inflation & 6% discount factor.

The power costs presented in Table 1 are based on the results presented in the KDWD Water Banking Program "Energy Requirements" Technical Memorandum. Personnel costs associated with operating and maintaining the Water Banking facilities are based on 5 additional staff positions during the storage model and 6 positions during the withdrawal mode. It may be possible to utilize existing staff to assist with the operation of these facilities and minimize the total number of additional staff required. The estimated annual maintenance and overhaul costs are based on typical maintenance costs for similar facilities. Table 2 summarizes O&M costs by component.

Table 2
Operation & Maintenance Cost Summary By Component
(2002 Dollars)

Description	Annual Cost	
	In-Service	Idle
Canal Pumping Facilities		
Labor (Personnel) Costs	$210,496	$103,904
Routine Maintenance Costs	$21,000	$4,000
Annualized Major Equipment Overhaul & Replacement Costs	$57,345	-
Total O&M Costs ($ / AC-FT)	**$4**	
Energy Costs per AC-FT [1] [2]	$5	
Total Energy + O&M Costs per AC-FT	**$9**	
Spreading Basins		
Labor (Personnel)	$170,880	$33,600
Routine Maintenance Costs	$9,000	$2,000
Annualized Major Equipment Overhaul & Replacement Costs	$0	-
Total O&M Costs ($ / AC-FT)	**$3**	-
Energy Costs per AC-FT	-	
Total Energy + O&M Costs per AC-FT	**$3**	
In-lieu Facilities		
Labor (Personnel)	$5,824	$1,400
Routine Maintenance Costs	$8,000	$2,000
Annualized Major Equipment Overhaul & Replacement Costs	$5,735	-
Total O&M Costs per AC-FT	**$2.1**	-
Energy Costs per AC-FT [1] [3]	$6	
Total Energy + O&M Costs per AC-FT	**$8**	
Well Field Facilities		
Labor (Personnel)	$342,400	$40,960
Routine Maintenance Costs	$46,000	$9,000
Annualized Major Equipment Overhaul & Replacement Costs	$93,774	-
Total O&M Costs per AC-FT	**$7**	-
Energy Costs per AC-FT [1] [4]	$35	
Total Energy + O&M Costs per AC-FT	**$42**	
Canal / Pipeline Facilities		
Labor (Personnel) Costs	$23,720	$4,016
Routine Maintenance Costs	$18,000	$3,000
Annualized Major Equipment Overhaul & Replacement Costs	$7,335	-
Total O&M Costs ($ / AC-FT)	**$6.3**	

(1) Reference Kern Delta Water Banking Project Energy Requirements Memorandum, dated February 27, 2002.
(2) Assumes winter demand charges, if operated in summer months additional $5/AC-FT will be realized.
(3) Assumes winter demand charges, if operated in summer months additional $6/AC-FT will be realized.
(4) Assumes winter demand charges, if operated in summer months additional $35/AC-FT will be realized.

Exhibit C

CERTIFICATION THAT CONDITIONS PRECEDENT HAVE BEEN SATISFIED OR WAIVED

Kern Delta Water District and The San Bernardino Valley Municipal Water District hereby jointly certify that:

1) All conditions precedent set forth in Sections 8.1 of the Agreement titled _____, dated _____, have been satisfied or waived.
2) No Event of Default exists under the Agreement.

Capitalized terms used herein and not otherwise defined are as defined in the Agreement

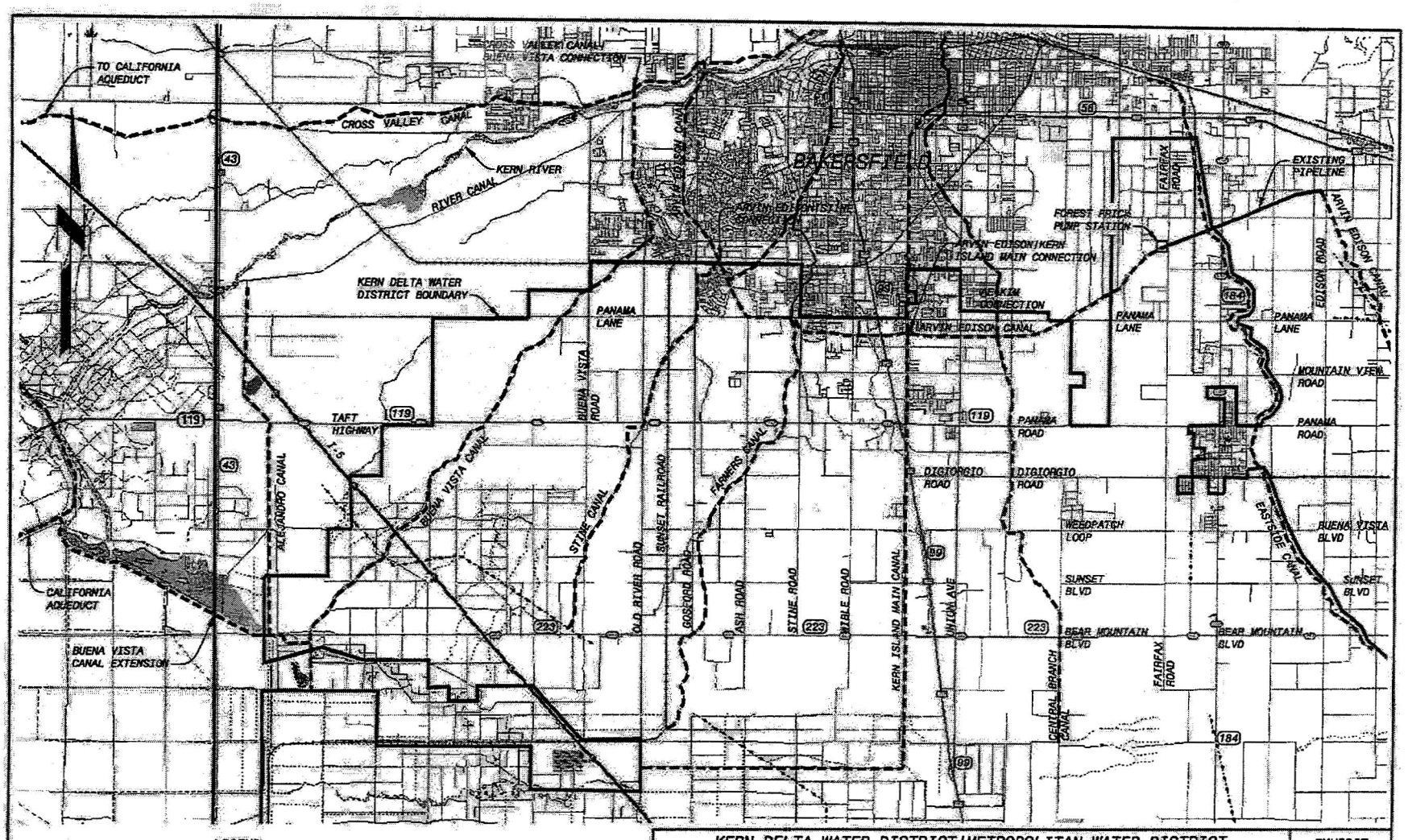
Dated: _____, 2011

Kern Delta Water District

_____

The San Bernardino Valley Municipal Water District

_____



N:\ACAD\Kern Delta\Exihibit F.dwg 11/23/2004 13:22:07

Kern Delta Water Storage Program

Invoice Review

INVOICED COSTS:

Cost	Agreement	June 18, 2012 Invoice
Participation Payment	$40/acre-ft	$40/acre-ft
Energy costs	Pay all energy costs	CVC Power (pass through)
Operational losses	11%	11%
OM&R Fee (spreading)	$3.52/acre-ft	$3.51/acre-ft
OM&R Fee (conveyance)	$19.88/acre-ft	$19.88/acre-ft
Exchange Cost (Rosedale)	§ 4.1.2, 5.4.1	Pass through
Exchange Cost (BVWSD)	§ 4.1.2, 5.4.1	Pass through

INVOICE AMOUNT:

17,800 af

	Staff Estimate	June 18, 2012
Put Cost	$2,400,000	$2,329,862.77

$130.89/af

Kern Delta Water District

501 TAFT HIGHWAY
BAKERSFIELD, CALIFORNIA 93307-6247
TELEPHONE (661) 834-4656
FAX (661) 836-1705

BOARD OF DIRECTORS

Rodney Palla, *President*
David L. Kaiser, *Vice President*
David C. Cosyns, *Secretary*
Kevin Antongiovanni, *Treasurer*
Donald Collins
Howard Frick
Fred Garone
Richard Tillema
Philip J. Cerro

OFFICERS & STAFF

L. Mark Mulkay
General Manager

Dirk W. Reed
Deputy General Manager

Bryan C. Duncan
Controller

McMurtrey, Hartsock & Worth
Attorneys-at-Law

June 18, 2012

Doug Headrick
General Manager
San Bernardino Valley Municipal Water District
380 East Vanderbilt Way
San Bernardino, Ca 92408

Re: Invoice for 2011 Storage of Regulated Water (**Invoice # WBP2012-04)**

Dear Mr. Headrick,

Pursuant to the *Agreement Between Kern Delta Water District and The San Bernardino Valley Municipal Water District for a Water Management Program,* dated October 26, 2011; please accept this letter as an invoice.

Agreement Section	Title	Rate ($/af)	Delivered Water (af)	Cost ($)
1.20	Participation Payment	40.00	30,000	$1,200,000.00
5.5.1	OM&R Spreading	3.51	30,000	$105,300.00
5.5.3	OM&R Delivery Canal	19.88	30,000	$596,400.00
5.4.1	CVC Power (variable)*		Pass Through	$232,976.36
5.4.1	Exchange Cost (Rosedale)*		Pass Through	$66,227.92
5.4.1	Exchange Cost (BVWSD)*		Pass Through	$128,967.48
			Total Due	**$2,329,862.77**

* See attachment 1 for detailed cost breakdown

APPROVE FOR PAYMENT
Initials DDH
Date 6/12/12
Project Name _____
Project Number _____
Invoice to be billed to other Entity ☐
Entity Name _____
% split or EBX Reach # _____

After this invoice, the summary of Regulated Water is as follows:

Deliveries	Regulated Water	Returned Water	Remaining Water
30,000 af	26,700 af	0 af	26,700 af

Please remit payment to:

Kern Delta Water District
501 Taft Highway
Bakersfield, Ca 93307

Thank you for your help in this matter. If you have any questions please call me at (661) 834-4656.

Sincerely,

L. Mark Mulkay

L. Mark Mulkay
General Manager
Kern Delta Water District

Enclosure(s)

Melded CVC cost (acft)	Total 2011 CVC Cost	MWD Portion of CVC Cost	Valley District Portion of CVC Cost
Acre-feet	90,139	60,139	30,000
KCWA CVC Cost	$699,981.50	$467,014.14	$232,967.36
Rosedale/ID4	$198,990.63	$132,762.71	$66,227.92
BVWSD Exchange Cost	$387,500.00	$258,532.52	$128,967.48

KCWA -- CVC Conveyance Cost		
Invoice Number	acft	dollars
24249	1632	$22,039.25
24291	1503	$6,581.25
24487 &24466	4887	$109,370.25
24810 & 24805	3959	$93,655.75
24924 & 24969	1552	$26,491.00
25021 & 25023	3998	$45,822.00
25088 & 25085	3858	$59,841.75
25191 & 25193	12530	$202,161.00
25328 & 25331	6536	$109,299.75
25429&25445	2868	$24,719.50
	43323	$699,981.50

ID#4 Exchange Cost	
acft	dollars
926	$19,298.00
817	$15,874.00
803	$7,395.75
1681	$22,263.75
4227	$64,831.50

Rosedale Exchange Cost		
Invoice Number	acft	dollars
1003	763	$4,959.50
1013	542	$6,168.00
1014	2541	$17,205.50
1015/1016	6801	$38,300.13
1017/1018	9308	$67,526.00
	19955	$134,159.13

Kern Delta Water District's Use of Improvement District No. 4's CVC Capacity

September 2011 through February 2012

	Kern Delta Wheeling through ID4 Capacity in CVC Pools 1-6*							
	Sep-11	Oct-11	Oct - 11**	Nov-11	Dec-11	Jan-12	Feb-12	Total
Pump Plant 1	926	394	423	803	1,681	-	-	4,227
Pump Plant 2	926	394	423	803	1,681	-	-	4,227
Pump Plant 3	926	258	423	447	1,410	-	-	3,464
Pump Plant 4	926	258	423	447	1,410	-	-	3,464
Pump Plant 5	926	258	423	447	1,410	-	-	3,464

	KDWD Wheeling Amount through CVC Extension***							
	Sep-11	Oct-11	Oct - 11**	Nov-11	Dec-11	Jan-12	Feb-12	Total
Pump Plant 6	526	128	423	340	1,306	4,858	6,386	13,967
AEWSD TO	*392*	*24*		*74*	*513*	*-*	*4,776*	*5,779*
KDWD to CVC Extension	**134**	**104**	**423**	**266**	**793**	**4,858**	**1,610**	**8,188**
Unlined Losses	*10*	*16*	*34*	*29*	*67*		*337*	*493*
RTO3	*124*	*88*	*388*	*237*	*-*		*-*	*837*
Pump Plant 7	-	-	-	-	726	4,858	1,273	6,857
Unlined Losses					*66*	*766*	*307*	*832*
RTO4	-	-	-	-	*660*	*4,092*	*966*	*5,718*
KCWA Power Invoice No.	24839	24991	pending	25125	25126	NA	NA	
Power Amount Billed	$19,298.00	$6,168.00	$9,706.00	$7,395.75	$22,263.75	$0.00	$0.00	

*Pursuant to the Letter Agreement between Improvement District No. 4 and Kern Delta Water District dated September 21, 2011.

**Pending invoice correction from CVC.

***Pursuant to the Agreement between Improvement District No. w and Kern Delta Water District dated February 25, 2004.

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
12/14/2011	1/13/2012

INVOICE NO. 24839

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0034-1310
450B-5131

INVOICE

IMPROVEMENT DISTRICT NO. 4

Estimated Power Costs for Kern Delta Water District's Use of
Improvement District No. 4's Cross Valley Canal Capacity
Pursuant to the Letter Agreement between Improvement District No. 4 and Kern Delta Water District dated September 21, 2011.

Canal Reach	Pumping Plant	Delivered *af*	Rate *$/af*	Total Charges
1	1	926	$3.25	$3,009.50
1	2	926	$3.25	$3,009.50
2	3	926	$3.25	$3,009.50
2	4	926	$3.25	$3,009.50
2	5	926	$5.00	$4,630.00
3	6	526	$5.00	$2,630.00
		3,704		$19,298.00

TOTAL AMOUNT DUE **$19,298.00**

CRS

Requested By | Prepared By | Approved By | Approved By

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KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
1/11/2012	2/10/2012

INVOICE NO. 24991

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0034-1310
450B-5131

INVOICE

IMPROVEMENT DISTRICT NO. 4

Estimated Power Costs for Kern Delta Water District's Use of
Improvement District No. 4's Cross Valley Canal Capacity
Pursuant to the Letter Agreement between Improvement District No. 4 and Kern Delta Water District dated September 21, 2011.

Canal Reach	Pumping Plant	Delivered *af*	Rate *$/af*	Total Charges
1	1	394	$3.25	$1,280.50
1	2	394	$3.25	$1,280.50
2	3	258	$3.25	$838.50
2	4	258	$3.25	$838.50
2	5	258	$5.00	$1,290.00
3	6	128	$5.00	$640.00
				$6,168.00

TOTAL AMOUNT DUE **$6,168.00**

D. SEMAR 1·11·12

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KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
2/15/2012	3/16/2012

INVOICE NO. 25125

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0034-1310
450B-4610

INVOICE

IMPROVEMENT DISTRICT NO. 4

Estimated Power Costs for Kern Delta Water District's Use of
Improvement District No. 4's Cross Valley Canal Capacity during November 2011
Pursuant to the Letter Agreement between Improvement District No. 4 and Kern Delta Water District dated September 21, 2011.

Canal Reach	Pumping Plant	Delivered *af*	Rate *$/af*	Total Charges
1	1	803	$2.25	$1,806.75
1	2	803	$2.25	$1,806.75
2	3	447	$2.25	$1,005.75
2	4	447	$2.25	$1,005.75
2	5	447	$2.25	$1,005.75
3	6	340	$2.25	$765.00
				$7,395.75

TOTAL AMOUNT DUE **$7,395.75**

D. SOMAE 2.15.12 | Requested By | Prepared By | Approved By | Approved By

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KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
2/15/2012	3/16/2012

INVOICE NO. 25126

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0034-1310
450B-4610

INVOICE

IMPROVEMENT DISTRICT NO. 4

Estimated Power Costs for Kern Delta Water District's Use of
Improvement District No. 4's Cross Valley Canal Capacity during December 2011
Pursuant to the Letter Agreement between Improvement District No. 4 and Kern Delta Water District dated September 21, 2011.

Canal Reach	Pumping Plant	Delivered *af*	Rate *$/af*	Total Charges
1	1	1,681	$2.25	$3,782.25
1	2	1,681	$2.25	$3,782.25
2	3	1,681	$2.25	$3,782.25
2	4	1,410	$2.25	$3,172.50
2	5	1,410	$2.25	$3,172.50
3	6	1,306	$2.25	$2,938.50
Extension	7	726	$2.25	$1,633.50
				$22,263.75

TOTAL AMOUNT DUE **$22,263.75**

D. Semas 2.15.12 DRB

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KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
09/22/2011	10/24/2011

INVOICE NO. 24291

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0053-1330(PWR)
561B-4402

Cross Valley Canal
April 2011

Estimated power costs for deliveries of Kern Delta Water District Metropolitan Water District SWP supplies delivered to the N-2 Siphon as part of an operational exchange for deliveries of Kern County Water Agency Member Unit (KCWA M/U) Federal Section 215 deliveries to the Arvin-Edison Turnout on the CVC as well as deliveries to the P-11 Turnout as part of an operational exchange with KCWA M/U's for Federal Section 215 supplies delivered off the Friant-Kern Canal delivered to the Arvin-Edison Intake Canal; adjust for lined losses.

Canal Reach	Pumping Plant	SWP MWD Volume AF	Rate $/AF	Pumping Costs $
1	1	1,503	2.25	3,381.75
1	2	1,422	2.25	3,199.50
2	3	0	2.25	0.00
2	4	0	2.25	0.00
2	5	0	2.25	0.00
3	6	0	2.25	0.00
Extension	7	0	2.25	0.00

TOTAL AMOUNT DUE **$6,581.25**

Requested By	Prepared By	Approved By	Approved By

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KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
08/31/2011	09/30/2011

INVOICE NO. 24249

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0053-1330(PWR)
WATER B.P.

VENDOR	K0241
INVOICE #	24249
P.O. #	DWR
DATE	8-31-
AMOUNT	22,039.25
ACCT. CODE	40540

10/12/11

Cross Valley Canal
March 2011

Estimated power costs for deliveries of Kern Delta Water District SWP Article 21 supplies, Metropolitan Water District SWP supplies delivered to the Arvin-Edison Turnout as well as an operational exchange of Article 21 deliveries to the North and South Strand Ranch Turnouts for a like amount of Federal supplies delivered to River Turnout No. 2; adjust for lined losses.

Canal Reach	Pumping Plant	SWP Article 21 Volume AF	SWP MWD Volume AF	Rate $/AF	Pumping Costs $
1	1	999	1,632	2.25	5,919.75
1	2	998	1,631	2.25	5,915.25
2	3	762	1,630	2.25	5,382.00
2	4	182	1,629	2.25	4,074.75
2	5	77	1,626	2.25	3,831.75
3	6	8	1,617	2.25	3,656.25
Extension	7	0	0	2.25	0.00

TOTAL AMOUNT DUE **$28,779.75**

OF THE $28,779.75 K.D.W.D. PAID $6,740.50
BANKING PAID $22,039.25

Requested By ✓ Prepared By Approved By Approved By

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KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
11/22/2011	12/22/2011

INVOICE NO. 24487

RECEIVED
NOV 28 2011

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0055-1100
580B-4430
020A-5103
0102-1100

Cross Valley Canal
August 2011

Early implementation conveyance fees in the Cross Valley Canal for delivery of Kern Delta Water District deliveries of Metropoitan WD State Water Project supplies to Arvin-Edison WSD and Rosedale Rio-Bravo WSD as well as an operational exchange of Kern County Water Agency Member Units' Lower River water supplies; adjusted for lined losses. Kern Delta Water District State Water Project Table A supplies were delivered to the Section 4 Turnout as part of an operational exchange with Semitropic WSD Lower River supplies of the Kern River Channel.

Reach	KDWD SWP Volume AF	MWD SWP Volume AF	Kern River Operational Exchange Volume AF	Total $/AF [1]	Conveyance Costs Total $
1	208	4,887	0	1.00	5,095.00
2	208	4,880	750	1.00	5,838.00
3	0	2,817		1.00	2,817.00

Total Amount Due 13,750.00

TOTAL AMOUNT DUE $ 13,750.00

[1] Conveyance Fee $1.00 per Reach.

4.68%
VENDOR K0341
INVOICE # 24487
P.O. # DWR
DATE 11-23-11
AMOUNT 13,188.00
ACCT. CODE 40530
562.00 - 54600
13,188.00 - 40530
DWR
WATER B.P.
12/1/11

Requested By ☑ ORIGINAL ☐ REMITTANCE ☐ FILE
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Approved By ☐ ACCOUNTING
Approved By ☐ NUMERICAL CONTROL

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
12/12/2011	01/11/2012

INVOICE NO. 24810

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0055-1100
580B-4430
020A-5103
0102-1100

Cross Valley Canal
September 2011

Early implementation conveyance fees in the Cross Valley Canal for delivery of Kern Delta Water District deliveries of Metropoitan WD State Water Project supplies to Arvin-Edison WSD and Rosedale Rio-Bravo WSD as well as an operational exchange of Kern County Water Agency Member Units' Lower River water supplies; adjusted for lined losses. Kern Delta Water District State Water Project Table A supplies were delivered to the Section 4 Turnout as part of an operational exchange with Semitropic WSD Lower River supplies of the Kern River Channel.

Reach	MWD SWP Volume AF	Total $/AF [1]	Conveyance Costs Total $
1	3,959	1.00	3,959.00
2	3,952	1.00	3,952.00
3	3,280	1.00	3,280.00
		Total Amount Due	11,191.00

TOTAL AMOUNT DUE **$ 11,191.00**

[1] Conveyance Fee $1.00 per Reach.

Requested By | Prepared By | Approved By | Approved By

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DEC 14 2011

December 12, 2011

Directors:

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Division 1

Terry Rogers
Vice President
Division 2

Randell Parker
Division 3

Michael Radon
President
Division 4

Adrienne J. Mathews
Division 5

William W. Van Skike
Division 6

Gene A. Lundquist
Division 7

James M. Beck
General Manager

Amelia T. Minaberrigarai
General Counsel

Mr. Mark Mulkay
Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

Re: Estimated power and conveyance invoices for September 2011; Cross Valley Canal Water Balance Summaries for September 2011

Dear Mr. Mulkay:

Enclosed are the above referenced documents for your records and remittance. If you have any questions or require further information, please call me at (661) 634-1491.

Sincerely,

Trent Taylor
Water Resources Planner
Kern County Water Agency

Enclosures

(661) 634-1400

Mailing Address
P.O. Box 58
Bakersfield, CA 93302-0058

Street Address
3200 Rio Mirada Dr.
Bakersfield, CA 93308

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
11/22/2011	12/22/2011

INVOICE NO. 24466

RECEIVED
NOV 28 2011

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0053-1330(PWR)
561B-4402

Cross Valley Canal
August 2011

Estimated power costs for deliveries of Kern Delta Water District Metropolitan Water District SWP supplies delivered to Rosedale Rio-Bravo WSD and Arvin-Edison WSD as well as an operational exchange delivery with Kern County Water Agency Member Units' (750 af) delivered to the Section 4 Turnout; adjust for lined losses. Kern Delta WD also delivered their own SWP Table A supplies (303 af) to River Turnout No. 1 as part of an operational exchange with Semitropic WSD for Semitropic WSD Lower River supplies delivered to Kern Delta WD off the Kern River Channel.

Canal Reach	Pumping Plant	MWD SWP Volume AF	KDWD SWP Volume AF	Rate $/AF	Pumping Costs $
			5091		
1	1	4,883	208	3.25	16,545.75
1	2	4,880	208	3.25	16,536.00
2	3	4,877	208	3.25	16,526.25
2	4	4,357	208	3.25	14,836.25
2	5	4,354	0	5.00	21,770.00
3	6	2,813	0	5.00	14,065.00
Extension	7	0	0	5.00	0.00

4%

TOTAL AMOUNT DUE **$100,279.25**

DWR

4,097.00 — 54600
96,182.25 — 40540

WATER B.P.

VENDOR	K0841
INVOICE #	24466
P.O. #	DWR
DATE	11-22-11
AMOUNT	96,182.25
ACCT. CODE	

12/14/11

Requested By ☑ ORIGINAL ☐ REMITTANCE
Prepared By ☐ FILE
Approved By ☐ ACCOUNTING
Approved By ☐ NUMERICAL CONTROL

Cross Valley Canal

August 2011 Deliveries - Gross AF

	Points of Entry				
	Tupman T/O SWP (AF)	CVC/Friant-Kern Intertie CVP (AF)	Pionner Inlet KR (AF)	KCWA Armco Reverse SWP Exch. (AF)	CVC Total (AF)
Deliveries by Turnout:					
N-2 Siphon	1,204	-	-	-	1,204
Rosedale Rio Bravo Turnout No. 1	5,066	-	-	-	5,066
Strand Siphons	2,287	-	-	-	2,287
North Strand Ranch Turnout	2,507	-	-	-	2,507
South Strand Ranch Turnout	742	-	-	-	742
Kern Water Bank P-11 Turnout	2,420	-	-	-	2,420
Nord Siphons	339	-	-	-	339
Section 4 Turnout	5,514	-	-	-	5,514
River Turnout No. 1	3,136	-	-	-	3,136
Rosedale Rio Bravo Turnout No. 2	2,237	750	-	-	2,987
River Turnout No. 2	1,277	-	-	-	1,277
Arvin-Edison Turnout	18,754	-	-	-	18,754
Lined Losses - Pools 1-6	126	-	-	-	126
Unlined Losses - Pool 7	355	-	-	-	355
River Turnout No. 4 to River	5,121	-	-	-	5,121
Calloway Turnout	2,747	-	-	-	2,747
Henry C. Garnett Treatment Plant	-	-	-	3,959	3,959
Cawelo Pump Station 'A'	742	-	-	-	742
Unlined Losses - Pool 8	292	-	-	-	292
Total	54,866	750	-	3,959	59,575
Deliveries by Turnout/Owner:					
N-2 Siphon					
Improvement District No. 4	35	-	-	-	35
Kern County Water Agency	271	-	-	-	271
Kern-Tulare WD - KCWA M/U	564	-	-	-	564
Lower Tule River ID - KCWA M/U	21	-	-	-	21
Pixley ID - KCWA M/U	313	-	-	-	313
Rosedale-Rio Bravo Turnout No. 1					
Rosedale-Rio Bravo WSD - AEWSD	4,303	-	-	-	4,303
Rosedale-Rio Bravo WSD - KDWD	763	-	-	-	763
Strand Siphons					
Improvement District No. 4	86	-	-	-	86
Kern County Water Agency	503	-			503
Kern-Tulare WD - KCWA M/U	1,057	-	-	-	1,057
Lower Tule River ID - KCWA M/U	52	-	-	-	52
Pixley ID - KCWA M/U	589	-	-	-	589
Nouth Strand Turnout					
Kern County Water Agency	531	-	-	-	531
Kern-Tulare WD - KCWA M/U	1,248	-	-	-	1,248
Pixley ID - KCWA M/U	728	-	-	-	728
South Strand Turnout					
Kern County Water Agency	165	-	-	-	165
Kern-Tulare WD - KCWA M/U	371	-	-	-	371
Pixley ID - KCWA M/U	206	-	-	-	206
Kern Water Bank P-11 Turnout					
Improvement District No. 4	473	-	-	-	473
Kern County Water Agency	359	-	-	-	359
Kern-Tulare WD - KCWA M/U	822	-	-	-	822
Lower Tule River ID - KCWA M/U	290	-	-	-	290
Pixley ID - KCWA M/U	476	-	-	-	476
Nord Siphons					
Improvement District No. 4	211	-	-	-	211
Lower Tule River ID - KCWA M/U	128	-	-	-	128
Section 4 Turnout					
Improvement District No. 4	147	-	-	-	147
Kern County Water Agency	1,031	-	-	-	1,031
Kern Delta Water District	516				516
Kern-Tulare WD - KCWA M/U	2,360	-	-	-	2,360
Lower Tule River ID - KCWA M/U	89	-	-	-	89
Pixley ID - KCWA M/U	1,371	-	-	-	1,371
River Turnout No. 1					
Improvement District No. 4	173	-	-	-	173
Kern County Water Agency	539	-	-	-	539
Kern Delta Water District	208	-	-	-	208
Kern-Tulare WD - KCWA M/U	1,316	-	-	-	1,316
Lower Tule River ID - KCWA M/U	105	-	-	-	105
Pixley ID - KCWA M/U	795	-	-	-	795
Rosedale Rio Bravo Turnout No. 2					
Kern County Water Agency	191	-	-	-	191
Kern Delta Water District	1,537	750	-	-	2,287
Kern-Tulare WD - KCWA M/U	332	-	-	-	332
Pixley ID - KCWA M/U	177	-	-	-	177
River Turnout No. 2					
Kern County Water Agency	299	-	-	-	299
Kern-Tulare WD - KCWA M/U	640	-	-	-	640
Pixley ID - KCWA M/U	338	-	-	-	338
Arvin-Edison Turnout					
Arvin-Edison WSD (Existing)	887	-	-	-	887
Arvin-Edison WSD (New)	1,936	-	-	-	1,936
Cawelo WD - AEWSD	2,694	-	-	-	2,694
County of Fresno - AEWSD	726	-	-	-	726
County of Tulare - AEWSD	726	-	-	-	726
Hills Valley ID - AEWSD	518	-	-	-	518
Improvement District No. 4	4,244	-	-	-	4,244
Kern County Water Agency	442	-	-	-	442
Kern Delta Water District	2,813	-	-	-	2,813
Kern-Tulare WD - KCWA M/U	607	-	-	-	607
Lower Tule River ID - KCWA M/U	2,601	-	-	-	2,601
Pixley ID - KCWA M/U	323	-	-	-	323
Tri-Valley WD - AEWSD	237	-	-	-	237
Lined Losses - Pools 1-6					
Arvin-Edison WSD (New)	48	-	-	-	48
Cawelo WD - AEWSD	11	-	-	-	11
Improvement District No. 4	17	-	-	-	17
Kern County Water Agency	29	-	-	-	29
Kern Delta Water District	21	-	-	-	21
Unlined Losses - Pools 7					
Improvement District No. 4	355	-	-	-	355
River Turnout No. 4					
Improvement District No. 4	5,121	-	-	-	5,121
Calloway Turnout					
Cawelo WD	2,747	-	-	-	2,747
Cawelo Pump Station 'A'					
Cawelo WD	742	-	-	-	742
Henry C. Garnett Treatment Plant:					
Improvement District No. 4	-	-	-	3,959	3,959
Unlined Losses - Pools 8					
Improvement District No. 4	292	-	-	-	292
Total	54,866	750	-	3,959	59,575
Existing Participant Deliveries	*19,890*	-	-	*3,959*	*14,693*
New Participant Deliveries	34,976	750	-	-	44,882
	54,866	750	-	3,959	59,575

Shading denotes forward flow deliveries based on each point of entry into the CVC: _ / _ denotes pools / pump plants utilized (for forward flow).

Kern County Water Agency
Cross Valley Canal - Tupman Turnout Water Balance
State Water Project Deliveries
Month of August 2011
Subject to Adjustment

November 22, 2011
2:09 PM

	Reach 1				Reach 2							Pool 5			Reach 3				Extension						
	Pool 1	Pool 2			Pool 3					Pool 4					Pool 6	Pool 7			Pool 8						
Date	CVC Losses SWP	N-2 Siphon SWP	CVC Losses SWP	RRB 1 Turnout SWP	Strand Siphons SWP	North Strand Turnout SWP	South Strand Turnout SWP	KWB P-11 Turnout SWP	CVC Losses SWP	Nord Siphons SWP	Section 4 Pump SWP	CVC Losses SWP	RTO 1 Turnout SWP	CVC Losses SWP	RRB 2 Turnout SWP	RTO 2 Turnout SWP	CVC Losses SWP	AEWSD T.O. SWP	KTWD Siphons SWP	Unlined Losses SWP	RTO 3 River SWP	RTO 4 Turnout SWP	Unlined Losses SWP	Calloway Turnout SWP	Cawelo PSA SWP	T/O Total SWP
1	1	0	0	30	25	58	21	25	0	0	90	1	220	0	100	0	0	62	0	7	0	100	6	115	0	851
2	0	0	1	31	0	60	21	0	0	0	90	0	224	0	105	0	1	109	0	7	0	99	6	121	9	884
3	1	0	0	30	0	55	19	0	1	0	90	0	230	1	103	0	0	109	0	7	0	93	6	126	25	895
4	0	0	0	63	0	46	17	0	0	0	90	1	197	0	48	0	0	207	0	6	0	73	5	125	25	903
5	1	0	1	87	0	46	18	0	0	0	90	0	122	0	0	0	1	283	0	6	0	57	5	123	25	865
6	0	0	0	90	0	48	19	0	0	0	90	0	121	1	0	0	0	287	0	6	0	55	5	126	25	873
7	1	0	0	90	0	55	19	0	1	0	90	1	105	0	0	0	1	299	0	6	0	55	5	125	25	878
8	0	0	0	90	0	57	20	0	0	0	90	0	105	0	0	0	0	297	0	6	0	55	5	123	25	873
9	0	0	1	90	0	58	19	0	0	0	90	0	109	1	0	0	1	296	0	6	0	55	5	122	25	878
10	1	0	0	90	0	55	20	0	0	0	90	1	103	0	0	0	0	301	0	6	0	54	5	121	25	872
11	0	0	0	90	0	58	20	0	1	0	90	0	45	0	7	0	0	307	0	6	0	54	5	119	25	827
12	1	0	1	90	0	52	18	63	0	0	90	0	0	1	20	0	1	357	0	6	0	85	5	40	22	852
13	0	31	0	90	46	52	18	71	0	0	90	1	0	0	21	0	0	345	0	6	0	100	5	0	22	898
14	1	50	0	90	60	56	20	71	0	0	90	0	0	0	10	0	1	326	0	6	0	102	5	0	22	910
15	0	51	0	86	60	54	20	43	1	0	90	0	0	1	0	0	0	379	0	6	0	101	5	0	21	918
16	1	49	1	77	61	58	20	36	0	0	90	1	0	0	7	0	0	400	0	6	0	89	5	0	22	921
17	0	49	0	78	61	58	20	32	0	0	89	0	0	0	12	0	1	400	0	6	0	70	5	0	22	902
18	0	48	0	86	61	58	17	30	0	0	90	0	0	1	15	0	0	395	0	6	0	71	5	0	9	892
19	1	49	1	90	60	68	10	30	1	0	90	1	0	0	24	0	0	409	0	6	0	69	5	0	0	905
20	0	14	0	90	61	70	10	29	0	0	89	0	0	0	48	0	1	397	0	6	0	70	5	0	0	890
21	0	0	0	90	62	28	8	40	0	0	89	0	0	1	55	37	0	376	0	6	0	100	4	0	0	896
22	1	0	0	90	61	0	0	52	0	0	89	1	0	0	55	62	1	399	0	5	0	110	4	0	0	930
23	0	0	1	91	61	0	0	52	1	0	89	0	0	0	55	61	0	386	0	5	0	88	4	0	0	894
24	1	0	0	91	61	0	0	52	0	0	90	0	0	1	56	62	0	375	0	5	0	95	4	0	0	893
25	0	0	0	91	60	10	0	65	0	0	89	1	0	0	55	61	1	347	0	5	0	118	4	0	0	905
26	0	33	1	91	60	18	0	56	0	14	90	0	0	0	55	61	0	327	0	5	0	115	4	0	0	930
27	1	51	0	90	59	18	0	63	1	31	90	0	0	1	56	59	0	291	0	5	0	94	4	0	0	914
28	0	46	0	90	59	19	0	101	0	31	89	1	0	0	55	58	1	255	0	5	0	89	4	0	0	903
29	0	45	0	91	59	18	0	106	0	31	89	0	0	0	55	60	0	237	0	5	0	88	4	0	0	888
30	1	46	1	90	58	18	0	101	0	31	89	0	0	1	56	62	1	258	0	5	0	90	4	0	0	912
31	0	45	0	90	58	17	0	102	1	33	89	1	0	0	55	61	0	248	0	5	0	90	4	0	0	899
CFS	13	807	9	2,554	1,153	1,264	374	1,220	8	171	2,780	11	1,581	10	1,128	644	12	9,455	0	179	0	2,582	147	1,385	374	27,661
AF	26	1,204	18	5,066	2,287	2,507	742	2,420	16	339	5,514	22	3,136	20	2,237	1,277	24	18,754	0	355	0	5,121	292	2,747	742	54,866

Pixley Irrigation District - KCWA M/U [1]																										
Improvement District No. 4		21			52			290		128	66		105					2,601								3,286
Kern Delta WD - KCWA M/U [1]																										
Kern Delta WD																										
Kern Delta WD [2]																										
Kern Delta WD [3]																										
Kern Delta Water Agency																										
Arvin-Edison WSD																										
Arvin-Edison WSD (BVWSD) [4]																										
Berrenda Mesa WD																										
Berrenda Mesa WD (BVWSD) [4]																										
Buena Vista WSD																										
Kern Delta WD																										
Kern Delta WD [2]																										
Kern Delta WD [3]																										
Lost Hills WD																										
Lost Hills WD (BVWSD) [4]																										
Semitropic WSD																										
Semitropic WSD (BVWSD) [4]																										
Semitropic WSD [5]																										
Wheeler Ridge - Maricopa WSD																										
Wheeler Ridge - Maricopa WSD (BVWSD) [4]																										
Rosedale-Rio Bravo WSD																										
Kern Delta WD				4,303																						
Kern Delta WD				763																						
Improvement District No. 4	3	35	2		86			473	2	211	147	3	173	3				4,244		355		5,121	292			11,154
Kern Delta WD																										
Kern Delta WD																										
Kern Delta WD [2]																										
Kern Delta WD [3]																										
Kern Delta Water Agency																										
Arvin-Edison WSD																										
Arvin-Edison WSD (BVWSD) [4]																										
Berrenda Mesa WD																										
Berrenda Mesa WD (BVWSD) [4]																										
Buena Vista WSD																										
Cawelo WD																										
Improvement District No. 4																										
Kern Delta WD																										
Lost Hills WD																										
Semitropic WSD																										
Semitropic WSD (BVWSD) [4]																										
Semitropic WSD [5]																										
Wheeler Ridge - Maricopa WSD																										
Wheeler Ridge - Maricopa WSD (BVWSD) [4]																										
Total	26	1,204	18	5,066	2,287	2,507	742	2,420	16	339	5,514	22	3,136	20	2,237	1,277	24	18,754	0	355	0	5,121	292	2,747	742	54,866

NOTES:

[1] Kern County Water Agency Member Units' made deliveries of Federal Section 215 supplies utilizing Lower-Tule River Irrigation District, Pixley Irrigation District and Kern-Tulare Water District capacities per long-term agreements which allow for KCWA M/U's to utilize unused capacities.

[2] Deliveries of Kern Delta WD Metropolitan SWP supplies (750 af) to the Section 4 Turnout were made to the Kern County Water Agency Member Units as part of an operational exchange of KCWA M/U Lower River supplies CVC Pool 5 through the Pioneer Inlet (which was then delivered by Kern Delta WD to Rosedale Turnout No. 2).

[3] Deliveries of Kern Delta WD SWP Table A supplies (303 af) to the River Turnout No. 1 were made to Semitropic WSD as part of an operational exchange of Semitropic WSD Lower River supplies delivered to Kern Delta WD off the Kern River Channel in August 2011.

[4] Deliveries of KCWA M/U water to Buena Vista WSD at the North and South Strand Ranch Turnout (3,015 af) were part of an operational exchange with Buena Vista WSD Kern River supplies delivered to the Berrenda Mesa and Pioneer Projects off the Kern River Channel.

[5] Deliveries by Semitropic WSD to the Section 4 Turnout (645 af) were part of an operational exchange with KCWA M/U Lower River water delivered off the Kern River Channel to the Pioneer Project (645 af).

	CVC Losses	N-2 Siphon	CVC Losses	RRB 1 Turnout	Strand Siphons	Strand Turnout	Strand Turnout	KWB P-11 Turnout	CVC Losses	Nord Siphons	Section 4 Pump	CVC Losses	RTO 1 Turnout	CVC Losses	RRB 2 Turnout	RTO 2 Turnout	CVC Losses	AEWSD T.O.	KTWD Siphons	Unlined Losses	RTO 3 River	RTO 4 Turnout	Unlined Losses	Calloway Turnout	Cawelo PSA	T/O Total
Arvin-Edison WSD	6		6	4,303					5			8		9			12	7,817								12,168
Belridge WSD	3	300	2		536	210	296	212	2		1,117	2	1,012	1		149										3,842
Berrenda Mesa WD	1	82			132	151	381	123			455		140			766	1									2,232
Buena Vista WSD						234																				234
Cawelo WD	2		1						1			2		2			3						2,747	742		3,500
Improvement District No. 4	3	58	2		138			763	2	339	238	3	278	3			4	6,845		355		5,121	292			14,440
Kern Delta WD	4		3	763					3		759	4	303	3	2,237		4	4,092								8,166
Lost Hills WD		297			589	30	65	212			467		60			128										1,848
Semitropic WSD	4	76	3		218	1,427		758	2		1,864	2	1,343	2		234										5,699
Wheeler Ridge - Maricopa WSD	1	393	1		674	455		352	1		625	1														2,737
Total	26	1,204	18	5,066	2,287	2,507	742	2,420	16	339	5,514	22	3,136	20	2,237	1,277	24	18,754	0	355	0	5,121	292	2,747	742	54,866

Kern County Water Agency

Cross Valley Canal - Pioneer Canal Inlet Water Balance

Kern River Deliveries

Month of August 2011

Subject to Adjustment

November 22, 2011
9:06 AM

		Reach 1			Reach 2										Reach 3							
		Pool 1	Pool 2	Pool 3						Pool 4			Pool 5			Pool 6		Pool 7	Pool 8			
Date	California Aqueduct KR	CVC Losses	CVC Losses	RRB 1	Strand Siphons	North Strand Turnout	South Strand Turnout	KWB P-11 Turnout	CVC Losses	Section 4 Turnout	Nord Siphons	CVC Losses	CVC Losses	Pioneer Inlet	RRB 2	CVC Losses	AEWSD Turnout	Unlined Losses	Unlined Losses	Calloway Turnout	ID4 WTP	System Loss/ Storage
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	29	29	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	35	35	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	34	34	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	45	45	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	58	58	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	48	48	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	43	43	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	43	43	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	35	35	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CFS	0	0	0	0	0	0	0	0	0	0	0	0	0	378	378	0	0	0	0	0	0	0
AF	0	0	0	0	0	0	0	0	0	0	0	0	0	750	750	0	0	0	0	0	0	0
KCWA M/U Lower River [1]														750	750							
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	750	750	0	0	0	0	0	0	0

NOTES:

[1] Deliveries of Kern County Water Agency Lower River supplies in CVC Pool 5 to Kern Delta WD are part of an operational exchange of KCWA M/U Lower River supplies for Kern Delta WD SWP supplies delivered in forward flow to the Section 4 Turnout.

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
12/12/2011	01/11/2012

INVOICE NO. 24805

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0053-1330(PWR)
561B-4402

Cross Valley Canal
September 2011

Estimated power costs for deliveries of Kern Delta Water District Metropolitan Water District SWP supplies delivered to River Turnout No. 2 and 3, Rosedale Rio-Bravo WSD and Arvin-Edison WSD; adjust for lined losses.

Canal Reach	Pumping Plant	MWD SWP Volume AF	Rate $/AF	Pumping Costs $
1	1	3,955	3.25	12,853.75
1	2	3,952	3.25	12,844.00
2	3	3,950	3.25	12,837.50
2	4	3,946	3.25	12,824.50
2	5	3,940	5.00	19,700.00
3	6	2,281	5.00	11,405.00
Extension	7	0	5.00	0.00

TOTAL AMOUNT DUE **$82,464.75**

Requested By	Prepared By	Approved By	Approved By

☐ ORIGINAL ☑ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

Cross Valley Canal

September 2011 Deliveries - Gross AF

	Points of Entry				
	Tupman T/O SWP (AF)	CVC/Friant-Kern Intertie CVP (AF)	Pionner Inlet KR (AF)	KCWA Armco Reverse SWP Exch. (AF)	CVC Total (AF)
Deliveries by Turnout:					
N-2 Siphon	2,366	-	-	-	2,366
Rosedale Rio Bravo Turnout No. 1	5,109	-	-	-	5,109
Strand Siphons	3,142	-	-	-	3,142
North Strand Ranch Turnout	1,666	-	-	-	1,666
Kern Water Bank P-11 Turnout	3,759	-	-	-	3,759
Nord Siphons	1,825	-	-	-	1,825
Section 4 Turnout	5,100	-	-	-	5,100
River Turnout No. 1	8,257	-	-	-	8,257
Rosedale Rio Bravo Turnout No. 2	2,148	-	-	-	2,148
River Turnout No. 2	5,288	-	-	-	5,288
Arvin-Edison Turnout	10,332	-	-	-	10,332
Lined Losses - Pools 1-6	124	-	-	-	124
River Turnout No. 3 to River	1,212	-	-	-	1,212
Unlined Losses - Pool 7	121	-	-	-	121
Henry C. Garnett Treatment Plant	-	-	-	3,709	3,709
Total	50,449	-	-	3,709	54,158
Deliveries by Turnout/Owner:					
N-2 Siphon					
Cawelo WD	67	-	-	-	67
Improvement District No. 4	71	-	-	-	71
Kern County Water Agency	370	-	-	-	370
Kern-Tulare WD - KCWA M/U	917	-	-	-	917
Lower Tule River ID - KCWA M/U	439	-	-	-	439
Pixley ID - KCWA M/U	502	-	-	-	502
Rosedale-Rio Bravo Turnout No. 1					
Kern County Water Agency	34	-	-	-	34
Kern-Tulare WD - KCWA M/U	74	-	-	-	74
Lower Tule River ID - KCWA M/U	38	-	-	-	38
Pixley ID - KCWA M/U	22	-	-	-	22
Rosedale-Rio Bravo WSD	3,021	-	-	-	3,021
Rosedale-Rio Bravo WSD - AEWSD	1,608	-	-	-	1,608
Rosedale-Rio Bravo WSD - KDWD	312	-	-	-	312
Strand Siphons					
Improvement District No. 4	206	-	-	-	206
Kern County Water Agency	480	-	-	-	480
Kern-Tulare WD - KCWA M/U	1,182	-	-	-	1,182
Lower Tule River ID - KCWA M/U	628	-	-	-	628
Pixley ID - KCWA M/U	646	-	-	-	646
Nouth Strand Turnout					
Kern County Water Agency	226	-	-	-	226
Kern-Tulare WD - KCWA M/U	629	-	-	-	629
Lower Tule River ID - KCWA M/U	320	-	-	-	320
Pixley ID - KCWA M/U	342	-	-	-	342
Rosedale-Rio Bravo WSD	149	-	-	-	149
Kern Water Bank P-11 Turnout					
Cawelo WD	69	-	-	-	69
Improvement District No. 4	759	-	-	-	759
Kern County Water Agency	372	-	-	-	372
Kern-Tulare WD - KCWA M/U	1,052	-	-	-	1,052
Lower Tule River ID - KCWA M/U	878	-	-	-	878
Pixley ID - KCWA M/U	629	-	-	-	629
Nord Siphons					
Improvement District No. 4	425	-	-	-	425
Kern County Water Agency	196	-	-	-	196
Kern-Tulare WD - KCWA M/U	494	-	-	-	494
Lower Tule River ID - KCWA M/U	438	-	-	-	438
Pixley ID - KCWA M/U	272	-	-	-	272
Section 4 Turnout					
Improvement District No. 4	131	-	-	-	131
Kern County Water Agency	679	-	-	-	679
Kern-Tulare WD - KCWA M/U	1,706	-	-	-	1,706
Lower Tule River ID - KCWA M/U	811	-	-	-	811
Pixley ID - KCWA M/U	936	-	-	-	936
Rosedale-Rio Bravo WSD	837	-	-	-	837
River Turnout No. 1					
Cawelo WD	3,477	-	-	-	3,477
Cawelo WD - AEWSD	856	-	-	-	856
Improvement District No. 4	637	-	-	-	637
Improvement District No. 4 - AEWSD	6	-	-	-	6
Kern County Water Agency	530	-	-	-	530
Kern-Tulare WD - KCWA M/U	1,216	-	-	-	1,216
Lower Tule River ID - KCWA M/U	870	-	-	-	870
Pixley ID - KCWA M/U	665	-	-	-	665
Rosedale Rio Bravo Turnout No. 2					
Cawelo WD - AEWSD	771	-	-	-	771
Improvement District No. 4 - AEWSD	6	-	-	-	6
Improvement District No. 4 - KDWSD	184	-	-	-	184
Kern County Water Agency	89	-	-	-	89
Kern Delta Water District	660	-	-	-	660
Kern-Tulare WD - KCWA M/U	136	-	-	-	136
Pixley ID - KCWA M/U	72	-	-	-	72
Rosedale-Rio Bravo WSD - KDWD	230	-	-	-	230
River Turnout No. 2					
Cawelo WD - AEWSD	174	-	-	-	174
Improvement District No. 4 - KDWSD	216	-	-	-	216
Kern County Water Agency	682	-	-	-	682
Kern Delta Water District	991	-	-	-	991
Kern-Tulare WD - KCWA M/U	1,682	-	-	-	1,682
Lower Tule River ID - KCWA M/U	620	-	-	-	620
Pixley ID - KCWA M/U	923	-	-	-	923
Arvin-Edison Turnout					
Arvin-Edison WSD (Existing)	887	-	-	-	887
Arvin-Edison WSD (New)	1,945	-	-	-	1,945
Cawelo WD - AEWSD	2,049	-	-	-	2,049
County of Fresno - AEWSD	726	-	-	-	726
County of Tulare - AEWSD	726	-	-	-	726
Hills Valley ID - AEWSD	518	-	-	-	518
Improvement District No. 4 - AEWSD	50	-	-	-	50
Improvement District No. 4 - KDWSD	392	-	-	-	392
Kern County Water Agency	463	-	-	-	463
Kern Delta Water District	1,895	-	-	-	1,895
Kern-Tulare WD - KCWA M/U	290	-	-	-	290
Pixley ID - KCWA M/U	154	-	-	-	154
Tri-Valley WD - AEWSD	237	-	-	-	237
Lined Losses - Pools 1-6					
Arvin-Edison WSD (New)	39	-	-	-	39
Cawelo WD - AEWSD	12	-	-	-	12
Improvement District No. 4	9	-	-	-	9
Kern County Water Agency	33	-	-	-	33
Kern Delta Water District	27	-	-	-	27
Rosedale-Rio Bravo WSD	4	-	-	-	4
Unlined Losses - Pools 7					
Improvement District No. 4	46	-	-	-	46
Kern Delta Water District	75	-	-	-	75
River Turnout No. 3					
Improvement District No. 4	627	-	-	-	627
Kern Delta Water District	585	-	-	-	585
Henry C. Garnett Treatment Plant:					
Improvement District No. 4	-	-	-	3,709	3,709
Total	50,449	-	-	3,709	54,158
Existing Participant Deliveries	*40,078*	-	-	*3,709*	*43,787*
New Participant Deliveries	10,371	-	-	-	10,371
	50,449	-	-	3,709	54,158

Shading denotes forward flow deliveries based on each point of entry into the CVC; _/_ denotes pools / pump plants utilized (for forward flow).

Cross Valley Canal - Tupman Turnout Water Balance
State Water Project Deliveries
Month of September 2011
Subject to Adjustment

December 12, 2011
11:18 AM

	Reach 1				Reach 2											Reach 3					Extension					
	Pool 1	Pool 2		Pool 3						Pool 4			Pool 5			Pool 6		Pool 7				Pool 8				
Date	CVC Losses	N-2 Siphon	CVC Losses	RRB 1 Turnout	Strand Siphons	North Strand Turnout	South Strand Turnout	KWB P-11 Turnout	CVC Losses	Nord Siphons	Section 4 Pump	CVC Losses	RTO 1 Turnout	CVC Losses	RRB 2 Turnout	RTO 2 Turnout	CVC Losses	AEWSD T.O.	KTWD Siphons	Unlined Losses	RTO 3 River	RTO 4 Turnout	Unlined Losses	Calloway Turnout	Cawelo PSA	T/O Total
	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP
1	1	46	1	90	59	18	0	92	0	33	89	0	0	1	55	39	1	253	0	5	33	0	0	0	0	816
2	0	47	0	90	58	18	0	92	0	33	88	0	0	0	55	63	0	234	0	5	82	0	0	0	0	865
3	1	46	0	90	58	17	0	92	1	33	88	1	0	0	55	66	0	240	0	5	82	0	0	0	0	875
4	0	46	1	89	59	18	0	92	0	34	88	0	0	1	55	66	1	241	0	5	82	0	0	0	0	878
5	1	45	0	89	58	17	0	92	0	33	88	0	94	0	31	66	0	231	0	3	37	0	0	0	0	885
6	0	47	0	90	58	18	0	88	0	34	88	1	128	0	0	89	1	225	0	0	0	0	0	0	0	867
7	1	47	0	90	59	19	0	83	1	34	88	0	134	1	0	106	0	216	0	0	0	0	0	0	0	879
8	0	46	1	89	59	18	0	83	0	33	88	0	150	0	0	106	1	211	0	0	0	0	0	0	0	885
9	0	47	0	90	59	18	0	83	0	34	85	1	150	0	0	110	0	210	0	0	0	0	0	0	0	887
10	1	46	0	87	24	17	0	27	0	33	60	0	150	1	0	114	0	210	0	0	0	0	0	0	0	790
11	0	46	1	89	0	23	0	0	1	32	83	0	145	0	0	118	1	211	0	0	0	0	0	0	0	750
12	1	46	0	89	32	25	0	37	0	32	88	1	141	1	0	115	0	208	0	0	0	0	0	0	0	816
13	0	45	0	90	61	25	0	83	0	32	87	0	142	0	0	111	1	205	0	0	0	0	0	0	0	882
14	1	46	0	90	60	27	0	83	0	31	89	0	148	0	0	110	0	205	0	0	0	0	0	0	0	890
15	0	46	1	90	60	29	0	83	1	31	90	1	154	1	0	108	0	207	0	0	0	0	0	0	0	902
16	1	46	0	91	60	29	0	83	0	31	90	0	191	0	0	110	1	163	0	0	0	0	0	0	0	896
17	0	47	0	91	61	35	0	65	0	31	89	0	216	0	0	114	0	143	0	0	0	0	0	0	0	892
18	0	46	1	91	60	40	0	55	0	31	90	1	216	1	0	115	0	147	0	0	0	0	0	0	0	894
19	1	47	0	91	61	41	0	56	1	31	90	0	223	0	0	113	1	148	0	0	0	0	0	0	0	904
20	0	47	0	91	60	42	0	56	0	31	90	0	223	0	0	112	0	148	0	0	0	0	0	0	0	900
21	0	47	0	91	61	40	0	56	0	31	90	1	216	1	0	108	1	148	0	0	0	0	0	0	0	691
22	1	50	1	92	60	41	0	55	0	31	90	0	221	0	0	108	0	128	0	0	0	0	0	0	0	878
23	0	23	0	38	29	18	0	18	1	15	59	0	140	1	42	81	0	94	0	0	0	0	0	0	0	559
24	1	37	0	15	35	20	0	15	0	17	51	1	73	0	95	60	1	88	0	0	0	0	0	0	0	509
25	0	57	1	91	77	45	0	56	0	39	86	0	139	1	95	60	0	122	0	0	0	0	0	0	0	869
26	0	20	0	90	59	32	0	54	0	31	84	0	185	0	95	60	0	117	0	13	30	0	0	0	0	870
27	1	0	0	91	58	32	0	53	1	32	84	1	185	0	96	60	1	118	0	7	86	0	0	0	0	906
28	0	0	0	90	59	33	0	52	0	32	85	0	172	1	95	59	0	118	0	6	59	0	0	0	0	861
29	0	0	1	91	58	36	0	51	0	32	91	0	150	0	111	59	1	100	0	6	59	0	0	0	0	846
30	1	34	0	90	22	49	0	60	0	13	95	1	77	0	203	60	0	120	0	6	61	0	0	0	0	892
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CFS	13	1,193	9	2,576	1,584	840	0	1,895	7	920	2,571	10	4,163	11	1,083	2,666	12	5,209	0	61	611	0	0	0	0	25,434
AF	26	2,366	18	5,109	3,142	1,666	0	3,759	14	1,825	5,100	20	8,257	22	2,148	5,288	24	10,332	0	121	1,212	0	0	0	0	50,449

	CVC Losses	N-2 Siphon	CVC Losses	RRB 1 Turnout	Strand Siphons	North Strand Turnout	South Strand Turnout	KWB P-11 Turnout	CVC Losses	Nord Siphons	Section 4 Pump	CVC Losses	RTO 1 Turnout	CVC Losses	RRB 2 Turnout	RTO 2 Turnout	CVC Losses	AEWSD T.O.	KTWD Siphons	Unlined Losses	RTO 3 River	RTO 4 Turnout	Unlined Losses	Calloway Turnout	Cawelo PSA	T/O Total
Lower Tule River Irrigation District - KCWA M/U [1]																										
Belridge WSD		119			153			66			166		104			77										685
Berrenda Mesa WD		34									107		77			398										616
Buena Vista WSD						318																				318
Improvement District No. 4		40			117			433		242	75		363							17	228					1,515
Lost Hills WD		115			166			66			151		99			67										664
Rosedale Rio-Bravo WSD				38		2					11															51
Semitropic WSD		34			73			232		196	135		161													831
Wheeler Ridge - Maricopa WSD		97			119			81			166		66			78										607
Pixley Irrigation District - KCWA M/U [1]																										
Belridge WSD		155			200			85			216		135			102										893
Berrenda Mesa WD		48									148		106			550										852
Buena Vista WSD						342																				342
Kern Delta WD [2]															72	102		154		4	32					364
Lost Hills WD		157			228			143			207		136			92										963
Rosedale Rio-Bravo WSD				22							16															38
Semitropic WSD		46			101			322		272	187		223													1,151
Wheeler Ridge - Maricopa WSD		96			117			79			162		65			77										596
County of Fresno - Arvin-Edison WSD																		726								726
County of Tulare - Arvin-Edison WSD																		726								726
Hills Valley ID - Arvin-Edison WSD																		518								518
Tri-Valley WD - Arvin-Edison WSD																		237								237
Arvin-Edison WSD - Existing																		887								887
Arvin-Edison WSD - New	[illegible]		[illegible]						[illegible]			[illegible]		[illegible]			[illegible]	1,945								1,984
Kern-Tulare Water District - KCWA M/U [1]																										
Belridge WSD		297			384			165			415		259			194										1,714
Berrenda Mesa WD		86									271		194			1,008										1,559
Buena Vista WSD						625																				625
Kern Delta WD [2]															136	182		290		14	64					686
Lost Hills WD		284			411			164			375		244			165										1,643
Rosedale Rio-Bravo WSD				74		4					20															98
Semitropic WSD		84			184			585		494	341		406													2,094
Wheeler Ridge - Maricopa WSD		166			203			138			284		113			133										1,037
Rosedale Rio-Bravo WSD	2		1	3,021		149			1		837															4,011
Arvin-Edison WSD				1,606																						1,608
Kern Delta WD [2]				312											230											542
Improvement District No. 4	2	71	2		206			759	2	425	131	1	637	1			1			29	399					2,666
Arvin-Edison WSD													6		6			50								62
Kern Delta WD [2]															184	216		392		10	124					926
Cawelo Water District		67						47	1																	115
Arvin-Edison WSD [3]													856		771	174		2,049								3,850
Cawelo WD - Belridge WSD [3]	2		1					22				2	3,477	6												3,510
Kern Delta WD [2]	4		3						2			4		6	660	991	8	1,895		44	342					3,959
Kern County Water Agency																										
Belridge WSD	2	116	1		149			64	1		161	1	101			75	1									672
Berrenda Mesa WD	1	34	1		5				1		108	2	77			400	2									631
Buena Vista WSD	1		1			224																				226
Cawelo WD - Arvin-Edison WSD [3]													43		36	9		350								438
Kern Delta WD [2]															53	74		113		3	23					266
Lost Hills WD	2	114	1		165			15	1		151	1	98			66										615
Rosedale Rio-Bravo WSD				34		2																				36
Semitropic WSD	3	34	3		73			233	2	196	136	2	162													844
Wheeler Ridge - Maricopa WSD	1	72			88			60			123	1	49			58										452
Total	26	2,366	18	5,109	3,142	1,666	0	3,759	14	1,825	5,100	20	8,257	22	2,148	5,288	24	10,332	0	121	1,212	0	0	0	0	50,449

NOTES:

[1] Kern County Water Agency Member Units' made deliveries of Federal Section 215 supplies utilizing Lower-Tule River Irrigation District, Pixley Irrigation District and Kern-Tulare Water District capacities per long-term agreements which allow for KCWA M/U's to utilize unused capacities.

[2] Deliveries of Arvin-Edison WSD and Kern Delta WD MWD SWP Table A supplies to River Turnout No. 1 and 2 were delivered to the City of Bakersfield in lieu of Rosedale Rio-Bravo WSD as part of an exchange to accommodate the City of Bakersfield Westside Parkway Project impacts to Rosedale Rio-Bravo WSD conveyance facilities. These deliveries will be paid back by the City ro Rosedale Rio-Bravo WSD.

[3] Deliveries of Cawelo WD SWP Table A supplies delivered to the KWB were transferred to Belridge WSD as part of an exchange of 4,000 af of Belridge WSD Federal supplies delivered off the Friant-Kern Canal to Cawelo WD.

	CVC Losses	N-2 Siphon	CVC Losses	RRB 1 Turnout	Strand Siphons	Strand Turnout	Strand Turnout	KWB P-11 Turnout	CVC Losses	Nord Siphons	Section 4 Pump	CVC Losses	RTO 1 Turnout	CVC Losses	RRB 2 Turnout	RTO 2 Turnout	CVC Losses	AEWSD T.O.	KTWD Siphons	Unlined Losses	RTO 3 River	RTO 4 Turnout	Unlined Losses	Calloway Turnout	Cawelo PSA	T/O Total
Arvin Edison WSD	6	0	4	1,606	0	0	0	0	3	0	0	6	905	9	813	183	11	7,488	0	0	0	0	0	0	0	11,036
Belridge WSD	2	687	1	0	886	0	0	380	1	0	958	1	599	0	0	448	1	0	0	0	0	0	0	0	0	3,964
Berrenda Mesa WD	1	202	1	0	5	0	0	0	1	0	634	2	454	0	0	2,356	2	0	0	0	0	0	0	0	0	3,658
Buena Vista WSD	1	0	1	0	0	1,509	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,511
Cawelo WD	2	67	1	0	0	0	0	69	1	0	0	2	3,477	6	0	0	0	0	0	0	0	0	0	0	0	3,625
Improvement District No. 4	2	111	2	0	323	0	0	1,192	2	667	206	1	1,000	1	0	0	1	0	0	46	627	0	0	0	0	4,181
Kern Delta WD	4	0	3	312	0	0	0	0	2	0	0	4	0	6	1,335	1,565	8	2,844	0	75	585	0	0	0	0	6,743
Lost Hills WD	2	670	1	0	970	0	0	388	1	0	884	1	577	0	0	390	1	0	0	0	0	0	0	0	0	3,885
Rosedale Rio-Bravo WSD	2	0	1	3,189	0	157	0	0	1	0	884	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,234
Semitropic WSD	3	198	3	0	431	0	0	1,372	2	1,158	799	2	952	0	0	0	0	0	0	0	0	0	0	0	0	4,920
Wheel Ridge - Maricopa WSD	1	431	0	0	527	0	0	358	0	0	735	1	293	0	0	346	0	0	0	0	0	0	0	0	0	2,692
Total	26	2,366	18	5,109	3,142	1,666	0	3,759	14	1,825	5,100	20	8,257	22	2,148	5,288	24	10,332	0	121	1,212	0	0	0	0	50,449

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
01/06/2012	02/06/2012

INVOICE NO. 24924

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0053-1330(PWR)
561B-4402

Cross Valley Canal
October 2011

Estimated power costs for deliveries of Kern Delta Water District Metropolitan Water District SWP supplies delivered to River Turnout No. 2 and 3, Rosedale Rio-Bravo WSD and Arvin-Edison WSD; adjust for lined losses.

Canal Reach	Pumping Plant	MWD SWP Volume AF	Rate $/AF	Pumping Costs $
1	1	1,551	3.25	5,040.75
1	2	1,550	3.25	5,037.50
2	3	978	3.25	3,178.50
2	4	977	3.25	3,175.25
2	5	976	5.00	4,880.00
3	6	441	5.00	2,205.00
Extension	7	0	5.00	0.00

TOTAL AMOUNT DUE **$23,517.00**

Requested By	Prepared By	Approved By	Approved By

☐ ORIGINAL ☑ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
01/06/2012	02/06/2012

INVOICE NO. 24969

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0055-1100
580B-4430
020A-5103
0102-1100

Cross Valley Canal
October 2011

Early implementation conveyance fees in the Cross Valley Canal for delivery of Kern Delta Water District deliveries of Metropoitan WD State Water Project supplies to Arvin-Edison WSD and Rosedale Rio-Bravo WSD; adjusted for lined losses.

Reach	MWD SWP Volume AF	Total $/AF [1]	Conveyance Costs Total $
1	1,552	1.00	1,552.00
2	979	1.00	979.00
3	443	1.00	443.00
		Total Amount Due	2,974.00

TOTAL AMOUNT DUE **$ 2,974.00**

[1] Conveyance Fee $1.00 per Reach.

Requested By | Prepared By | Approved By | Approved By

☐ ORIGINAL ☑ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

Cross Valley Canal

October 2011 Deliveries - Gross AF

	Points of Entry				
	Tupman T/O SWP (AF)	CVC Dewatering Deliveries (AF)	Pionner Inlet KR (AF)	KCWA Armco Reverse SWP Exch. (AF)	CVC Total (AF)
Deliveries by Turnout:					
N-2 Siphon	597	-	-	-	597
Rosedale Rio Bravo Turnout No. 1	2,918	232	-	-	3,150
North Strand Ranch Turnout	1,726	-	-	-	1,726
South Strand Ranch Turnout	276	-	-	-	276
Kern Water Bank P-11 Turnout	1,224	-	-	-	1,224
Section 4 Turnout	2,741	-	-	-	2,741
River Turnout No. 1	4,491	81	-	-	4,572
Rosedale Rio Bravo Turnout No. 2	7,053	-	-	-	7,053
River Turnout No. 2	1,252	52	-	-	1,304
Arvin-Edison Turnout	2,698	-	-	-	2,698
Refill	365	-	-	-	365
Lined Losses - Pools 1-6	80	-	-	-	80
River Turnout No. 3 to River	797	-	-	-	797
Unlined Losses - Pool 7	125	-	-	-	125
Henry C. Garnett Treatment Plant	-	-	-	3,709	3,709
Total	26,343	365	-	3,709	30,417
Deliveries by Turnout/Owner:					
N-2 Siphon					
Cawelo WD	597	-	-	-	597
Rosedale-Rio Bravo Turnout No. 1					
Cawelo WD - AEWSD	193	-	-	-	193
Improvement District No. 4 - KDWSD	136	-	-	-	136
Kern County Water Agency	89	-	-	-	89
Kern Delta Water District	571	-	-	-	571
Kern-Tulare WD - KCWA M/U	162	-	-	-	162
Lower Tule River ID - KCWA M/U	276	-	-	-	276
Pixley ID - KCWA M/U	276	-	-	-	276
Rosedale-Rio Bravo WSD	1,215	232	-	-	1,447
Nouth Strand Turnout					
Kern County Water Agency	153	-	-	-	153
Kern-Tulare WD - KCWA M/U	252	-	-	-	252
Rosedale-Rio Bravo WSD	1,321	-	-	-	1,321
South Strand Turnout					
Kern County Water Agency	12	-	-	-	12
Kern-Tulare WD - KCWA M/U	20	-	-	-	20
Rosedale-Rio Bravo WSD	244	-	-	-	244
Kern Water Bank P-11 Turnout					
Cawelo WD	808	-	-	-	808
Kern County Water Agency	298	-	-	-	298
Kern-Tulare WD - KCWA M/U	118	-	-	-	118
Section 4 Turnout					
Improvement District No. 4	46	-	-	-	46
Improvement District No. 4 - KCWA	565	-	-	-	565
Kern County Water Agency	653	-	-	-	653
Kern-Tulare WD - KCWA M/U	1,477	-	-	-	1,477
River Turnout No. 1					
Cawelo WD	775	14	-	-	789
Improvement District No. 4	19	-	-	-	19
Improvement District No. 4 - KCWA	1,935	35	-	-	1,970
Kern County Water Agency	557	32	-	-	589
Kern-Tulare WD - KCWA M/U	1,205	-	-	-	1,205
Rosedale Rio Bravo Turnout No. 2					
Cawelo WD - AEWSD	1,460	-	-	-	1,460
Improvement District No. 4	627	-	-	-	627
Improvement District No. 4 - KDWD	130	-	-	-	130
Kern County Water Agency	30	-	-	-	30
Kern Delta Water District	533	-	-	-	533
Kern-Tulare WD - KCWA M/U	59	-	-	-	59
Lower Tule River ID - KCWA M/U	2,107	-	-	-	2,107
Pixley ID - KCWA M/U	2,107	-	-	-	2,107
Rosedale-Rio Bravo WSD	-	52	-	-	52
River Turnout No. 2					
Kern County Water Agency	396	-	-	-	396
Kern-Tulare WD - KCWA M/U	856	-	-	-	856
Arvin-Edison Turnout					
Arvin-Edison WSD (Existing)	315	-	-	-	315
Arvin-Edison WSD (New)	975	-	-	-	975
Cawelo WD - AEWSD	266	-	-	-	266
County of Fresno - AEWSD	225	-	-	-	225
County of Tulare - AEWSD	225	-	-	-	225
Hills Valley ID - AEWSD	168	-	-	-	168
Improvement District No. 4 - AEWSD	189	-	-	-	189
Improvement District No. 4 - KDWD	24	-	-	-	24
Kern County Water Agency	117	-	-	-	117
Kern Delta Water District	99	-	-	-	99
Kern-Tulare WD - KCWA M/U	11	-	-	-	11
Tri-Valley WD - AEWSD	84	-	-	-	84
Lined Losses - Pools 1-6					
Arvin-Edison WSD (New)	35	-	-	-	35
Cawelo WD	10	-	-	-	10
Improvement District No. 4	6	-	-	-	6
Improvement District No. 4 - KCWA	12	-	-	-	12
Kern County Water Agency	4	-	-	-	4
Kern Delta Water District	7	-	-	-	7
Kern Tulare Water District	2	-	-	-	2
Rosedale-Rio Bravo WSD	4	-	-	-	4
Refill					
Cawelo WD	14	-	-	-	14
Improvement District No. 4 - KCWA	35	-	-	-	35
Kern County Water Agency	32	-	-	-	32
Rosedale-Rio Bravo WSD	284	-	-	-	284
Unlined Losses - Pools 7					
Improvement District No. 4	50	-	-	-	50
Kern County Water Agency	3	-	-	-	3
Kern Delta Water District	65	-	-	-	65
Kern Tulare Water District	7	-	-	-	7
River Turnout No. 3					
Improvement District No. 4	476	-	-	-	476
Kern County Water Agency	13	-	-	-	13
Kern Delta Water District	277	-	-	-	277
Kern Tulare Water District	31	-	-	-	31
Henry C. Garnett Treatment Plant:					
Improvement District No. 4	-	-	-	3,709	3,709
Total	26,343	365	-	3,709	30,417
Existing Participant Deliveries	*21,459*	*333*	-	*3,709*	*19,219*
New Participant Deliveries	4,884	32	-	-	11,198
	26,343	365	-	3,709	30,417

Shading denotes forward flow deliveries based on each point of entry into the CVC; _ / _ denotes pools / pump plants utilized (for forward flow).

Kern County Water Agency
Cross Valley Canal - Tupman Turnout Water Balance
State Water Project Deliveries
Month of October 2011
Subject to Adjustment

January 5, 2012
10:27 AM

	Reach 1											Reach 2								Reach 3									Extension			
	Pool 1		Pool 2			Pool 3						Pool 4				Pool 5			Pool 6				Pool 7				Pool 8				
Date	CVC Losses SWP	CVC Refill SWP	N-2 Siphon SWP	CVC Losses SWP	RRB 1 Turnout SWP	Strand Siphons SWP	North Strand Turnout SWP	South Strand Turnout SWP	KWB P-11 Turnout SWP	CVC Losses SWP	CVC Refill SWP	Nord Siphons SWP	Section 4 Pump SWP	CVC Losses SWP	CVC Refill SWP	RTO 1 Turnout SWP	CVC Losses SWP	CVC Refill SWP	RRB 2 Turnout SWP	RTO 2 Turnout SWP	CVC Losses SWP	CVC Refill SWP	AEWSD T.O. SWP	KTWD Siphons SWP	Unlined Losses SWP	RTO 3 River SWP	RTO 4 Turnout SWP	Unlined Losses SWP	Calloway Turnout SWP	Cawelo PSA SWP	T/O Total SWP
1	0	0	48	1	90	0	51	0	68	0	0	0	94	0	0	27	1	0	230	38	0	0	145	0	5	60	0	0	0	0	858
2	1	0	49	0	90	0	50	0	68	0	0	0	94	1	0	27	0	0	242	60	1	0	139	0	5	60	0	0	0	0	887
3	0	0	49	0	90	0	51	0	69	1	0	0	94	0	0	26	0	0	247	59	0	0	135	0	5	61	0	0	0	0	887
4	1	0	48	1	90	0	55	0	67	0	0	0	93	1	0	113	1	0	247	60	1	0	89	0	2	25	0	0	0	0	894
5	0	0	48	0	90	0	59	0	66	0	0	0	91	0	0	175	0	0	248	60	0	0	56	0	0	0	0	0	0	0	893
6	1	0	49	0	90	0	61	0	59	1	0	0	90	0	0	219	1	0	249	23	1	0	53	0	0	0	0	0	0	0	897
7	0	0	10	0	90	0	65	0	51	0	0	0	89	1	0	276	0	0	248	0	0	0	51	0	0	0	0	0	0	0	881
8	0	0	0	0	90	0	64	0	52	0	0	0	89	0	0	295	1	0	248	0	1	0	51	0	0	0	0	0	0	0	891
9	0	0	0	0	90	0	55	0	44	1	0	0	91	0	0	295	0	0	181	0	0	0	20	0	0	0	0	0	0	0	777
10	0	0	0	0	38	0	20	0	15	0	0	0	34	1	0	123	0	0	54	0	0	0	0	0	0	0	0	0	0	0	285
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	1	74	0	0	33	0	21	0	22	0	28	0	29	0	26	20	0	29	42	13	0	26	0	0	0	0	0	0	0	0	181
25	0	0	0	1	84	0	36	0	36	1	0	0	63	1	0	53	0	0	177	43	1	0	30	0	15	19	0	0	0	0	560
26	1	0	0	0	63	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72
27	0	0	0	0	83	0	41	17	0	0	0	0	57	0	0	78	1	0	146	35	1	0	71	0	7	17	0	0	0	0	554
28	1	0	0	1	90	0	61	30	0	1	0	0	94	1	0	136	0	0	249	60	0	0	132	0	6	40	0	0	0	0	902
29	0	0	0	0	90	0	59	31	0	0	0	0	94	0	0	131	1	0	250	60	1	0	129	0	6	40	0	0	0	0	892
30	1	0	0	0	90	0	56	30	0	0	0	0	93	1	0	132	0	0	249	60	0	0	129	0	6	40	0	0	0	0	887
31	0	0	0	1	90	0	57	31	0	1	0	0	93	0	0	138	1	0	248	60	1	0	130	0	6	40	0	0	0	0	697
CFS	7	74	301	5	1,471	0	870	139	617	6	28	0	1,382	7	26	2,264	7	29	3,556	631	8	26	1,360	0	63	402	0	0	0	0	13,279
AF	14	147	597	10	2,918	0	1,726	276	1,224	12	56	0	2,741	14	52	4,491	14	58	7,053	1,252	16	52	2,698	0	125	797	0	0	0	0	26,343

Buena Vista Water Storage Dist. - AEWSD [1]																															
Arvin-Edison WSD																															
Kern Delta Water Dist. - KCWA M/U [2]																															
Arvin-Edison WSD																															
Buena Vista Water Storage Dist.																															
Kern Delta WD																															
Lost Hills WD																															
Rosedale-Rio Bravo WSD																															
Semitropic WSD																															
Tejon-Castac WD																															
Arvin-Edison Water Storage District																															
Improvement District No. 4	1			1					1			46	1		19	1		627		1				34	388					1,120
Arvin-Edison WSD																							189								189
Improvement District No. 4 / KCWA	3			2					2			565	3	8	1,935	2	27														2,547
Kern Delta WD					136													130					24		16	88					394
Lost Hills WD																															
Rosedale-Rio Bravo WSD																															
Semitropic WSD																															
Tejon-Castac WD																															
Wheeler Ridge-Maricopa WSD																															
Total	14	147	597	10	2,918	0	1,726	276	1,224	12	56	0	2,741	14	52	4,491	14	58	7,053	1,252	16	52	2,698	0	125	797	0	0	0	0	26,343

NOTES:

[1] Arvin-Edison Water Storage District made deliveries of Metropolitan Water District State Water Project Table A supplies utilizing Lower-Tule River Irrigation District and Pixley Irrigation District capacities per a short-term agreement with North Kern WSD (per the Agreement for the Management of Conveyance Capacity in the Cross Valley Canal Capacity).

[2] Kern County Water Agency Member Units' made deliveries of State Water Project Table A supplies utilizing Lower-Tule River Irrigation District, Pixley Irrigation District and Kern-Tulare Water District capacities per long-term agreements which allow for KCWA M/U's to utilize unused capacities.

[3] Deliveries of Cross Valley Canal refill water by Rosedale Rio-Bravo WSD and the Kern County Water Agency M/U's with their 2011 State Water Project Table A supply were made persuant to the Refill/Dewatering Policy Guidelines. Rosedale Rio-Bravo and the KCWA Member Units' received dewatering supplies in October 2011 (see attached delivery summary) and were subsquently responsible for refilling the Cross Valley Canal based upon the total dewatered supplies received.

[4] In the month of October 2011, Arvin-Edison WSD delivered 632 af of Arvin-Edison WSD Federal supplies to the AEWSD Turnout as part of an operational exchange for 632 af of MWD State Water Project Table A supplies at Rosedale Rio-Bravo Turnout No. 2.

Kern County Water Agency
Cross Valley Canal
Dewatering for Maintenance Deliveries
Month of October 2011
Subject to Adjustment

January 10, 2012
2:09 PM

	Reach 1				Reach 2											Reach 3		Extension								
	Pool 1	Pool 2			Pool 3					Pool 4			Pool 5		Pool 6			Pool 7		Pool 8						
Date	CVC Losses SWP	N-2 Siphon SWP	CVC Losses SWP	RRB 1 Turnout SWP	Strand Siphons SWP	North Strand Turnout SWP	South Strand Turnout SWP	KWB P-11 Turnout SWP	CVC Losses SWP	Nord Siphons SWP	Section 4 Pump SWP	CVC Losses SWP	RTO 1 Turnout SWP	CVC Losses SWP	RRB 2 Turnout SWP	RTO 2 Turnout SWP	CVC Losses SWP	AEWSD T.O. SWP	KTWD Siphons SWP	Unlined Losses SWP	RTO 3 River SWP	RTO 4 Turnout SWP	Unlined Losses SWP	Calloway Turnout SWP	Cawelo PSA SWP	T/O Total
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	39	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	53
11	0	0	0	31	0	0	0	0	0	0	0	0	9	0	12	0	0	0	0	0	0	0	0	0	0	52
12	0	0	0	26	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	33
13	0	0	0	21	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	26
14	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
15	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
16	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
17	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CFS	0	0	0	117	0	0	0	0	0	0	0	0	41	0	26	0	0	0	0	0	0	0	0	0	0	184
AF	0	0	0	232	0	0	0	0	0	0	0	0	81	0	52	0	0	0	0	0	0	0	0	0	0	365
Total	0	0	0	232	0	0	0	0	0	0	0	0	81	0	52	0	0	0	0	0	0	0	0	0	0	365

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
01/18/2012	02/17/2012

INVOICE NO. 25021

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0053-1330(PWR)
561B-4402

Cross Valley Canal
November 2011

Estimated power costs for deliveries of Kern Delta Water District Metropolitan Water District SWP supplies delivered to River Turnout No. 1, 2 and 3, Rosedale Rio-Bravo WSD and Arvin-Edison WSD; adjust for lined losses.

Canal Reach	Pumping Plant	MWD SWP Volume AF	Rate $/AF	Pumping Costs $
1	1	3,995	2.25	8,988.75
1	2	3,993	2.25	8,984.25
2	3	2,256	2.25	5,076.00
2	4	2,254	2.25	5,071.50
2	5	2,252	2.25	5,067.00
3	6	1,730	2.25	3,892.50
Extension	7	0	2.25	0.00
		TOTAL AMOUNT DUE		**$37,080.00**

Requested By	Prepared By	Approved By	Approved By

☐ ORIGINAL ☐ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
01/18/2012	02/17/2012

INVOICE NO. 25023

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0055-1100
580B-4430
020A-5103
0102-1100

Cross Valley Canal
November 2011

Early implementation conveyance fees in the Cross Valley Canal for delivery of Kern Delta Water District deliveries of Metropoitan WD State Water Project supplies to Arvin-Edison WSD and Rosedale Rio-Bravo WSD; adjusted for lined losses.

Reach	MWD SWP Volume AF	Total $/AF [1]	Conveyance Costs Total $
1	3,998	1.00	3,998.00
2	3,012	1.00	3,012.00
3	1,732	1.00	1,732.00
		Total Amount Due	8,742.00

TOTAL AMOUNT DUE **$ 8,742.00**

[1] Conveyance Fee $1.00 per Reach.

Requested By | Prepared By | Approved By | Approved By

☐ ORIGINAL ☐ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
02/13/2012	03/14/2012

INVOICE NO. 25088

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0055-1100
580B-4430
020A-5103
0102-1100

Cross Valley Canal
December 2011

Early implementation conveyance fees in the Cross Valley Canal for delivery of Kern Delta Water District deliveries of San Bernardino Valley MWD State Water Project supplies to Arvin-Edison WSD and Rosedale Rio-Bravo WSD; adjusted for lined losses.

Reach	MWD SWP Volume AF	Total $/AF [1]	Conveyance Costs Total $
1	3,858	1.00	3,858.00
2	3,395	1.00	3,395.00
3	3,010	1.00	3,010.00
		Total Amount Due	10,263.00

TOTAL AMOUNT DUE **$ 10,263.00**

[1] Conveyance Fee $1.00 per Reach.

Requested By | Prepared By | Approved By | Approved By

☐ ORIGINAL ☑ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

Cross Valley Canal

December 2011 Deliveries - Gross AF

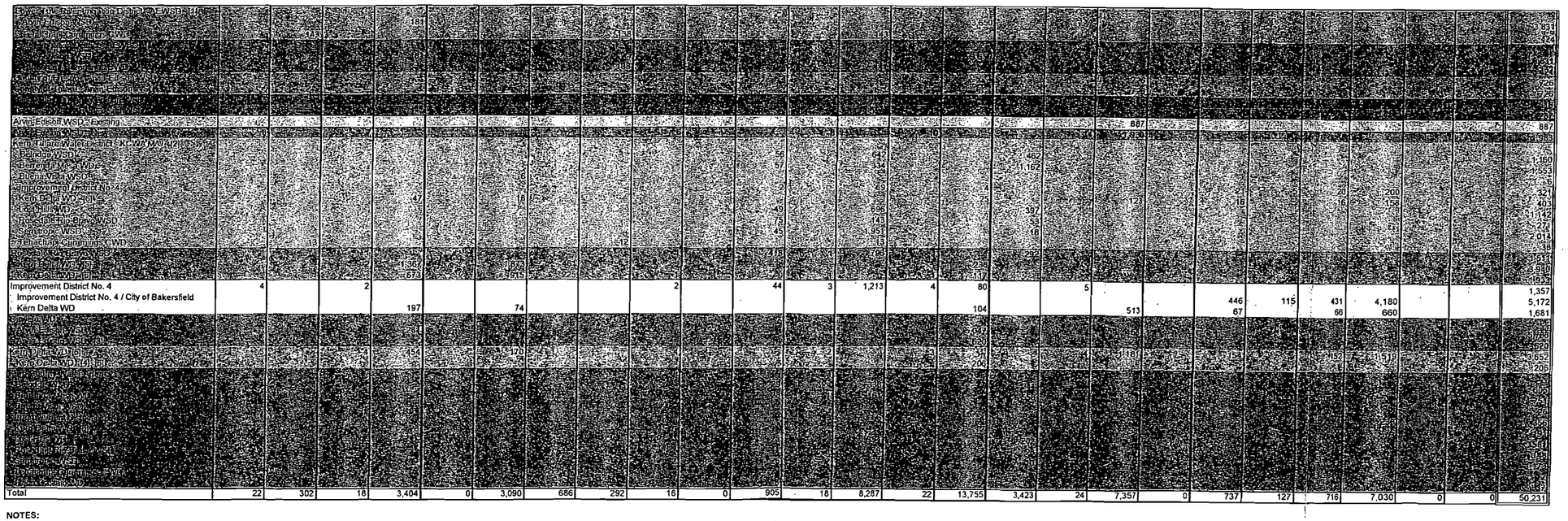
Deliveries by Turnout:	Points of Entry				
	Tupman T/O SWP (AF)	Tupman T/O FK Recirculation (AF)	Pionner Inlet KR (AF)	KCWA Armco Reverse SWP Exch. (AF)	CVC Total (AF)
N-2 Siphon	302	-	-	-	302
Rosedale Rio Bravo Turnout No. 1	3,404	-	-	-	3,404
North Strand Ranch Turnout	3,090	-	-	-	3,090
South Strand Ranch Turnout	686	-	-	-	686
Kern Water Bank P-11 Turnout	292	-	-	-	292
Section 4 Turnout	905	141	-	-	1,046
River Turnout No. 1	8,287	2,196	-	-	10,483
Rosedale Rio Bravo Turnout No. 2	13,755	-	-	-	13,755
River Turnout No. 2	3,423	861	-	-	4,284
Arvin-Edison Turnout	7,357	-	-	-	7,357
Lined Losses - Pools 1-6	120	13	-	-	133
River Turnout No. 3 to River	127	-	-	-	127
Unlined Losses - Pool 7	737	-	-	-	737
River Turnout No. 4 to River	7,030	-	-	-	7,030
Henry C. Garnett Treatment Plant	-	-	-	3,247	3,247
Unlined Losses - Pool 8	716	-	-	-	716
Total	50,231	3,211	-	3,247	56,689
Deliveries by Turnout/Participant:					
N-2 Siphon					
Tehachapi-Cummings CWD	302	-	-	-	302
Rosedale-Rio Bravo Turnout No. 1					
Arvin-Edison WSD	643	-	-	-	643
Kern Delta Water District	2,761	-	-	-	2,761
Nouth Strand Turnout					
Buena Vista WSD	32	-	-	-	32
Kern Delta Water District	3,058	-	-	-	3,058
South Strand Turnout					
Kern Delta Water District	686	-	-	-	686
Kern Water Bank P-11 Turnout					
Tehachapi-Cummings CWD	292	-	-	-	292
Section 4 Turnout					
Belridge WSD	85	61	-	-	146
Berrenda Mesa WD	85	20	-	-	105
Improvement District No. 4	48	-	-	-	48
Lost Hills WD	74	60	-	-	134
Rosedale-Rio Bravo WSD	534	-	-	-	534
Semitropic WSD	71	-	-	-	71
Tejon Castaic WD	8	-	-	-	8
River Turnout No. 1					
Belridge WSD	978	941	-	-	1,919
Berrenda Mesa WD	495	315	-	-	810
Improvement District No. 4	1,338	-	-	-	1,338
Lost Hills WD	1,050	940	-	-	1,990
Rosedale-Rio Bravo WSD	1,018	-	-	-	1,018
Semitropic WSD	3,078	-	-	-	3,078
Tehachapi-Cummings CWD	301	-	-	-	301
Tejon Castaic WD	29	-	-	-	29
Rosedale Rio Bravo Turnout No. 2					
Arvin-Edison WSD	12,967	-	-	-	12,967
Improvement District No. 4	88	-	-	-	88
Kern Delta Water District	700	-	-	-	700
River Turnout No. 2					
Belridge WSD	703	335	-	-	1,038
Berrenda Mesa WD	1,720	216	-	-	1,936
Lost Hills WD	599	310	-	-	909
Rosedale-Rio Bravo WSD	373	-	-	-	373
Semitropic WSD	28	-	-	-	28
Arvin-Edison Turnout					
Arvin-Edison WSD	5,482	-	-	-	5,482
Kern Delta Water District	1,875	-	-	-	1,875
Lined Losses - Pools 1-6					
Arvin-Edison WSD	53	-	-	-	53
Belridge WSD	-	6	-	-	6
Berrenda Mesa WD	4	2	-	-	6
Improvement District No. 4	20	-	-	-	20
Kern Delta Water District	28	-	-	-	28
Lost Hills WD	-	5	-	-	5
Rosedale-Rio Bravo WSD	5	-	-	-	5
Semitropic WSD	10	-	-	-	10
River Turnout No. 3					
Improvement District No. 4	127	-	-	-	127
Unlined Losses - Pools 7					
Improvement District No. 4	492	-	-	-	492
Kern Delta Water District	245	-	-	-	245
River Turnout No. 4					
Improvement District No. 4	4,618	-	-	-	4,618
Kern Delta Water District	2,412	-	-	-	2,412
Henry C. Garnett Treatment Plant:					
Improvement District No. 4	-	-	-	3,247	3,247
Unlined Losses - Pools 8					
Improvement District No. 4	475	-	-	-	475
Kern Delta Water District	241	-	-	-	241
Total	50,231	3,211	-	3,247	56,689
Existing Participant Deliveries	*28,281*	-	-	*3,247*	*31,528*
New Participant Deliveries	21,950	3,211	-	-	25,161
	50,231	3,211	-	3,247	56,689

Shading denotes forward flow deliveries based on each point of entry into the CVC; _/_ denotes pools / pump plants utilized (for forward flow).

Kern County Water Agency
Cross Valley Canal - Tupman Turnout Water Balance
State Water Project Deliveries
Month of December 2011
Subject to Adjustment

February 10, 2012
11:50 AM

	Reach 1				Reach 2										Reach 3				Extension					
	Pool 1	Pool 2	Pool 3							Pool 4		Pool 5		Pool 6	Pool 7			Pool 8					
Date	CVC Losses SWP	N-2 Siphon SWP	CVC Losses SWP	RRB 1 Turnout SWP	Strand Siphons SWP	North Strand Turnout SWP	South Strand Turnout SWP	KWB P-11 Turnout SWP	CVC Losses SWP	Nord Siphons SWP	Section 4 Pump SWP	CVC Losses SWP	RTO 1 Turnout SWP	CVC Losses SWP	RRB 2 Turnout SWP	RTO 2 Turnout SWP	CVC Losses SWP	AEWSD T.O. SWP	KTWD Siphons SWP	Unlined Losses SWP	RTO 3 River SWP	Unlined Losses SWP	RTO 4 Turnout SWP	Calloway Turnout SWP	Cawelo PSA SWP	T/O Total SWP
1	0	0	1	63	0	77	12	0	1	0	93	0	117	1	250	77	1	100	0	12	0	15	76	0	0	896
2	1	0	0	62	0	76	11	0	0	0	90	1	105	0	251	76	0	98	0	12	0	15	73	0	0	871
3	0	0	0	63	0	74	11	0	0	0	85	0	113	0	250	75	0	91	0	12	0	15	73	0	0	862
4	1	0	1	62	0	76	11	0	1	0	79	0	126	1	250	77	1	91	0	12	0	15	73	0	0	877
5	0	0	0	63	0	78	11	0	0	0	34	1	177	0	250	80	0	91	0	12	0	12	73	0	0	882
6	1	0	0	63	0	73	11	0	0	0	0	0	191	0	252	80	1	112	0	12	0	12	73	0	0	881
7	0	0	0	62	0	65	11	0	0	0	0	0	185	1	251	80	0	133	0	12	0	12	73	0	0	886
8	1	0	1	60	0	65	11	0	1	0	0	1	196	0	250	80	1	133	0	12	0	12	74	0	0	898
9	0	0	0	60	0	64	12	0	0	0	0	0	162	0	251	68	0	145	0	12	0	11	97	0	0	882
10	0	0	0	60	0	64	12	0	0	0	0	0	196	1	250	57	0	118	0	12	0	11	114	0	0	895
11	1	0	1	60	0	60	12	0	0	0	0	1	199	0	250	56	1	94	0	12	0	11	119	0	0	877
12	0	0	0	60	0	62	12	0	1	0	0	0	201	1	250	55	0	94	0	12	0	11	119	0	0	878
13	1	0	0	60	0	62	12	0	0	0	0	0	179	0	252	55	1	117	0	12	0	11	117	0	0	879
14	0	0	0	60	0	61	12	0	0	0	0	1	182	0	252	56	0	136	0	12	0	11	115	0	0	898
15	1	0	1	60	0	60	12	0	0	0	0	0	158	1	249	56	0	135	0	12	0	11	115	0	0	871
16	0	0	0	54	0	52	12	0	1	0	0	0	174	0	250	56	1	136	0	12	0	11	132	0	0	891
17	1	0	0	52	0	46	12	0	0	0	0	1	182	0	250	56	0	136	0	12	0	11	152	0	0	911
18	0	0	1	52	0	41	12	0	0	0	0	0	170	1	250	55	0	145	0	12	0	11	152	0	0	902
19	0	0	0	52	0	42	13	0	0	0	0	0	134	0	250	57	1	181	0	12	0	11	149	0	0	902
20	1	0	0	51	0	42	13	0	1	0	0	1	142	0	221	67	0	184	0	12	0	11	150	0	0	896
21	0	0	0	50	0	35	11	0	0	0	0	0	59	1	200	56	1	144	0	12	0	11	152	0	0	732
22	0	0	1	37	0	26	8	0	0	0	0	0	31	0	202	32	0	132	0	12	4	11	99	0	0	595
23	1	0	0	50	0	27	9	0	0	0	0	1	93	1	200	51	0	149	0	12	8	11	143	0	0	756
24	0	0	0	50	0	28	11	0	0	0	0	0	93	0	200	53	1	154	0	12	8	11	140	0	0	761
25	0	0	1	50	0	28	10	0	0	0	0	0	93	1	200	35	0	170	0	12	8	11	140	0	0	759
26	0	0	0	50	0	28	11	0	0	0	0	1	93	0	201	23	0	185	0	12	8	11	140	0	0	763
27	0	0	0	50	0	28	10	0	0	0	0	0	93	0	200	41	1	165	0	12	8	11	140	0	0	759
28	1	30	0	50	0	28	10	29	1	0	0	0	153	0	138	28	0	108	0	12	8	11	140	0	0	747
29	0	52	0	50	0	27	10	50	0	0	0	0	173	0	129	28	1	32	0	12	8	11	140	0	0	723
30	0	52	0	50	0	27	10	50	0	0	29	0	8	1	141	35	0	0	0	12	4	11	110	0	0	540
31	0	18	1	50	0	36	11	18	1	0	46	0	0	0	145	25	0	0	0	12	0	11	80	0	0	454
CFS	11	152	9	1,716	0	1,558	346	147	8	0	456	9	4,178	11	6,935	1,726	12	3,709	0	372	64	361	3,544	0	0	25,324
AF	22	302	18	3,404	0	3,090	686	292	16	0	905	18	8,287	22	13,755	3,423	24	7,357	0	737	127	716	7,030	0	0	50,231



	CVC Losses	N-2 Siphon	CVC Losses	RRB 1 Turnout	Strand Siphons	Strand Turnout	Strand Turnout	KWB P-11 Turnout	CVC Losses	Nord Siphons	Section 4 Pump	CVC Losses	RTO 1 Turnout	CVC Losses	RRB 2 Turnout	RTO 2 Turnout	CVC Losses	AEWSD T.O.	KTWD Siphons	Unlined Losses	RTO 3 River	Unlined Losses	RTO 4 Turnout	Calloway Turnout	Cawelo PSA	T/O Total
Arvin Edison WSD	8	0	7	643	0	0	0	0	6	0	0	8	0	10	12,967	0	14	5,482	0	0	0	0	0	0	0	19,145
Belridge WSD	0	0	0	0	0	0	0	0	0	0	85	0	978	0	0	703	0	0	0	0	0	0	0	0	0	1,766
Berrenda Mesa WD	1	0	0	0	0	0	0	0	0	0	85	1	495	1	0	1,720	1	0	0	0	0	0	0	0	0	2,304
Buena Vista WSD	0	0	0	0	0	32	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32
Improvement District No. 4	4	0	2	0	0	0	0	0	2	0	44	3	1,338	4	88	0	5	0	0	492	127	475	4,618	0	0	7,206
Kern Delta WD	6	0	6	2,761	0	3,058	686	0	5	0	0	3	0	4	700	0	4	1,875	0	245	0	241	2,412	0	0	12,006
Lost Hills WD	0	0	0	0	0	0	0	0	0	0	74	0	1,050	0	599	0	0	0	0	0	0	0	0	0	0	1,723
Rosedale Rio-Bravo WSD	1	0	1	0	0	0	0	0	1	0	534	1	1,018	2	0	373	0	0	0	0	0	0	0	0	0	1,930
Semitropic WSD	2	0	2	0	0	0	0	0	2	0	71	2	3,078	2	0	28	0	0	0	0	0	0	0	0	0	3,187
Tehachapi-Cummings CWD	0	302	0	0	0	0	0	292	0	0	8	0	301	0	0	0	0	0	0	0	0	0	0	0	0	895
Tejon Castaic WD	0	0	0	0	0	0	0	0	0	0	8	0	29	0	0	0	0	0	0	0	0	0	0	0	0	37
Total	22	302	18	3,404	0	3,090	686	292	16	0	905	18	8,287	22	13,755	3,423	24	7,357	0	737	127	716	7,030	0	0	50,231

NOTES:
[1] Arvin-Edison Water Storage District made deliveries of Metropolitan Water District State Water Project Table A supplies utilizing Lower-Tule River Irrigation District and Pixley Irrigation District capacities per a short-term agreement with North Kern WSD (per the Agreement for the Management of Conveyance Capacity in the Cross Valley Canal Capacity).
[2] Kern County Water Agency Member Units' made deliveries of State Water Project Table A supplies utilizing Kern-Tulare Water District capacities per long-term agreements which allow for KCWA M/U's to utilize unused capacities.
[3] Arvin-Edison WSD delivered a total of 620 af of AEWSD/MWD SWP supplies at Rosedale Turnout No. 2 as part of an operational exchange for 620 af of Arvin-Edison WSD Friant-Kern supplies delivered to the Arvin-Edison Intake Canal.
[4] Kern Delta Water District delivered a total of 206 af to Arvin-Edison WSD at Rosedale Turnout No. 2 as part of an operational exchange for 206 af of Arvin-Edison WSD Friant-Kern supplies at the Arvin-Edison Intake Canal off the Friant-Kern Canal.
[5] Kern Delta Water District delivered a total of 3,940 af of Metropolitan WD SWP supplies in December 2011.
[6] Kern Delta Water District delivered a total of 8,066 af of San Bernardino Valley Municipal Water District SWP supplies in December 2011.

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
02/13/2012	03/14/2012

INVOICE NO. 25085

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0053-1330(PWR)
561B-4402

Cross Valley Canal
December 2011

Estimated power costs for deliveries of Kern Delta Water District San Bernardino Valley Municipal Water District SWP supplies delivered to River Turnout No. 1, 2 and 4, Rosedale Rio-Bravo WSD and Arvin-Edison WSD; adjust for lined losses.

Canal Reach	Pumping Plant	SBVMWD SWP Volume AF	Rate $/AF	Pumping Costs $
1	1	3,853	2.25	8,669.25
1	2	3,849	2.25	8,660.25
2	3	3,221	2.25	7,247.25
2	4	3,219	2.25	7,242.75
2	5	3,216	2.25	7,236.00
3	6	3,006	2.25	6,763.50
Extension	7	1,671	2.25	3,759.75
			TOTAL AMOUNT DUE	**$49,578.75**

Requested By	Prepared By	Approved By	Approved By

☐ ORIGINAL ☑ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
03/08/2012	04/09/2012

INVOICE NO. 25191

RECEIVED
MAR 12 2012

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0053-1330(PWR)
561B-4402

Cross Valley Canal
January 2012

Estimated power costs for deliveries of Kern Delta Water District San Bernardino Valley Municipal Water District SWP supplies delivered to River Turnout No. 1, 2 and 4, Rosedale Rio-Bravo WSD and Arvin-Edison WSD; adjust for lined losses.

Canal Reach	Pumping Plant	SBVMWD SWP Volume AF	Rate $/AF	Pumping Costs $
1	1	12,515	2.25	28,158.75
1	2	12,502	2.25	28,129.50
2	3	11,881	2.25	26,732.25
2	4	11,867	2.25	26,700.75
2	5	11,849	2.25	26,660.25
3	6	9,360	2.25	21,060.00
Extension	7	4,858	2.25	10,930.50

TOTAL AMOUNT DUE $168,372.00

VENDOR K0241
INVOICE # 25191
P.O. # DWR
DATE 3-8-12
AMOUNT 168372.00
ACCT. CODE 40540

PWR
40540
WATER B.P.

Requested By | Prepared By | Approved By | Approved By

☐ ORIGINAL ☐ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

Cross Valley Canal

January 2012 Deliveries - Gross AF

	Points of Entry				
	Tupman T/O SWP (AF)	Tupman T/O CVP (AF)	CVC / Friant-Kern Intertie KR (AF)	KCWA Armco Reverse SWP Exch. (AF)	CVC Total (AF)
Deliveries by Turnout:					
N-2 Siphon	-	-	-	-	-
Rosedale Rio Bravo Turnout No. 1	1,244	1,706	-	-	2,950
North Strand Ranch Turnout	282	-	-	-	282
South Strand Ranch Turnout	93	-	-	-	93
Kern Water Bank P-11 Turnout	-	-	-	-	-
Section 4 Turnout	121	659	-	-	780
River Turnout No. 1	-	1,759	-	-	1,759
Rosedale Rio Bravo Turnout No. 2	2,471	1,204	3,524	-	7,199
River Turnout No. 2	159	585	-	-	744
Arvin-Edison Turnout	3,612	55	-	-	3,667
Lined Losses - Pools 1-6	92	40	6	-	138
River Turnout No. 3 to River	-	-	-	-	-
Unlined Losses - Pool 7	890	-	-	-	890
River Turnout No. 4 to River	4,092	-	-	-	4,092
Henry C. Garnett Treatment Plant	-	-	-	3,374	3,374
Unlined Losses - Pool 8	766	-	-	-	766
Total	13,822	6,008	3,530	3,374	26,734
Deliveries by Turnout/Participant:					
Rosedale-Rio Bravo Turnout No. 1					
Arvin-Edison WSD	-	1,398	-	-	1,398
Kern Delta Water District	610	-	-	-	610
Kern-Tulare Water District	-	308	-	-	308
Rosedale-Rio Bravo WSD	634	-	-	-	634
Nouth Strand Turnout					
Rosedale-Rio Bravo WSD	282	-	-	-	282
South Strand Turnout					
Rosedale-Rio Bravo WSD	93	-	-	-	93
Section 4 Turnout					
Belridge WSD	-	227	-	-	227
Berrenda Mesa WD	-	214	-	-	214
Lost Hills WD	-	218	-	-	218
Rosedale-Rio Bravo WSD	121	-	-	-	121
River Turnout No. 1					
Belridge WSD	-	608	-	-	608
Berrenda Mesa WD	-	568	-	-	568
Lost Hills WD	-	583	-	-	583
Rosedale Rio Bravo Turnout No. 2					
Arvin-Edison WSD	-	932	2,225	-	3,157
Kern Delta Water District	2,471	-	-	-	2,471
Kern-Tulare Water District	-	272	1,299	-	1,571
River Turnout No. 2					
Belridge WSD	159	204	-	-	363
Berrenda Mesa WD	-	190	-	-	190
Lost Hills WD	-	191	-	-	191
Arvin-Edison Turnout					
Arvin-Edison WSD	-	55	-	-	55
Kern Delta Water District	3,612	-	-	-	3,612
Lined Losses - Pools 1-6					
Arvin-Edison WSD	-	15	4	-	19
Belridge WSD	-	9	-	-	9
Berrenda Mesa WD	-	8	-	-	8
Kern Delta Water District	89	-	-	-	89
Kern-Tulare Water District	-	-	2	-	2
Lost Hills WD	-	8	-	-	8
Rosedale-Rio Bravo WSD	3	-	-	-	3
Unlined Losses - Pools 7					
Kern Delta Water District	890	-	-	-	890
River Turnout No. 4					
Kern Delta Water District	4,092	-	-	-	4,092
Henry C. Garnett Treatment Plant:					
Improvement District No. 4	-	-	-	3,374	3,374
Unlined Losses - Pools 8					
Kern Delta Water District	766	-	-	-	766
Total	13,822	6,008	3,530	3,374	26,734
Existing Participant Deliveries	*1,133*	*2,980*	*3,530*	*3,374*	*8,006*
New Participant Deliveries	12,689	3,028	-	-	18,728
	13,822	6,008	3,530	3,374	26,734

Shading denotes forward flow deliveries based on each point of entry into the CVC; _ / _ denotes pools / pump plants utilized (for forward flow).

Kern County Water Agency
Cross Valley Canal - Tupman Turnout Water Balance
State Water Project Deliveries
Month of January 2012
Subject to Adjustment

March 8, 2012
10:29 AM

	Reach 1				Reach 2											Reach 3				Extension						
	Pool 1	Pool 2	Pool 3							Pool 4		Pool 5			Pool 6			Pool 7		Pool 8					
Date	CVC Losses SWP	N-2 Siphon SWP	CVC Losses SWP	RRB 1 Turnout SWP	Strand Siphons SWP	North Strand Turnout SWP	South Strand Turnout SWP	KWB P-11 Turnout SWP	CVC Losses SWP	Nord Siphons SWP	Section 4 Pump SWP	CVC Losses SWP	RTO 1 Turnout SWP	CVC Losses SWP	RRB 2 Turnout SWP	RTO 2 Turnout SWP	CVC Losses SWP	AEWSD T.O. SWP	KTWD Siphons SWP	Unlined Losses SWP	RTO 3 River SWP	Unlined Losses SWP	RTO 4 Turnout SWP	Calloway Turnout SWP	Cawelo PSA SWP	T/O Total SWP
1	0	0	0	50	0	32	10	0	0	0	13	1	0	0	104	20	0	0	0	14	0	12	80	0	0	336
2	1	0	0	50	0	32	10	0	1	0	13	0	0	1	65	20	0	0	0	15	0	13	81	0	0	302
3	0	0	0	50	0	32	12	0	0	0	13	0	0	0	65	20	1	0	0	14	0	12	80	0	0	299
4	0	0	1	50	0	32	11	0	0	0	13	0	0	0	64	20	0	0	0	15	0	13	80	0	0	299
5	0	0	0	50	0	14	4	0	0	0	9	0	0	1	53	0	0	0	0	14	0	12	81	0	0	238
6	1	0	0	52	0	0	0	0	0	0	0	0	0	0	46	0	0	27	0	15	0	13	80	0	0	234
7	0	0	0	49	0	0	0	0	0	0	0	1	0	0	41	0	0	21	0	14	0	12	80	0	0	218
8	1	0	0	50	0	0	0	0	0	0	0	0	0	1	39	0	0	0	0	15	0	13	80	0	0	199
9	0	0	0	50	0	0	0	0	1	0	0	0	0	0	57	0	0	0	0	14	0	12	83	0	0	217
10	0	0	0	22	0	0	0	0	0	0	0	0	0	0	87	0	1	0	0	15	0	13	81	0	0	219
11	0	0	1	0	0	0	0	0	0	0	0	0	0	0	108	0	0	0	0	14	0	12	81	0	0	216
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125	0	0	0	0	15	0	13	82	0	0	235
13	1	0	0	0	0	0	0	0	1	0	0	1	0	1	18	0	0	0	0	14	0	12	65	0	0	113
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	0	15	0	13	59	0	0	144
15	1	0	1	0	0	0	0	0	0	0	0	0	0	0	30	0	1	101	0	14	0	12	56	0	0	216
16	0	0	0	0	0	0	0	0	0	0	0	0	0	1	30	0	0	104	0	15	0	13	57	0	0	220
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0	1	102	0	14	0	12	56	0	0	215
18	0	0	1	0	0	0	0	0	0	0	0	0	0	0	30	0	0	104	0	15	0	13	60	0	0	223
19	0	0	0	0	0	0	0	0	0	0	0	1	0	0	14	0	0	116	0	14	0	12	57	0	0	214
20	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	127	0	15	0	13	57	0	0	215
21	0	0	0	0	0	0	0	0	0	0	0	0	0	1	11	0	0	120	0	14	0	12	57	0	0	215
22	0	0	0	0	0	0	0	0	0	0	0	1	0	0	40	0	0	90	0	15	0	13	58	0	0	217
23	0	0	0	23	0	0	0	0	1	0	0	0	0	1	40	0	0	72	0	14	0	12	57	0	0	220
24	0	0	0	40	0	0	0	0	0	0	0	0	0	0	40	0	1	49	0	15	0	13	57	0	0	215
25	1	0	1	40	0	0	0	0	0	0	0	0	0	0	40	0	0	49	0	14	0	12	58	0	0	215
26	0	0	0	40	0	0	0	0	0	0	0	0	0	1	40	0	0	93	0	15	0	13	57	0	0	259
27	0	0	0	11	0	0	0	0	0	0	0	0	0	0	29	0	1	89	0	14	0	12	57	0	0	213
28	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	95	0	15	0	13	58	0	0	183
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	127	0	14	0	12	56	0	0	210
30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	135	0	15	0	12	56	0	0	219
31	1	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	143	0	14	0	12	56	0	0	230
CFS	8	0	7	627	0	142	47	0	6	0	61	7	0	9	1,246	80	9	1,821	0	449	0	386	2,063	0	0	6,968
AF	16	0	14	1,244	0	282	93	0	12	0	121	14	0	18	2,471	159	18	3,612	0	890	0	766	4,092	0	0	13,822
Berrenda Mesa WD																										
Kern Delta WD (San Bernardino)																										
Kern Delta WD / AEWSD (Arvin-Edison)				29											557											
Kern Delta WD / KTWD (Friant-Kern)																										
Rosedale Rio-Bravo WSD																										
Total	16	0	14	1,244	0	282	93	0	12	0	121	14	0	18	2,471	159	18	3,612	0	890	0	766	4,092	0	0	13,822

NOTES:
[1] As part of an operational exchange, Kern Delta WD delivered San Bernardino Valley Municipal Water District SWP supplies to Arvin-Edison WSD at Rosedale Turnout No. 1 and 2 (total of 1,655 af) in exchange for Arvin-Edison WSD Friant-Kern supplies delivered to Kern Delta at the Arvin-Edison Intake Canal (1,655 af).
[2] As part of an operational exchange, Kern Delta WD delivered San Bernardino Valley Municipal Water District SWP supplies to Kern-Tulare WD at Rosedale Turnout No. 1 and 2 (total of 1,426 af) in exchange for Kern-Tulare WD Friant-Kern supplies delivered to Kern Delta at the Arvin-Edison Intake Canal (1,426 af).

	CVC Losses	N-2 Siphon	CVC Losses	RRB 1 Turnout	Strand Siphons	Strand Turnout	Strand Turnout	KWB P-11 Turnout	CVC Losses	Nord Siphons	Section 4 Pump	CVC Losses	RTO 1 Turnout	CVC Losses	RRB 2 Turnout	RTO 2 Turnout	CVC Losses	AEWSD T.O.	KTWD Siphons	Unlined Losses	RTO 3 River	Unlined Losses	RTO 4 Turnout	Calloway Turnout	Cawelo PSA	T/O Total
Berrenda Mesa WD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	159	0	0	0	0	0	0	0	0	0	159
Kern Delta WD	15	0	13	610	0	0	0	0	11	0	0	14	0	18	2,471	0	18	3,612	0	890	0	766	4,092	0	0	12,630
Rosedale Rio-Bravo WSD	1	0	1	634	0	282	93	0	1	0	121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,133
Total	16	0	14	1,244	0	282	93	0	12	0	121	14	0	18	2,471	159	18	3,612	0	890	0	766	4,092	0	0	13,822

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
03/08/2012	04/09/2012

INVOICE NO. 25193

RECEIVED
MAR 12 2012
0055-1100
580B-4430

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

Cross Valley Canal
January 2012

Early implementation conveyance fees in the Cross Valley Canal for delivery of Kern Delta Water District deliveries of San Bernardino Valley MWD State Water Project supplies to Arvin-Edison WSD and River Turnout No. 4 as well as operational exchange deliveries to Rosedale Turnout No. 1 and 2; adjusted for lined losses.

Reach	SBVMWD SWP Volume AF	Total $/AF [1]	Conveyance Costs Total $
1	12,530	1.00	12,530.00
2	11,881	1.00	11,881.00
3	9,378	1.00	9,378.00
		Total Amount Due	33,789.00

TOTAL AMOUNT DUE $ 33,789.00

[1] Conveyance Fee $1.00 per Reach.

OR 40540

Requested By | Prepared By | Approved By | Approved By

☐ ORIGINAL ☐ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
05/01/2012	05/31/2012

INVOICE NO. 25328

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0053-1310
561B-4402

Cross Valley Canal
February 2012

Estimated power costs for deliveries of Kern Delta Water District San Bernardino Valley Municipal Water District SWP supplies delivered to River Turnout No. 4 and Arvin-Edison WSD; adjust for lined losses.

Canal Reach	Pumping Plant	SBVMWD SWP Volume AF	Rate $/AF	Pumping Costs $
1	1	6,496	2.25	14,616.00
1	2	6,478	2.25	14,575.50
2	3	6,458	2.25	14,530.50
2	4	6,438	2.25	14,485.50
2	5	6,414	2.25	14,431.50
3	6	6,386	2.25	14,368.50
Extension	7	1,273	2.25	2,864.25

TOTAL AMOUNT DUE **$89,871.75**

Requested By | Prepared By | Approved By | Approved By

☐ ORIGINAL ☑ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
05/01/2012	05/31/2012

INVOICE NO. 25331

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0055-1100
580B-4430

Cross Valley Canal
February 2012

Early implementation conveyance fees in the Cross Valley Canal for delivery of Kern Delta Water District deliveries of San Bernardino Valley MWD State Water Project supplies to Arvin-Edison WSD and River Turnout No. 4; adjusted for lined and unlined losses.

Reach	SBVMWD SWP Volume AF	Total $/AF [1]	Conveyance Costs Total $
1	6,536	1.00	6,536.00
2	6,478	1.00	6,478.00
3	6,414	1.00	6,414.00
		Total Amount Due	19,428.00

TOTAL AMOUNT DUE **$ 19,428.00**

[1] Conveyance Fee $1.00 per Reach.

Requested By | Prepared By | Approved By | Approved By

☐ ORIGINAL ☑ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
05/29/2012	06/28/2012

INVOICE NO. 25429

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0053-1310
561B-4402

Cross Valley Canal
March 2012

Estimated power costs for deliveries of Kern County Water District Member Units' groundwater via an operational exchange with Kern Delta Water District San Bernardino Valley Municipal Water District SWP supplies on the California Aqueduct, delivered to the Arvin-Edison WSD Turnout; adjust for lined losses.

Canal Reach	Pumping Plant	SBVMWD SWP Volume AF	Rate $/AF	Pumping Costs $
1	1	0	2.25	0.00
1	2	0	2.25	0.00
2	3	0	2.25	0.00
2	4	2,850	2.25	6,412.50
2	5	2,821	2.25	6,347.25
3	6	2,787	2.25	6,270.75
Extension	7	0	2.25	0.00

TOTAL AMOUNT DUE **$19,030.50**

Requested By | Prepared By | Approved By | Approved By

☐ ORIGINAL ☑ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

Directors:

Ted R. Page
Division 1

Terry Rogers
President
Division 2

Randell Parker
Division 3

Michael Radon
Division 4

Adrienne J. Mathews
Division 5

William W. Van Skike
Vice President
Division 6

Gene A. Lundquist
Division 7

James M. Beck
General Manager

Amelia T. Minaberrigarai
General Counsel

May 29, 2012

Mr. Mark Mulkay
Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

Re: Estimated power and conveyance invoices for March 2012; Cross Valley Canal Water Balance Summaries for March 2012

Dear Mr. Mulkay:

Enclosed are the above referenced documents for your records and remittance. If you have any questions or require further information, please call me at (661) 634-1491.

Sincerely,

Trent Taylor
Water Resources Planner
Kern County Water Agency

Enclosures

(661) 634-1400

Mailing Address
P.O. Box 58
Bakersfield, CA 93302-0058

Street Address
3200 Rio Mirada Dr.
Bakersfield, CA 93308

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
05/29/2012	06/28/2012

INVOICE NO. 25445

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307

0055-1310
580B-4430

Cross Valley Canal
March 2012

Early implementation conveyance fees in the Cross Valley Canal for delivery of Kern Delta Water District deliveries of San Bernardino Valley MWD State Water Project supplies, delivered via an operational exchange with Kern County Water Agency Member Units' groundwater supplies, to the Arvin-Edison WSD Turnout; adjusted for lined.

Reach	SBVMWD SWP Volume AF	Total $/AF [1]	Conveyance Costs Total $
1		1.00	-
2	2,868	1.00	2,868.00
3	2,821	1.00	2,821.00
		Total Amount Due	5,689.00

TOTAL AMOUNT DUE **$ 5,689.00**

[1] Conveyance Fee $1.00 per Reach.

Requested By | Prepared By | Approved By | Approved By

☐ ORIGINAL ☑ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

Cross Valley Canal

March 2012 Deliveries - Gross AF

	Points of Entry				
	Tupman T/O Groundwater (AF)	Tupman T/O CVP (AF)	CVC / Friant-Kern Intertie KR (AF)	KCWA Armco Reverse SWP Exch. (AF)	CVC Total (AF)
Deliveries by Turnout:					
Reverse - Calif. Aqueduct	7,085	-	-	-	7,085
Rosedale Rio Bravo Turnout No. 1	-	-	-	-	-
North Strand Ranch Turnout	-	-	-	-	-
South Strand Ranch Turnout	-	-	-	-	-
Kern Water Bank P-11 Turnout	-	-	-	-	-
Section 4 Turnout	-	-	-	-	-
River Turnout No. 1	-	-	-	-	-
Rosedale Rio Bravo Turnout No. 2	-	-	-	-	-
River Turnout No. 2	-	-	-	-	-
Arvin-Edison Turnout	3,027	-	-	-	3,027
CVC / FK Intertie	526	-	-	-	526
Lined Losses - Pools 1-6	275	-	-	-	275
River Turnout No. 3 to River	-	-	-	-	-
Unlined Losses - Pool 7	156	-	-	-	156
River Turnout No. 4 to River	-	-	-	-	-
Henry C. Garnett Treatment Plant	135	-	-	2,983	3,118
Unlined Losses - Pool 8	162	-	-	-	162
Total	11,366	-	-	2,983	14,349
Deliveries by Turnout/Participant:					
Reverse - Calif. Aqueduct					
Belridge WSD	791	-	-	-	791
Berrenda Mesa WD	1,096	-	-	-	1,096
Dudley Ridge WD	762	-	-	-	762
Lost Hills WD	985	-	-	-	985
Semitropic WSD	282	-	-	-	282
Westside Mutual WC	890	-	-	-	890
Wheeler Ridge Maricopa WSD	2,279	-	-	-	2,279
Arvin-Edison Turnout					
Kern Delta Water District	2,787 6/5	-	-	-	2,787
Kern Tulare WD / ID4 / AEWSD Exch.	240 6/5	-	-	-	240
CVC / FK Intertie					
Kern Tulare Water District	526 6/5	-	-	-	526
Lined Losses - Pools 1-6					
Belridge WSD	19	-	-	-	19
Berrenda Mesa WD	31	-	-	-	31
Dudley Ridge WD	7	-	-	-	7
Improvement District No. 4	18	-	-	-	18
Kern Delta Water District	81	-	-	-	81
Kern-Tulare Water District	35	-	-	-	35
Lost Hills WD	25	-	-	-	25
Semitropic WSD	3	-	-	-	3
Westside Mutual WC	9	-	-	-	9
Wheeler Ridge Maricopa WSD	47	-	-	-	47
Unlined Losses - Pools 7					
Improvement District No. 4	156 7/6	-	-	-	156
Henry C. Garnett Treatment Plant:					
Improvement District No. 4	135 6/7	-	-	2,983	3,118
Unlined Losses - Pools 8					
Improvement District No. 4	162 8/7	-	-	-	162
Total	11,366	-	-	2,983	14,349
Existing Participant Deliveries	*1,272*	-	-	*2,983*	*5,945*
New Participant Deliveries	10,094	-	-	-	8,404
	11,366	-	-	2,983	14,349

Shading denotes forward flow deliveries based on each point of entry into the CVC: _ / _ denotes pools / pump plants utilized (for forward flow).

Invoice

Rosedale-Rio Bravo Water Storage District

PO Box 20820
Bakersfield, CA 93390-0820

Phone # 661-589-6045
Fax # 661-589-1867

Date	Invoice #
4/13/2012	1018

Bill To

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307-6247

Terms
Net 30

Description	Amount
Pioneer Wheeling Charges - December 2011	17,090.00

DWR
40130
4/20/12

Please remit to above address.

Total $17,090.00

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
02/15/12	03/16/12

INVOICE NO. 25112

0102-1310	0
0075-1310	17,090
761B-4430	8,737
761B-4401	6,145
741A-4499	307
761B-4402	1,901
020A-4430	0

Rosedale-Rio Bravo WSD
PO Box 867
Bakersfield, CA 93302-0867

Pioneer Project
Estimated Billing
December 2011

December 2011:
SWP to Pioneer

Transportation via Section 4 Pump (RRB)	418 af	@	0.00 $/af	0
Transportation via Section 4 Pump (KCWA)	41 af	@	8.75 $/af	359
Transportation via Section 4 Pump (KT)	75 af	@	8.75 $/af	656
Transportation via Section 4 Pump (PG&E)	534 af	@	3.56 $/af	1,901
Transportation via RTO 1 (RRB):	796 af	@	0.00 $/af	0
Transportation via RTO 1 (Agency):	79 af	@	11.00 $/af	869
Transportation via RTO 1 (KT):	143 af	@	11.00 $/af	1,573
Transportation via RTO 2 (RRB):	292 af	@	0.00 $/af	0
Transportation via RTO 2 (Agency):	28 af	@	14.25 $/af	399
Transportation via RTO 2 (KT):	53 af	@	14.25 $/af	755
Transportation via River Channel	47 af	@	0.00 $/af	0
Transportation via 2800 Acres:	649 af	@	5.36 $/af	3,479
Transportation via Basins 1, 9 & 10:	695 af	@	0.93 $/af	646
O&M:	1,229 af	@	5.00 $/af	6,145
Facility Replacement:	1,229 af	@	0.25 $/af	307
Subtotal				$ 17,090

TOTAL AMOUNT DUE/(REFUNDED) **$17,090**

1,925 AF DELIVERED.

PASS THRU TO KDWD

Pd 3-13-12 ck# 7422

Requested By | Prepared By | Approved By | Approved By

☐ ORIGINAL ☐ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

Invoice

Rosedale-Rio Bravo Water
Storage District

PO Box 20820
Bakersfield, CA 93390-0820

Phone # 661-589-6045
FAX # 661-589-1867

Date	Invoice #
4/13/2012	1016

Bill To

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307-6247

Terms
Net 30

Description	Amount
Pioneer Wheeling Charges - November 2011	11,198.88

DWR
40130
4/20/12

Please remit to above address.

Total $11,198.88

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
01/25/12	02/24/12

INVOICE NO. 25032

0102-1310	0
0075-1310	14,787
761B-4430	2,314
761B-4401	6,690
741A-4499	335
761B-4402	5,448
020A-4430	0

Rosedale-Rio Bravo WSD
PO Box 867
Bakersfield, CA 93302-0867

Pioneer Project
Estimated Billing
November 2011

November 2011:
SWP to Pioneer

Transportation via Section 4 Pump (RRB)	1,065 af	@	0.00 $/af	0
Transportation via Section 4 Pump (KCWA)	54 af	@	8.75 $/af	473
Transportation via Section 4 Pump (KT)	74 af	@	8.75 $/af	648
Transportation via Section 4 Pump (PG&E)	1,193 af	@	2.84 $/af	3,388
Transportation via RTO 1 (RRB):	252 af	@	0.00 $/af	0
Transportation via RTO 1 (Agency):	13 af	@	11.00 $/af	143
Transportation via RTO 1 (KT):	17 af	@	11.00 $/af	187
Transportation via River Channel	1 af	@	0.00 $/af	0
Transportation via 2800 Acres:	136 af	@	5.36 $/af	729
Transportation via Basins 1, 9 & 10:	145 af	@	0.93 $/af	135
O&M:	1,338 af	@	5.00 $/af	6,690
Facility Replacement:	1,338 af	@	0.25 $/af	335
Subtotal				$ 12,726

Additional Charges:

Transportation via Section 4 Pump (April 2011 - PG&E	1,392 af	@	1.48 $/af	$ 2,060

TOTAL AMOUNT DUE/(REFUNDED) **$14,787**

1,475 AF DELIVERED

AEWSD 12% = $1,527.12
KDWD 88% = $11,198.88

Pd 2/14/12
ck# 7370

Requested By	Prepared By	Approved By	Approved By

☐ ORIGINAL ☐ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

Invoice

Rosedale-Rio Bravo Water
Storage District

PO Box 20820
Bakersfield, CA 93390-0820

Phone # 661-589-6045
Fax # 661-589-1867

Date	Invoice #
4/13/2012	1013

Bill To

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307-6247

Terms
Net 30

Description	Amount
Cross Valley Canal Pumping Costs - September 2011 Pumping Plant No. 1 - $1761.50 Pumping Plant No. 2 - $1761.50 Pumping Plant No. 3 - $747.50 Pumping Plant No. 4 - $747.50 Pumping Plant No. 5 - $1150.00	6,168.00

DWR
40540
4/20/12

Please remit to above address.

Total $6,168.00

ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT

CROSS VALLEY CANAL PUMPING COSTS

KERN DELTA WATER DISTRICT - SEPTEMBER 2011

Deliveries and Pumping Plant Usage			
Description	Volume (AF)	Rate ($/AF)	Pumping Cost ($)
Pumping Plant No. 1	542	3.25	1,761.50
Pumping Plant No. 2	542	3.25	1,761.50
Pumping Plant No. 3	230	3.25	747.50
Pumping Plant No. 4	230	3.25	747.50
Pumping Plant No. 5	230	5.00	1,150.00
		TOTAL >	**6,168.00**

Delivery Accounting	
Turnout	AF
Rosedale No. 1 (West)	312
Strand Ranch	0
Rosedale No. 2 (East)	230
CVC Losses	0
TOTAL >	**542**

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
12/12/2011	01/11/2012

INVOICE NO. 24801

Rosedale-Rio Bravo WSD
PO Box 20820
Bakersfield, CA 93390-0820

0053-1330(PWR)
561B-4402

Cross Valley Canal
September 2011

Estimated power costs for deliveries of Rosedale Rio-Bravo WSD SWP Table A supplies as well as Arvin-Edison WSD and Kern Delta WD use of RRBWSD capacity to convey Metropolitan WD SWP supplies to Rosedale Turnout No. 1 and 2; adjusted for lined losses.

Canal Reach	Pumping Plant	RRBWSD SWP Volume AF	AEWSD SWP Volume AF	KDWD SWP Total AF	Rate $/AF	Pumping Costs $
1	1	4,009	1,608	542	3.25	20,016.75
1	2	4,008	1,608	542	3.25	20,013.50
2	3	837	0	230	3.25	3,467.75
2	4	0	0	230	3.25	747.50
2	5	0	0	230	5.00	1,150.00
3	6	0	0	0	5.00	0.00
Extension	7	0	0	0	5.00	0.00

TOTAL AMOUNT DUE **$45,395.50**

Requested By | Prepared By | Approved By | Approved By

☑ ORIGINAL ☐ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

Invoice

Rosedale-Rio Bravo Water
Storage District

PO Box 20820
Bakersfield, CA 93390-0820

Phone # 661-589-6045
Fax # 661-589-1867

Date	Invoice #
4/13/2012	1014

Bill To

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307-6247

Terms
Net 30

Description	Amount
Cross Valley Canal Pumping Costs - November 2011 Pumping Plant No. 1 - $8258.25 Pumping Plant No. 2 - $8255.00 Pumping Plant No. 3 - $263.25 Pumping Plant No. 4 - $169.00 Pumping Plant No. 5 - $260.00	17,205.50

DWR
40540
4/20/12

Please remit to above address.

Total $17,205.50

ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT

CROSS VALLEY CANAL PUMPING COSTS

KERN DELTA WATER DISTRICT - OCTOBER 2011

Deliveries and Pumping Plant Usage			
Description	Volume (AF)	Rate ($/AF)	Pumping Cost ($)
Pumping Plant No. 1	2,541	3.25	8,258.25
Pumping Plant No. 2	2,540	3.25	8,255.00
Pumping Plant No. 3	81	3.25	263.25
Pumping Plant No. 4	52	3.25	169.00
Pumping Plant No. 5	52	5.00	260.00
		TOTAL >	**17,205.50**

Delivery Accounting	
Turnout	AF
Rosedale No. 1 (West)	1,373
Strand Ranch	1,116
Rosedale No. 2 (East)	52
CVC Losses	0
TOTAL >	**2,541**

✓

AMOUNT OF WATER RECLASSIFIED AS KDWD.

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
01/06/2012	02/06/2012

INVOICE NO. 24922

Rosedale-Rio Bravo WSD
PO Box 20820
Bakersfield, CA 93390-0820

0053-1330(PWR)
561B-4402

Cross Valley Canal
October 2011

Estimated power costs for deliveries of Rosedale Rio-Bravo WSD SWP Table A supplies to Rosedale Turnout No. 1 and 2 as well as refill deliveries per the Refill/Dewatering Policy Guidelines; adjusted for lined losses.

Canal Reach	Pumping Plant	RRBWSD SWP Volume AF	Rate $/AF	Pumping Costs $
1	1	2,919	3.25	9,486.75
1	2	2,918	3.25	9,483.50
2	3	81	3.25	263.25
2	4	52	3.25	169.00
2	5	52	5.00	260.00
3	6	0	5.00	0.00
Extension	7	0	5.00	0.00

TOTAL AMOUNT DUE **$19,662.50**

Requested By	Prepared By	Approved By	Approved By
☑ ORIGINAL ☐ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL			

Invoice

Rosedale-Rio Bravo Water
Storage District

PO Box 20820
Bakersfield, CA 93390-0820

Phone # 661-589-6045
Fax # 661-589-1867

Date	Invoice #
4/13/2012	1015

Bill To

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307-6247

Terms
Net 30

Description	Amount
Cross Valley Canal Power Costs - November 2011	27,101.25

DWR
40540
4/20/12

Please remit to above address.

Total $27,101.25

ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT

CROSS VALLEY CANAL PUMPING COSTS

KERN DELTA WATER DISTRICT - NOVEMBER 2011

Deliveries and Pumping Plant Usage			
Description	Volume (AF)	Rate ($/AF)	Pumping Cost ($)
Pumping Plant No. 1	5,326	2.25	11,983.50
Pumping Plant No. 2	5,324	2.25	11,979.00
Pumping Plant No. 3	0	2.25	0.00
Pumping Plant No. 4	0	2.25	0.00
Pumping Plant No. 5	0	2.25	0.00
		SUB-TOTAL >	**23,962.50**

Delivery Accounting	
Turnout	AF
Rosedale No. 1 (West)	1,845
Strand Ranch	3,481
Rosedale No. 2 (East)	0
CVC Losses	0
TOTAL >	**5,326**

✓

Pumping Plant Usage[1]			
Description	Volume (AF)	Rate ($/AF)	Pumping Cost ($)
Pumping Plant No. 1	0	2.25	0.00
Pumping Plant No. 2	0	2.25	0.00
Pumping Plant No. 3	1,230	2.25	2,767.50
Pumping Plant No. 4	165	2.25	371.25
Pumping Plant No. 5	0	2.25	0.00
		SUB-TOTAL >	**3,138.75**

TOTAL > **27,101.25**

[1] CVC Power cost to move RRB water to Pioneer. KDWD agreed to move this water to Pioneer to free capacity in RRB spreading areas.

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
01/18/2012	02/17/2012

INVOICE NO. 25017

Rosedale-Rio Bravo WSD
PO Box 20820
Bakersfield, CA 93390-0820

0053-1330(PWR)
561B-4402

Cross Valley Canal
November 2011

Estimated power costs for deliveries of Rosedale Rio-Bravo WSD SWP Table A supplies to the Pioneer Project utilizing the Section 4 Turnout and River Turnout No. 1. Deliveries of Kern Delta WD at Rosedale Turnout No. 1 and 2 and the North and South Turnouts were made with Kern Delta WD MWD supplies; adjusted for lined losses.

Canal Reach	Pumping Plant	RRBWSD SWP Volume AF	KDWD SWP Volume AF	Rate $/AF	Pumping Costs $
1	1	1,318	5,326	2.25	14,949.00
1	2	1,318	5,324	2.25	14,944.50
2	3	1,318	0	2.25	2,965.50
2	4	252	0	2.25	567.00
2	5	0	0	2.25	0.00
3	6	0	0	2.25	0.00
Extension	7	0	0	2.25	0.00

TOTAL AMOUNT DUE **$33,426.00**

Requested By | Prepared By | Approved By | Approved By

☑ ORIGINAL ☐ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

Invoice

Rosedale-Rio Bravo Water Storage District

PO Box 20820
Bakersfield, CA 93390-0820

Phone # 661-589-6045
Fax # 661-589-1867

Date	Invoice #
4/13/2012	1017

Bill To

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307-6247

Terms
Net 30

Description	Amount
Cross Valley Canal Pumping Costs - December 2011	50,436.00

DWR
40540
4/20/12

Please remit to above address.

Total $50,436.00

ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT
CROSS VALLEY CANAL PUMPING COSTS
KERN DELTA WATER DISTRICT - DECEMBER 2011

Deliveries and Pumping Plant Usage			
Description	Volume (AF)	Rate ($/AF)	Pumping Cost ($)
Pumping Plant No. 1	5,873	2.25	13,214.25
Pumping Plant No. 2	5,872	2.25	13,212.00
Pumping Plant No. 3	4,056	2.25	9,126.00
Pumping Plant No. 4	354	2.25	796.50
Pumping Plant No. 5	353	2.25	794.25
		SUB-TOTAL >	**37,143.00**

Delivery Accounting	
Turnout	AF
Rosedale No. 1 (West)	2,761
Strand Ranch	2,759
Rosedale No. 2 (East)	353
CVC Losses	0
TOTAL >	**5,873**

Pumping Plant Usage[1]			
Description	Volume (AF)	Rate ($/AF)	Pumping Cost ($)
Pumping Plant No. 1	1,510	2.25	3,397.50
Pumping Plant No. 2	1,509	2.25	3,395.25
Pumping Plant No. 3	1,508	2.25	3,393.00
Pumping Plant No. 4	1,089	2.25	2,450.25
Pumping Plant No. 5	292	2.25	657.00
		SUB-TOTAL >	**13,293.00**

TOTAL > 50,436.00

[1] CVC Power cost to move RRB water to Pioneer. KDWD agreed to move this water to Pioneer to free capacity in RRB spreading areas.

KERN COUNTY WATER AGENCY
P.O. BOX 58
BAKERSFIELD, CA 93302-0058
PHONE: 661/634-1400 FAX: 661/634-1428

INVOICE DATE	DUE DATE
02/13/2012	03/14/2012

INVOICE NO. 25082

Rosedale-Rio Bravo WSD
PO Box 20820
Bakersfield, CA 93390-0820

0053-1330(PWR)
561B-4402

Cross Valley Canal
December 2011

Estimated power costs for deliveries of Rosedale Rio-Bravo WSD SWP Table A supplies to the Pioneer Project utilizing the Section 4 Turnout and River Turnout No. 1. Deliveries of Kern Delta WD at Rosedale Turnout No. 1 and 2 and the North and South Turnouts were made with Kern Delta WD MWD and SBVMWD supplies; adjusted for lined losses.

Canal Reach	Pumping Plant	RRBWSD SWP Volume AF	KDWD MWD SWP Volume AF	KDWD SBVMWD SWP Volume AF	Rate $/AF	Pumping Costs $
1	1	1,510	3,940	1,933	2.25	16,611.75
1	2	1,509	3,939	1,933	2.25	16,607.25
2	3	1,508	3,937	119	2.25	12,519.00
2	4	1,089	236	118	2.25	3,246.75
2	5	292	236	117	2.25	1,451.25
3	6	0	0	0	2.25	0.00
Extension	7	0	0	0	2.25	0.00

TOTAL AMOUNT DUE **$50,436.00**

Requested By	Prepared By	Approved By	Approved By

☐ ORIGINAL ☑ REMITTANCE ☐ FILE ☐ ACCOUNTING ☐ NUMERICAL CONTROL

Invoice

Rosedale-Rio Bravo Water Storage District
PO Box 20820
Bakersfield, CA 93390-0820

Phone # 661-589-6045
Fax # 661-589-1867

Date	Invoice #
12/5/2011	1009

RECEIVED
DEC - 6 2011

Bill To

Kern Delta Water District
501 Taft Highway
Bakersfield, CA 93307-6247

Terms
Net 30

Description	Amount
CVC Pumping Costs August 2011 see attached statement	4,959.50

DWR
405 40

VENDOR	Ro400
INVOICE #	1009
P.O. #	DWR
DATE	12-5-11
AMOUNT	4959.50
ACCT. CODE	40540

12/14/11

Please remit to above address.

Total $4,959.50

WATER B.P.

ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT

CROSS VALLEY CANAL PUMPING COSTS

KERN DELTA WATER DISTRICT - AUGUST 2011

Deliveries and Pumping Plant Usage			
Description	Volume (AF)	Rate ($/AF)	Pumping Cost ($)
Pumping Plant No. 1	763	3.25	2,479.75
Pumping Plant No. 2	763	3.25	2,479.75
Pumping Plant No. 3	0	3.25	0.00
Pumping Plant No. 4	0	3.25	0.00
Pumping Plant No. 5	0	3.25	0.00
		TOTAL >	**4,959.50**

Delivery Accounting	
Turnout	AF
Rosedale No. 1 (West)	763
Strand Ranch	0
Rosedale No. 2 (East)	0
CVC Losses	0
TOTAL >	**763**

RECEIVED
DEC 19 2011

Invoice

Buena Vista Water Storage District
P.O. Box 756
Buttonwillow, CA 93206

Telephone: 661-324-1101

Invoice No.	2669
Customer No.	0780

Bill To	Ship To
Kern Delta Water District 501 Taft Highway Bakersfield, CA 93307 USA	Kern Delta Water District 501 Taft Highway Bakersfield, CA 93307 USA

Invoice Date	Order Date	SO Number	Ordered By	Customer PO Number	Payment Method
12/16/2011	12/1/2011				Net 30 Days

Warehouse	Ship Via	F.O.B.	Salesperson	Resale Number
MAIN				

Order Quantity	Ship Quantity	Tax	Item Number / Description	Unit Price	Extended Price
25,000.00	25,000.00	N	KDEX Kern Delta Exchange 2011 EXHANGE FEES PURSUANT TO MEMO OF UNDERSTANDING - THIS EXCHANGE IS IN ADDITION TO THE ANNUAL LONG-TERM WATER EXCHANGE AGREEMENT NO. 2 Exchange in place of cvc cost.	15.50	387,500.00

DWR
~~3110~~
30110

VENDOR Bo300
INVOICE # 2669
P.O. # DWR
DATE 12-16-11
AMOUNT 387,500.00
ACCT. CODE

1/9/12

MET

Print Date	12/16/11	**Total Paid**	0.00	**Subtotal**	387,500.00
Print Time	10:29:05 AM	**Balance Due**	387,500.00	**Freight**	0.00
Page No.	1	**Due Date**	01/15/12	**Invoice Total**	387,500.00

Printed By: Marinelle

1/4/12

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:

SAN BERNARDINO VALLEY WATER
CONSERVATION DISTRICT
1630 West Redlands Boulevard, Suite A
Redlands, CA 92373-8032
Attention: General Manager

SPACE ABOVE THIS LINE FOR RECORDER'S USE

EXEMPT GOVERNMENT AGENCY Per Government Code Sec. 6103

By_____
District Secretary, San Bernardino Valley Water Conservation District

AGREEMENT TO DEVELOP AND OPERATE ENHANCED RECHARGE FACILITIES

This Agreement to Develop and Operate Enhanced Recharge Facilities ("**Agreement**") is entered into and effective this 1st day of October, 2012 by and among the San Bernardino Valley Water Conservation District (the "**Conservation District**"), the San Bernardino Valley Municipal Water District ("**Valley District**") and Western Municipal Water District of Riverside County ("**Western**"). The Conservation District, Valley District and Western are each sometimes referred to as a "**Party**" and are collectively sometimes referred to as the "**Parties.**"

Recitals

A. General Purposes.

(1) The Parties each hold water rights to the waters of the Santa Ana River and each own and operate facilities that serve to divert and/or store the waters of the Santa Ana River. Furthermore, each Party possesses critical assets and unique skills that the other Parties do not possess.

SBVMWD LEGAL
DOCUMENT 2382

(2) The Parties wish to collaboratively use all of their respective assets and skills, including but not limited to water rights and facilities necessary or useful for the diversion and storage of water, to improve the reliability of local water supplies for their respective constituents by establishing a collaborative partnership to coordinate the use of their separate resources for mutual advantage.

(3) The Parties specifically wish to collaborate by increasing opportunities to recharge local surface water supplies, as well as State Project Water, in the San Bernardino Basin Area (the "**SBBA**"); by reducing the time and cost required to permit and construct essential public infrastructure (such as spreading basins); and by working together to achieve an efficient division of labor in the operation and maintenance of water infrastructure.

(4.) The Parties acknowledge that their water resource management activities in the Santa Ana River wash area proceed in concert with other uses of the lands in that area, including the mining of sand and gravel mineral deposits pursuant to existing leases, and habitat conservation and management, pursuant to a series of multi-agency cooperative initiatives involving local, state, and federal resource management and control agencies. The Parties' goal is to harmonize their water resource activities with these other uses, for the optimization of coordinated use by all.

(5) The Parties wish to memorialize their joint understandings by means of this Agreement.

B. Findings.

(1) The Parties agree that they must increase groundwater storage in the SBBA in order to meet current and future demands for water among their constituents.

(2) In the past, reasonable disagreements among the Parties have added unintentional and undesirable costs and complexity to the planning and permitting of important water resources projects in the region.

(3) The Parties believe that it is in their best interests, and the best interest of the public they serve, to cooperate in increasing the available water supply by establishing a new and more productive working relationship.

(4) In certain years, wet weather conditions and increased availability of State Project Water can create a limited opportunity to improve the reliability of local water supplies by increasing recharge and storage to groundwater. These favorable conditions are temporary and perishable. Therefore, time is of the essence. New inter-agency operating agreements should be established immediately in order to make the most of this and future opportunities because they occur on an irregular and unpredictable basis.

(5) Because of the limited and sporadic opportunities to augment local water supplies, the Parties intend for this Agreement to continue for a long period, thereby allowing the utilization of such limited water supplies.

Agreements

1. *Term.* The term of this Agreement shall commence on the Effective Date first written above and shall continue for a term of twenty five (25) years ("Initial Term") , unless terminated earlier as provided in this Agreement. This Agreement may be extended by written agreement among all parties for up to five additional, consecutive five year terms ("Extension Terms"), on the same terms and conditions stated herein, provided that prior to the expiration of the term then in effect, all parties agree in writing to the applicable extension, by action of their legislative bodies, to extend the Agreement for another term.

2. *Duties of the Conservation District.*

a. *Lease of Facilities for the Purpose of Groundwater Recharge to Valley District and Western.* The Conservation District hereby leases to Valley District and Western, for the term of this Agreement and on the terms specified herein, the surface of the lands shown on Exhibit 1 during the term of this Agreement ("**Leased Property**"). Exhibit 1A provides the legal description for the lands owned in fee by the Conservation District and Exhibit 1B provides the legal description of lands made available under existing easements under ownership by the Bureau of Land Management. Exhibit 1 is attached hereto and incorporated herein by reference. Valley District and Western shall have the right to enter upon and use the Leased Property, and any reasonably necessary subsurface areas incident thereto. Such entry and use shall be only for the purpose of recharging, storing or conveying water from any source (collectively "**recharging of water**" herein) into or through the percolation basins and other facilities owned or controlled by the Conservation District, whether existing as of the effective date of this Agreement, or as may be constructed pursuant to the terms of this Agreement, as such existing and contemplated future facilities are depicted in Exhibit 2, which is attached hereto and incorporated herein by reference). The Conservation District reserves all rights in and to the Leased Property not expressly conveyed as a part of this lease. Specific terms of this lease are as follows:

(1) Valley District and Western may construct, operate, maintain, repair, reconstruct and rehabilitate diversion facilities, recharge basins, pumps and other ancillary facilities or equipment located within the Leased Property as Valley District and Western may reasonably deem necessary for the recharging of water on the Leased Property,

recognizing that the Parties intend that the Conservation District shall be responsible for the operation and maintenance of such facilities.

(2) Included within this lease are all rights of reasonable ingress and egress as may be useful or necessary, in Valley District and/or Western's sole discretion, for the purpose of the recharging of water on the Leased Property, provided that such activities shall not interfere with: (i) any conservation easements that may now exist, or may be established consistent with the Conservation District's Upper Santa Ana River Wash Land Management and Habitat Conservation Plan, on said lands, or (ii) other easements existing as of the effective date of this Agreement.

(3) The designs for any such facilities or other tenant improvements must be approved, in advance by the Conservation District, which approval shall not be unreasonably withheld or delayed, and are subject to any limitations on the Conservation's District's holding of the Leased Property. The Conservation District shall cooperate reasonably with Valley District and Western to obtain local, state, or federal permits that may be required to construct or operate such facilities approved by the Conservation District.

(4) The Conservation District will utilize its best efforts under all existing and future lease agreements and easements with other individuals, organizations or entities operating on the Leased Property to harmonize the objective of Valley District and Western making full use of the facilities on the Leased Property for the recharge of water, consistent with the hydrological design limitations of these facilities, with any competing uses of the properties on which such facilities are or may be located.

(5) The Parties recognize that the Conservation District has negotiated lease agreements with mining companies that allow the Conservation District to engage in recharge of water that may periodically interfere with or prevent mining, without liability on the part of the Conservation District, which agreements are attached hereto as Exhibits 3 and 4. The Conservation District represents and warrants that these are the only current agreements that authorize mining on the Leased Property, and represents and warrants that the copies of these agreements attached as Exhibits 3 and 4 are true and correct copies of those agreements. Based on those representations, the Parties believe that they can collaboratively manage the recharge of water to avoid liability arising from any incompatibility between the recharging of water and any

activities otherwise authorized under the mining leases. Toward this end, the Parties agree as follows:

(a) During the winter season (from October 1 to March 31), the Parties will consult with each other on a regular basis to determine the quantity of water that may be recharged without interfering with mining operations.

(b) In the event that the recharging of water threatens to substantially limit or interfere with mining operations, the Parties shall immediately confer to determine how to maximize the recharge without unduly interfering with mining activity. Towards this end, the parties acknowledge that the Conservation District has the right, from time to time and as it deems necessary in the exercise of its reasonable discretion, to utilize all or any portion of the areas subject to the mining leases for its water recharge, conservation, spreading, and other operations, provided such activities are undertaken utilizing best efforts to avoid storing water so as to require temporary use of the mining lease areas. In connection with the exercise of their activities on the Leased Property hereunder, Valley District and Western shall assist the Conservation District to make every effort to minimize the time of any interruption of the mining lessees' activities on the Leased Property, to permit sufficient time for the Conservation District to observe all requirements for notice to mining lessees required under the applicable leases in the event of conflicts, and to harmonize their recharge of water with the then-current and anticipated immediate future excavation and other activities of the mining lessees, with the overall goal that the mining activity and the water conservation activity can harmoniously exist, without interruption to either.

(c) Any decisions about the proper scope, location, or amount of recharging of water after such consultation with appropriate agencies shall be made solely by the Conservation District in the exercise of its reasonable discretion, consistent with paragraph 4(d)(2) below, and consistent with the principle of ensuring that the optimum quantity of water possible is replenished within the San Bernardino Basin Area.

In the event the Conservation District determines, in the exercise of its reasonable discretion, that portions of the Leased Property cannot be made available to Valley District and Western, and such determination is made at a time when water supplies are otherwise

immediately available to Valley District and Western for recharge into facilities on the leased land:, Conservation District will not object, directly or indirectly, to efforts by Valley District and/or Western to deliver water supplies that cannot be spread on the Leased Property to other locations, *provided that* in determining where to deliver such water supplies, Valley District and Western act consistent with the priority of first delivering water for direct delivery or spreading within the SBBA, then delivering water for direct delivery or spreading within the boundaries of Valley District, then delivering water for direct delivery, spreading or storage within Western, and then delivering water for direct delivery, spreading or storage outside of Western.

In such event, the parties shall meet and confer in good faith, under the auspices of the Joint Operations Committee provided for in paragraph 4(b) below, regarding whether some proportional refund to Valley District, Western, or both of a portion the gross lease fee paid for the given year in which the Leased Premises were unavailable for the recharge of water may be appropriate, and if so, in what amount.

b. *Operation and Maintenance of Spreading Basins.* The Conservation District shall operate and maintain all new and existing facilities, located on the areas depicted in Exhibit 2 hereto, in good working condition, to ensure that the recharge of water continues efficiently, in accordance with a mutually-agreed schedule of regular maintenance and any supplemental agreements governing special or emergency maintenance responsibilities. The Conservation District shall set aside a portion of the gross lease fee provided for in Paragraph 3(a) below received from Valley and Western, in accordance with the Conservation District's Reserve Policy, to ensure sufficient funds are available to meet the agreed maintenance obligations.

c. *Ownership of New Facilities* Upon expiration or other proper termination of this Agreement, however, improvements made on land owned or controlled by the Conservation District shall become Conservation District property, to be used by the Conservation District for water management and the recharge of water.

d. *Groundwater Charge*. All parties producing water in the Conservation District's jurisdictional boundaries shall be subject to all then-applicable groundwater charges, and this Agreement shall not exempt nor excuse any party, including Valley District and Western, from the levy or payment thereof. Notwithstanding, the parties recognize that they do not intend that groundwater charges would be required to be paid on production of water pursuant to measures taken for the emergency alleviation of high groundwater conditions, or the implementation of

other basin management objectives as may be approved by the Basin Technical Advisory Commission ("**BTAC**") or other similar organization including all of the parties hereto that may perform a substantially similar role under any Conjunctive Use Plan that may be implemented for the SBBA. The Conservation District agrees to consider implementing reasonable measures to reduce or eliminate groundwater charges for groundwater production devoted to such agreed purposes, whether by exemption, or refund of charges otherwise paid, as may be consistent with applicable law.

3. *Duties of Valley District and Western.*

a. *Gross Lease Fee.* Valley District and Western shall together pay to the Conservation District a gross lease fee of $350,000/year for the right to the recharge of water through the existing percolation basins and other facilities owned by the Conservation District, and the right to construct and have operated additional recharge and conveyance facilities on the Leased Property. The parties acknowledge and affirm that the gross lease fee is a lease payment for access to and use of the Leased Property, only, and for partial offset to the costs of operation and maintenance of facilities thereon same by the Conservation District. The gross lease fee does not include, and is not intended to replace or offset, any charges for the acquisition, conveyance, storage, or production of water, that may otherwise apply by or among the parties, or third parties, whether now or in the future.

b. Valley District and Western, or either of them, shall pay the gross lease fee, in advance, by October 1st of each year, which sum may be apportioned by the Conservation District to its Groundwater Enterprise and other funds.

(1) Valley District and Western shall annually adjust the gross lease fee to account for inflation using the U.S. Bureau of Labor Statistics Consumer Price Index (CPI-U) for the Los Angeles District. The base year for such payments will be 2012.

(2) In the event that Valley District and/or Western construct new percolation basins or other facilities useful or necessary for the recharge of water, the Parties shall adjust the gross lease fee proportionally to reflect the additional operation and maintenance costs that will be incurred by the Conservation District in operating and maintaining those new facilities, as may be agreeable to the Parties.

c. *Permitting for New or Augmented Spreading Basins.* Valley District and Western shall be responsible for obtaining all federal, state and local permits (including conducting environmental review under the California Environmental Quality Act or the National Environmental Policy Act) that may be required to construct

additional facilities for the recharge of water supplied by Valley and Western. If, after 10 years, Valley and Western have been unable to obtain the necessary permits, either or both may terminate this lease agreement subject to the provisions of paragraph 9.c. below. Valley District and Western shall bear all costs associated with protecting, repairing or replacing the material infrastructure improvements (including pipelines, gates, valves, weirs, fencing, gauges, etc.) installed by Valley District and Western on lands owed by the Conservation District.

d. *Resource Management.*

(1) Valley District and Western shall coordinate their operations to harmonize with mineral resource extractions, to avoid any potential liability under mineral leases, or other uses authorized by the Conservation District on the Leased Property.

(2) Valley District and Western shall negotiate supplemental payments to the Conservation District where unusual and unforeseen circumstances necessitate extraordinary maintenance expenses that are in excess of the budget prepared and approved by the Joint Operations Committee.

(3) Valley District and Western shall cooperate with the Conservation District in developing a long-term resource management plan to govern multiple-use activities in Reach 5 of the Santa Ana River wash (i.e., the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan).

4. *Duties of All Parties*

a. *No Rights to Other Party(ies)' Water or Facilities.* Except as provided for in paragraph 2(c) above, the Conservation District will not assert any claim to own or control the new facilities constructed, or the additional water recharged by, Valley District and Western under the terms of this Agreement, provided that these activities occur in conformance with this Agreement. Valley District and Western will not assert any claim to own or control any water that is percolated in the new or existing recharge basins that is not supplied by Valley District or Western, nor make any attempt to acquire or control land or facilities owned by the Conservation District.. Valley District and Western acknowledge and represent to Conservation District that this Agreement provides for and constitutes "compatible use" of the Conservation District's property and facilities, as that term is utilized in California Code of Civil Procedure sections 1240.510 et seq., thereby eliminating any need for any exercise of eminent domain by any party to acquire any additional interest in the Leased Property from any other party.

b. *Establishment of Joint Operations Committee.* The Parties shall establish and participate in a Joint Operations Committee (the "**JOC**") to serve in an advisory capacity to the Conservation District, which shall assist the Conservation District to develop a schedule and budget for planned operation and maintenance activities relating to the recharge of water on the Leased Property, and perform other functions as otherwise specified herein, under such rules and procedures as it shall formulate and unanimously approve. The JOC shall meet at least twice a year to plan water recharge, review financial and water accounting matters implicated hereunder, and review performance.

c. *Joint Reporting.* The Parties shall jointly provide planning documents, monitoring reports, and other records that may be requested by authorized agencies to demonstrate compliance with federal, state or local laws and regulations. Specifically, the Parties shall continue to cooperate in the preparation and submission of annual reports to the California State Water Resources Control Board, which reports will follow the format used by the Parties in reporting the use of water for calendar year 2010. A copy of the report filed with the California State Water Resources Control Board is attached hereto as Exhibit 5 and incorporated herein by reference.

d. *Water Resources Management.*

(1) The Parties will continue to coordinate all recharge of water with one another to protect and enhance the safe yield in the SBBA. Specifically, the Parties will: (i) jointly develop the Regional Conjunctive Use Plan (or its equivalent) through the Basin Technical Advisory Committee, (ii) seek additional opportunities to increase safe yield in the SBBA by engaging in cooperative joint development of new water supply projects or conservation programs in the region, and (iii) cooperate with one another to document the water resource management benefits accrued by establishing and implementing this Agreement.

(2) The parties agree to dedicate and use the water made available pursuant to their respective water rights in and to the Santa Ana River to give priority to preserving the safe yield of the SBBA, as part of the reasonable and prudent management of their entire portfolio of water resources. All parties shall refrain from contesting any water rights claimed or held by one another at any time during the term of this Agreement, so long as such water rights are exercised in the manner consistent with this Agreement.

(3) The Parties will not export native water from the SBBA, or recharge water on behalf of agencies located outside the SBBA, except as

provided for by the 1969 *Western* Judgment and/or by the Regional Conjunctive Use Plan (or its equivalent).

5. *Amendments.* The Parties will negotiate amendments, including but not limited to areal expansion of the scope of activities, to this Agreement in good faith and not unreasonably withhold consent.

6. *Liberal Construction.* The Parties shall construe all terms and conditions in this Agreement in a manner which most favors increasing available water supplies by encouraging greater recharge of water in the area.

7. *Indemnification*

a. *Generally.* Each Party shall indemnify, defend and hold harmless the other Parties, their directors, officers, employees and agents from and against all damages, liabilities, claims, actions, demands, costs and expenses (including, but not limited to, costs of investigations, lawsuits and any other proceedings whether in law or in equity, settlement costs, attorneys' fees and costs), and penalties or violations of any kind, which arise out of, result from, or are related to a Party's performance of its obligations under this Agreement. In extending such indemnification, however, no party hereto waives any sovereign or governmental immunities, privileges, or rights that they may have or enjoy under any applicable law, including but not limited to California Government Code sections 810 et seq., and except as otherwise specifically provided for hereunder, and each party reserves all such immunities, privileges and rights , and any claims or other procedures applicable to same, that may presently exist or hereafter be created, to themselves, as against each of the other parties, and as against any third party.

b. *Indemnification Procedures.* Any Party that is an indemnified party (the "**Indemnified Party**") that has a claim for indemnification against the other Party (the "**Indemnifying Party**") under this Agreement, shall promptly notify the Indemnifying Party in writing, specifying the nature of the claim, the grounds upon which the Indemnified Party believes the Indemnifying Party is liable in whole or in part for the liability or other obligation asserted under the claim, and including any appropriate demand for defense or indemnification, or both. No delay on the part of the Indemnified Party in notifying the Indemnifying Party shall relieve the Indemnifying Party from any obligation unless (and then solely to the extent) the Indemnifying Party is prejudiced. Further, the Indemnified Party shall promptly notify the Indemnifying Party of the existence of any claim, demand, or other matter to which the indemnification obligations apply, and shall give the Indemnifying Party a reasonable opportunity to defend the same at its own expense and with counsel of its own selection, *provided* that the Indemnified Party shall at all times also have the right to fully participate in the disputed matter at its own expense. If the Indemnifying Party refuses to provide the

indemnity, or within a reasonable time after written notice from the Indemnified Party, fails to defend a claim, demand or other matter to which the indemnification obligations apply, the Indemnified Party shall have the right, but not the obligation, to undertake the defense of, and to compromise or settle (exercising reasonable business judgment), the claim or other matter, on behalf, or for the account, and at the risk, of the Indemnifying Party. If the claim is one that cannot by its nature be defended solely by the Indemnifying Party, then the Indemnified Party shall make available all information and assistance to the Indemnifying Party that the Indemnifying Party may reasonably request. In the event of any dispute between the Indemnified party and the Indemnifying Party as to whether the claim is one to which the indemnification obligations apply, the matter shall be resolved in the manner of resolution of disputes, as provided in paragraph 9 hereunder. Except as specifically provided otherwise in Paragraph 9(b) (4) below with respect to tolling of limitations periods, the notice provided for hereunder shall be in addition to, and not in place of, any other notice that may be provided for or otherwise required under law.

8. *Force Majeure.* In addition to any other specific provisions of this Agreement, a Party hereto shall not be deemed to be in default under this Agreement where failure or delay in performance of any of such Party's obligations under this Agreement is caused by floods, earthquakes, winds, other Acts of God, power outages, equipment failure, acts of vandalism, fires or other casualties, wars, riots or similar hostilities, strikes and other labor difficulties beyond the Party's control, (including the Party's employment force), enactment of new or conflicting, laws or regulations, including any new listing of endangered species or designation of critical habitat for endangered species, court actions (such as restraining orders or injunctions), judicial actions such as issuance of restraining orders and injunctions, or other causes beyond such Party's control. If any one or more of such events occur, the term of this Agreement and the time for performance by any Party of any of its obligations hereunder shall be extended by the period of time that such one or more events prevented or delayed such performance, provided that the term of this Agreement shall not be extended under any circumstances for more than five (5) years. In the event that said period of time must be extended by more than five years, this Agreement shall automatically terminate.

9. *Administration of Agreement*

a. *Books and Records.* Each Party shall have access to and the right to examine any of the other Party's pertinent books, documents, papers or other records (including, without limitation, records contained on electronic media) relating to the performance of that Party's obligations pursuant to this Agreement. Each Party shall retain all such books, documents, papers or other records to facilitate such review in accordance with that Party's record retention policy. Access to each Party's books and records shall be during normal business hours only.

Nothing in this paragraph shall be construed to operate as a waiver of any applicable privileges.

b. *Disputes*. The Parties recognize that there may be disputes regarding the obligations of the Parties or the interpretation of this Agreement. The Parties agree that they may attempt to resolve disputes as follows:

(1) *Statement Describing Alleged Violation of Agreement.* A Party or Parties alleging a violation of this Agreement (the "**Initiating Party(ies)**") shall provide a written statement describing all facts that it believes constitute a violation of this Agreement to the Party(ies) alleged to have violated the terms of this Agreement (the "**Responding Party(ies)**").

(2) *Response to Statement of Alleged Violation.* The Responding Party(ies) shall have sixty days from the date of the written statement to prepare a written response to the allegation of a violation of this Agreement and serve that response on the Initiating Party(ies) or to cure the alleged violation to the reasonable satisfaction of the Initiating Party(ies). The Initiating Party(ies) and the Responding Party(ies) shall then meet within thirty days of the date of the response to attempt to resolve the dispute amicably.

(3) *Mediation of Dispute.* If the Initiating Party(ies) and the Responding Party(ies) cannot resolve the dispute within ninety days of the date of the written response, they shall engage a mediator, experienced in water-related disputes, to attempt to resolve the dispute. Each Party shall ensure that it is represented at the mediation by a Director or Councilperson. These representatives of the Initiating Party(ies) and the Responding Party(ies) may consult with staff and/or technical consultants during the mediation and such staff and/or technical consultants may be present during the mediation. The costs of the mediator shall be divided evenly between the Initiating Party(ies) and the Responding Party(ies).

(4) *Prior to Claims Under California Tort Claims Act.* The Parties agree that the procedure described in this paragraph represents an effort to resolve disputes without the need for a formal claim under the California Tort Claims Act or other applicable law. The period of time for the presentation of a claim by one Party against another shall be tolled for the period from the date on which the Initiating Party(ies) file a written statement until the date upon which the mediator renders a decision.

(5) *Reservation of Rights.* Nothing in this paragraph shall require a Party to comply with a decision of the mediator and, after the completion of the mediation process described above, each Party shall retain and may exercise at any time all legal and equitable rights and remedies it may have to enforce the terms of this Agreement; provided, that prior to commencing litigation, a Party shall provide at least five calendar days' written notice of its intent to sue to all Parties.

c. *Termination of Agreement*

(1) *Failure to Obtain Permits.* The Parties recognize and acknowledge that the implementation of this Agreement may require one or more Parties to obtain permits or other regulatory approvals from one or more local, state or federal regulatory agencies, including but not limited to the Regional Water Quality Control Board, the California Department of Fish & Game and the U.S. Fish & Wildlife Service or the U.S. Army Corps of Engineers. Because of the significant regulatory uncertainties associated with obtaining these permits or regulatory approvals, the Parties agree that, if Valley District and Western have not received all regulatory permits or approvals required or useful for groundwater replenishment on the Leased Property within ten years from the effective date of this Agreement, Valley District and/or Western may terminate this Agreement at any time by providing the Conservation District with one-year's written notice of such termination. In the event that Valley District or Western, but not both wish to terminate this Agreement, the Party wishing to terminate this Agreement shall be allowed to terminate the Agreement as to itself and the remaining two Parties may continue the Agreement on such terms as they deem to be equitable.

(2) *Material Breach.* If one Party deems that another Party has materially breached one of the provisions of this Agreement, the Parties shall use the dispute resolution procedures set forth in paragraph 9. b. above in an effort to resolve the dispute amicably. If, the dispute resolution process described in paragraph 9. b. above is not successful in resolving the dispute, any Party may terminate this Agreement for material breach thereof, and may seek any remedy that it would otherwise be entitled to in a court of law.

d. *Recordation of Agreement.* All Parties agree that this Agreement constitutes a lease of certain lands by the Conservation District to Valley District and Western for the purpose of constructing, operating, maintaining, repairing and rehabilitating percolation basins and ancillary facilities on the Leased Property, and consequently, all Parties agree that this Agreement should be recorded in the

Official Records of the County of San Bernardino. Valley District shall, within ten days of the effective date of this Agreement, cause this agreement to be recorded in the Official Records of the County of San Bernardino and shall promptly provide the Conservation District and Western with recorded copies of this Agreement upon receipt of such copies from the County of San Bernardino.

10. *General Provisions.*

a. *Authority.* Each signatory of this Agreement represents that s/he is authorized to execute this Agreement on behalf of the Party for which s/he signs. Each Party represents that it has legal authority to enter into this Agreement and to perform all obligations under this Agreement.

b. *Amendment.* This Agreement may be amended or modified only by a written instrument executed by each of the Parties to this Agreement.

c. *Jurisdiction and Venue.* This Agreement shall be governed by and construed in accordance with the laws of the State of California, except for its conflicts of law rules. Any suit, action, or proceeding brought under the scope of this Agreement shall be brought and maintained to the extent allowed by law in the County of San Bernardino, California.

d. *Headings.* The paragraph headings used in this Agreement are intended for convenience only and shall not be used in interpreting this Agreement or in determining any of the rights or obligations of the Parties to this Agreement.

e. *Construction and Interpretation.* This Agreement has been arrived at through negotiations and each Party has had a full and fair opportunity to revise the terms of this Agreement. As a result, the normal rule of construction that any ambiguities are to be resolved against the drafting Party shall not apply in the construction or interpretation of this Agreement.

f. *Entire Agreement.* This Agreement constitutes the entire agreement of the Parties with respect to the subject matter of this Agreement and, save as expressly provided in this Agreement, supersedes any prior oral or written agreement, understanding, or representation relating to the subject matter of this Agreement.

g. *Partial Invalidity.* If, after the date of execution of this Agreement, any provision of this Agreement is held to be illegal, invalid, or unenforceable under present or future laws effective during the term of this Agreement, such provision shall be fully severable. However, in lieu thereof, there shall be added a provision as similar in terms to such illegal, invalid or unenforceable provision as may be possible and be legal, valid and enforceable.

h. *Successors and Assigns*. This Agreement shall be binding on and inure to the benefit of the successors and assigns of the respective Parties to this Agreement. No Party may assign its interests in or obligations under this Agreement without the written consent of the other Parties, which consent shall not be unreasonably withheld or delayed.

i. *Waivers*. Waiver of any breach or default hereunder shall not constitute a continuing waiver or a waiver of any subsequent breach either of the same or of another provision of this Agreement and forbearance to enforce one or more of the rights or remedies provided in this Agreement shall not be deemed to be a waiver of that right or remedy.

j. *Attorneys' Fees and Costs*. The prevailing Party in any litigation or other action to enforce or interpret this Agreement shall be entitled to reasonable attorneys' fees, expert witnesses' fees, costs of suit, and other and necessary disbursements in addition to any other relief deemed appropriate by a court of competent jurisdiction.

k. *Necessary Actions*. Each Party agrees to execute and deliver additional documents and instruments and to take any additional actions as may be reasonably required to carry out the purposes of this Agreement.

l. *Compliance with Law*. In performing their respective obligations under this Agreement, the Parties shall comply with and conform to all applicable laws, rules, regulations and ordinances.

m. *Third Party Beneficiaries*. This Agreement shall not create any right or interest in any non-Party or in any member of the public as a third party beneficiary.

n. *Counterparts*. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original, but all of which together shall constitute but one and the same instrument.

o. *Notices*. All notices, requests, demands or other communications required or permitted under this Agreement shall be in writing unless provided otherwise in this Agreement and shall be deemed to have been duly given and received on: (i) the date of service if served personally or served by facsimile transmission on the Party to whom notice is to be given at the address(es) provided below, (ii) on the first day after mailing, if mailed by Federal Express, U.S. Express Mail, or other similar overnight courier service, postage prepaid, and addressed as provided below, or (iii) on the third day after mailing if mailed to the Party to whom notice is to be given by first class mail, registered or certified, postage prepaid

572 **Table of Exhibits**

573 Exhibit 1 Leased Property including Exhibit 1A and 1B

574 Exhibit 2 Existing and Future Facilities

575 Exhibit 3 CEMEX Lease

576 Exhibit 4 Robertson's Ready Mix Lease

577 Exhibit 5 2010 State Water Rights Filing

WESTERN MUNICIPAL WATER DISTRICT
"Western"

Donald D. Galleano
President
Board of Directors

Approved as to form only:

Jeff Ferre
Best, Best & Krieger

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT
"Valley District"

C. Patrick Milligan
President
Board of Directors

Approved as to form only:

David R.E. Aladjem
Special District Counsel

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT
"Conservation District"

Richard W. Corneille
President
Board of Directors

Approved as to form only:

David B. Cosgrove
General Counsel

State of California)
County of Riverside)

On Dec 19, 2012, before me, Teresa VAN Scyoc,
(insert name and title of the officer)
Notary Public, personally appeared Donald D. GALLEANO,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Teresa Van Scyoc (Seal)



State of California)
County of San Bernardino)

On Dec. 12, 2012, before me, M. Galvez, Notary Public,
(insert name and title of the officer)
Notary Public, personally appeared Richard W. Corneille and no one else,
who proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ ~~(is/are~~ subscribed to the within instrument and acknowledged to me that ~~he/she/they~~ executed the same in ~~his/her/the~~ir authorized capacity~~(ies),~~ and that by ~~his/her/their~~ signature~~(s)~~ on the instrument the person~~(s)~~, or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ (Seal)

M. GALVEZ
COMM. # 1870870
NOTARY PUBLIC - CALIFORNIA
SAN BERNARDINO COUNTY
MY COMM. EXP. DEC. 6, 2013

State of California)
County of San Bernardino)

On Dec. 12, 2012, before me, L. Jaramillo, Notary Public
(insert name and title of the officer)
Notary Public, personally appeared C. Patrick Milligan,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(~~ies~~), and that by his/~~her/their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

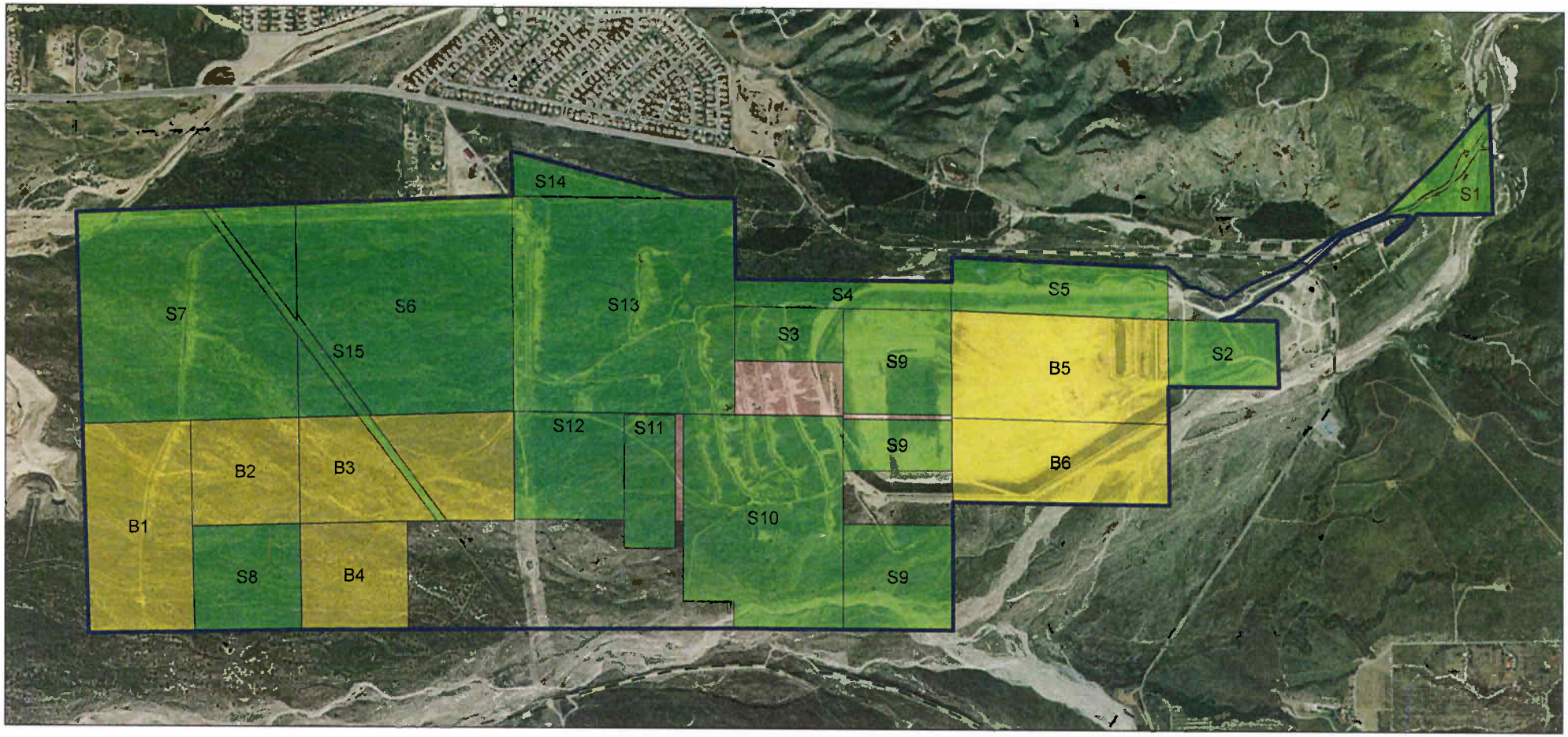
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

L. JARAMILLO
Commission # 1974864
Notary Public - California
San Bernardino County
My Comm. Expires May 10, 2016

Signature L. Jaramillo (Seal)

EXHIBIT 1



- - - - Wash Plan Area Boundary
SAR Recharge Area (1485 Acres)
SBVWCD Lands (952 Acres)
BLM Property Access (513 Acres)
Other Ownership Limited Access

Exhibit 1

N
W E
S

0 950 1,900 3,800

Feet

C. Brudin
14 Sept 2012
M:\2011 Projects\Land Ownership District_Exhibit1_Edits.mxd

SBV WATER CONSERVATION DISTRICT
OUR NAME IS OUR MISSION

EXHIBIT 1A
LEGAL DESCRIPTION
SBVWCD LANDS

THOSE PORTIONS OF SECTIONS 4, 6, 7 AND 8, TOWNSHIP 1 SOUTH, RANGE 2 WEST, SAN BERNARDINO MERIDIAN AND THOSE PORTIONS OF SECTION 12, TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF HIGHLAND, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

PARCEL S1: (A.P. NO. 0297-041-07)
THAT PORTION OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 4, SAID PORTION LYING SOUTHEASTERLY OF THE FOLLOWING DESCRIBED LINE:

BEGINNING AT THE NORTHEAST CORNER OF SAID SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER; THENCE SOUTHWESTERLY TO THE SOUTHWEST CORNER OF SAID SECTION 4.

PARCEL S2: (A.P. NO. 0297-061-01)
THE NORTH HALF OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 8.

PARCEL S3: (A.P. NO. 0297-051-06)
THE NORTH HALF OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 7, COMPRISING 20 ACRES, MORE OR LESS.

PARCEL S4: (A.P. NO. 0297-051-05)
THE SOUTH 20 ACRES OF THE NORTH OF THE NORTHEAST QUARTER OF SAID SECTION 7.

PARCEL S5: (A.P. NO. 0297-061-03)
THE SOUTH HALF OF THE NORTH HALF OF THE NORTHWEST QUARTER OF SAID SECTION 8, COMPRISING 40 ACRES, MORE OR LESS.

PARCEL S6: (A.P. NO. 0291-151-02)
THE NORTHEAST QUARTER OF SAID SECTION 12, EXCEPT RAILROAD RIGHT-OF-WAY AND EXCEPT STATION AT APLIN AND COMPRISING 157 ACRES, MORE OR LESS.

PARCEL S7: (A.P. NO. 0291-151-01)
THE NORTHWEST QUARTER OF SAID SECTION 12, EXCEPT RAILROAD RIGH-OF-WAY.

PARCEL S8: (A.P. NO. 0291-161-04)
THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 12.

PARCEL S9: (A.P. NO. 0297-051-07, 0297-051-08, 0297-051-09, 0297-051-10, 0297-071-09, 0297-071-10, 0297-071-13, 0297-071-14, 0297-071-16, 0297-071-17)
LOTS 1 THROUGH 6 AND LOTS 9 THROUGH 12 OF VAN BUREN TRACT, AS SHOWN ON A MAP RECORDED IN BOOK 8, PAGE 69 OF MAP IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PARCEL S10: (A.P. NO. 0297-071-08)
THE WEST HALF OF THE SOUTHEAST QUARTER OF SAID SECTION 7, COMPRISING 80 ACRES, MORE OR LESS.

LEGAL DESCRIPTION (Continued)

PARCEL S11: (A.P. NO. 0297-071-02, 0297-071-03, 0297-071-04)
LOTS 4 THROUGH 15 OF CHICAGO SUBDIVISION TO REDLANDS, AS SHOWN ON A MAP RECORDED IN BOOK 12, PAGE 52 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PARCEL S12: (A.P. NO. 0168-311-06)
THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 7.

PARCEL S13: (A.P. NO. 0297-051-01 AND 0297-051-02)
THE NORTHWEST QUARTER OF SAID SECTION 7.

PARCEL S14: (A.P. NO. 0297-011-07)
THAT PORTION OF THE SOUTHWEST QUARTER OF SAID SECTION 6, LYING SOUTH OF THE SOUTH LINE OF THE EXISTING METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA PIPELINE RIGHT OF WAY AS THE SAME NOW EXISTS. EXCEPT THAT PORTION THEREOF CONVEYED TO THE NORTHFORK WATER COMPANY BY DEED RECORDED MARCH 7, 1909 IN BOOK 388 OF DEEDS, PAGE 120, RECORDS OF SAID COUNTY.

PARCEL S15: (A.P. NO. 0291-151-05)
PARCEL 1 OF THAT CERTAIN DEED RECORDED JUNE 28, 1984 AS INSTRUMENT NO. 84-152554 OF OFFICIAL RECORDS, RECORDS OF SAID COUNTY.

SUBJECT TO ALL RESERVATIONS, RESTRICTIONS, EASEMENTS, OFFERS OF DEDICATIONS, RIGHTS AND RIGHT OF WAYS OF RECORD.

This legal description was prepared by me or under my direction.



By:_____
Edward J. Bonadiman, P.L.S.
Date: 09/17/2012 L. S. #:7529

EXHIBIT 1B
LEGAL DESCRIPTION
BLM PROPERTY ACCESS

THOSE PORTIONS OF SECTION 8, TOWNSHIP 1 SOUTH, RANGE 2 WEST, SAN BERNARDINO MERIDIAN AND THOSE PORTIONS OF SECTION 12, TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF HIGHLAND, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

PARCEL B1: (A.P. NO. 0297-161-05)
THE WEST HALF THE SOUTHWEST QUARTER OF SAID SECTION 12.

PARCEL B2: (A.P. NO. 0297-161-06)
THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 12.

PARCEL B3: (A.P. NO. 0297-161-01)
THE NORTH HALF OF THE SOUTHEAST QUARTER OF SAID SECTION 12.

PARCEL B4: (A.P. NO. 0297-161-03)
THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 12.

PARCEL B5: (A.P. NO. 0297-061-02)
THE SOUTH HALF OF THE NORTHWEST QUARTER OF SAID SECTION 8.

PARCEL B6: (A.P. NO. 0297-061-02)
THE NORTH HALF OF THE SOUTHWEST QUARTER OF SAID SECTION 8.

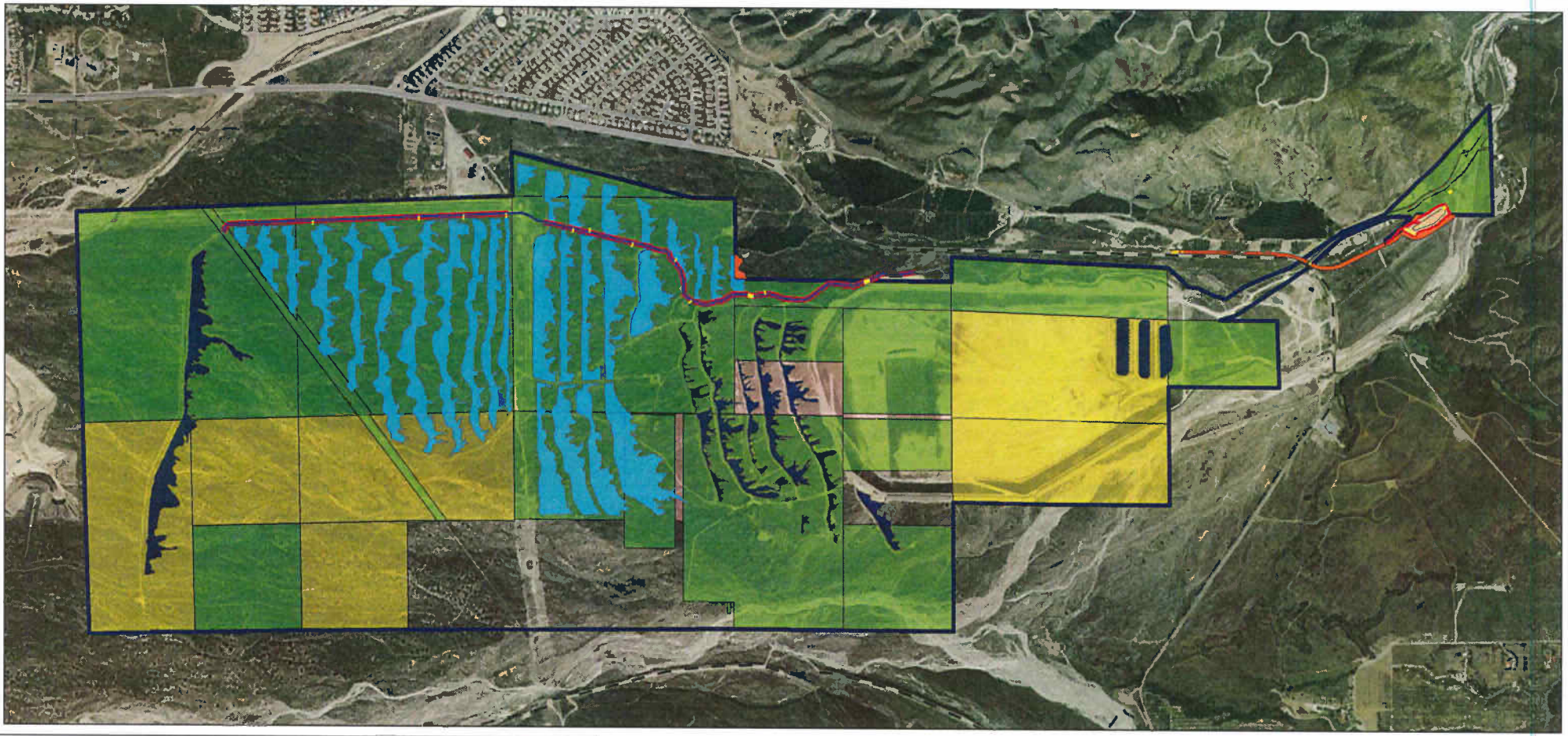
SUBJECT TO ALL RESERVATIONS, RESTRICTIONS, EASEMENTS, OFFERS OF DEDICATIONS, RIGHTS AND RIGHT OF WAYS OF RECORD.

This legal description was prepared by me or under my direction.



By:_____
Edward J. Bonadiman, P.L.S.
Date: 09/17/2012 L. S. #:7529

EXHIBIT 2



Legend

- Wash Plan Area Boundary
- Structures
- Canal
- Access Road
- Existing Basins
- Sedimentation Basins
- Pipeline Easement
- Planned Improvements
- SAR Recharge Area (1485 Acres)
- SBVWCD Lands (952 Acres)
- BLM Property Access (513 Acres)
- Other Ownership Limited Access

Exhibit 2

N
W E
S

0 950 1,900 3,800

Feet

C. Brudin
14 Sept 2012
M:\2011 Projects\Land Ownership District_Exhibit1.mxd

SBV WATER CONSERVATION DISTRICT

OUR NAME IS OUR MISSION

Exhibit 3

Cemex Lease

RECORDING REQUESTED BY AND
WHEN RECORDED RETURN TO:

San Bernardino Valley Water
Conservation District
1630 West Redlands Boulevard
Suite A
Redlands, CA 92373-8032

Attn: General Manager

FREE RECORDING REQUESTED
UNDER GOVERNMENT CODE
SECTION 6103

THIS SPACE FOR RECORDER'S USE ONLY

MINERAL LEASE FOR EXTRACTION OF SAND AND GRAVEL MATERIALS

THIS MINERAL LEASE FOR EXTRACTION OF SAND AND GRAVEL MATERIALS ("Lease") is entered into this 1 day of November, 2011, by and between SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT ("District") and CEMEX CONSTRUCTION MATERIALS PACIFIC, LLC ("Lessee"). This Lease is entered into in consideration of all of the following:

A. District is a California Water Conservation District, duly formed and existing under California Water Code section 74000 et seq. District has the authority to enter into leases of property it owns pursuant to provisions of California Water Code section 74550, and other provisions of law. Lessee is a limited liability corporation, with its principal place of business located in El Dorado Hills, California. Lessee is the successor-in-interest to a prior lease agreement between the District and C. L. Pharris Sand & Gravel, Inc.

B. District's and Lessee's predecessor-in-interest, C. L. Pharris Sand & Gravel, Inc., entered into a "Lease Agreement" dated September 10, 1979. That Lease Agreement authorized various excavation and sale of sand, gravel, and related material from property owned by the District, on terms and conditions stated therein, and incorporating prior leases between the parties (collectively "Original Lease").

C. The Original Lease was amended variously between the parties over time, culminating on a "Lease Amendment" dated July 10, 1997. Under the "Lease Amendment," the term of the lease was defined as an initial term ending June 1, 2011, with nine (9) additional successive five (5) year options to renew. The Lease Amendment required renewal notices to be in writing, made no later than six (6) months prior to the expiration of the then-existing term. The parties followed these procedures through the first five (5)-year extension of the term.

D. A dispute then arose between Lessee and the District regarding Lessee's expressed intent to enter an additional five (5)-year term under the lease. District rejected Lessee's attempt to exercise an additional five (5)-year option as untimely, and considers the lease effectively terminated as of June 1, 2011. Lessee believes that the option for an additional five (5)-year period under the lease was properly exercised, and that the term of the original lease, as modified by the Lease Amendment, continues until June 1, 2016.

E. The parties have met and conferred pursuant to a "Tolling Agreement Re Lease Dispute," they entered into on or about June 1, 2011 and extended on August 31, 2011 to resolve their differences. Pursuant to such discussions, the parties have now determined to enter into a new lease, defining new terms, and replacing, superseding, and rendering of no further effect the Original Lease, the Lease Amendment, and all previous agreements between District and Lessee with respect to lease of the District's property.

NOW, THEREFORE, in consideration of all of the foregoing, the parties do hereby set forth the terms of their new and sole lease agreement as follows:

1.0 Definitions. As used herein, the following terms shall have the following defined meanings:

1.1. "DISTRICT" shall mean the San Bernardino Valley Water Conservation District.

1.2. "LESSEE" shall mean Cemex Construction Materials Pacific, LLC, and its successors and assigns.

1.3. "PREMISES" shall mean all those properties owned by DISTRICT, more specifically described in the legal description attached hereto as Exhibit "A" and as more specifically depicted in the plat map attached hereto as Exhibit "B," with the exception of the northeasterly one-quarter of Section 12, which shall not be included within the PREMISES.

1.4. "MATERIAL" shall mean sand, rock, gravel, and kindred substances, lying on or under the PREMISES, and suitable for commercial extraction, processing, and sale, and any saleable by-products from same.

1.5. "Ton" shall mean a measurement of 2,000 pounds of material aggregate, by weight.

1.6. "INDEX" shall mean the Bureau of Labor Statistics Producer Price Index for Mining (Except Oil and Gas): NAICS 212, or if such index is no longer published or kept, such similar index as may be agreed to by the parties.

1.7. "FAIR MARKET ROYALTY" shall mean the prevailing market royalty rate being paid for Material within the markets served or able to be served by Material from the Premises, and such markets as may be reasonably comparable thereto, as of a then-present data value.

1.8. "WASH PLAN" shall mean the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan, a comprehensive land use, property exchange, and mining and related permitting effort undertaken by District, Lessee, and a number of other public and private entities for realignment of prior leases for sand and gravel extraction, and for accommodation of water conservation and species habitat preservation.

1.9. "TRANSFER PREMISES" shall mean those properties which District and Lessee agree are appropriate for replacement of any portion of the Premises which may be exchanged to the federal government, Bureau of Land Management, or other entity, under the implementation and effectuation of the Wash Plan, or otherwise rendered unavailable for extraction, processing, and sale of Material. The parties contemplate that the Transfer Premises will consist of a portion of those properties already proposed to be exchanged from the Bureau of Land Management to the District under the Wash Plan, or otherwise transferred from the federal government to the District for the purposes of making such transferred areas available for mining. District and Lessee agree, however, that availability of, and the specific areas of the Transfer Premises cannot be determined precisely at this time, and that the exact areas, locations and parameters of the Transfer Premises will have to be determined in connection with the ultimate approvals that might be obtained through the Wash Plan.

1.10. "COMMENCEMENT DATE" shall be the date this Lease becomes effective, November 1, 2011.

1.11. "LEASE YEAR" shall mean the year following the commencement date in the first year of this Lease, and for every subsequent year, the period beginning each year on the anniversary of the Commencement Date, and continuing one (1) year thereafter.

1.12. "ORANGE STREET PLANT SITE" shall mean that area generally described in the legal description and depicted on the plat map collectively attached as Exhibit "D" hereto, consisting of approximately 100 acres, on which Lessee has, as of the Commencement Date, established and maintains a mining processing plant.

1.13. "REDLANDS AGGREGATES SITE" shall mean the area generally described in the legal description and depicted on the plat map collectively attached as Exhibit "E" hereto.

2.0 Lease of Premises and Rights Conferred.

2.1. Under this Lease, District hereby grants to Lessee the right to come onto the Premises, and to dig, excavate, transport, wash, process, crush, convey, stockpile, and sell all Material on the Premises, consistent with any applicable federal, state, or local regulations, and conditions of any permits that may be applicable thereto. This Lease includes the right to maintain all processing plants, structures, facilities, and equipment legally established by Lessee and existing on the Premises as of the Commencement Date, as are necessary or suitable for the defined purposes of the Lease. Lessee may also establish such other plants, buildings, paved roadways, structures, or other permanent improvements, or any silt ponds or places for the deposition of impermeable materials (collectively "Improvements") on the Premises, as may be necessary or appropriate for accomplishment of the purposes of the Lease, subject to the prior

written approval of the District as to the location, extent, specifications, and composition of such improvements. District's approval shall not be unreasonably withheld, conditioned or delayed. District's approval of Lessee's Improvements shall be directed to District's reserved water spreading and other reserved rights in, to, and for the Premises under this Lease, and the compliance and consistency of such Improvements with the terms and conditions of this Lease, and shall not be directed to the suitability of such Improvements for Lessee's purposes, nor the design, effectiveness, safety, nor engineering suitability of such Improvements, except insofar as District may, but is not required to, confirm that such Improvements as proposed meet otherwise applicable legal requirements and standards. Lessee shall not undertake any construction of such improvements without prior District review and approval of the plan for the location and other specifications for such improvements. District shall have a period of 45 days after submission of the complete construction plans and working drawings by Lessee of any proposed improvement construction to approve, conditionally approve, or disapprove such proposed improvements. Any disapproval by District shall be accompanied by written statement of the reasons therefor, including an explanation of what would be required for approval. Upon District's failure to approve, conditionally approve, or disapprove the Improvements construction within the 45 day period, the plans shall be deemed approved as submitted, so long as they are consistent with all other applicable legal requirements and standards. Lessee may relocate any Improvements located on the Premises, subject to District's approval, in the same manner as for Lessee's original establishment of Improvements. District may require Lessee to remove any Improvements placed on the Premises for which Lessee failed to provide the 45 day notice and opportunity for review and approval of District called for hereunder to the extent such Improvements violate applicable legal requirements, without any liability of District to Lessee. Such Improvements so constructed shall be the property of Lessee during the duration of the Lease, and shall be removed by Lessee upon the expiration or earlier termination of this Lease; provided, however, District may in writing elect to permit Lessee to leave any or all of the Improvements on the Premises after expiration of the Lease, in which case all such Improvements shall become the property of the District. Lessee shall assume all maintenance and insurance responsibilities for any Improvements constructed on the Premises. In addition, Lessee shall provide District no less than forty-five (45) days' notice before Lessee establishes any staging areas, processing areas, unpaved but graded and compacted haul routes, and equipment servicing areas which do not otherwise fit the definition of Improvements provided above, though such facilities shall not require District's prior approval before Lessee may be permitted to place them on the Premises. Further, Lessee shall provide to District no less than fifteen (15) days' notice before Lessee establishes any portable crushing or processing sites, which do not otherwise fit the definition of Improvements provided above, though such facilities shall likewise not require District's prior approval before Lessee may be permitted to place them on the Premises.

2.2. Premises Leased in "As Is" Condition. Lessee acknowledges that it is granted lease rights to the Premises, and the right to move Material therefrom, on an "as is" basis, and Lessee takes and operates the Premises without reliance on any representation by the District, or any of its officers, employees, agents, or representatives, or any other person, concerning the extent or quality of the Material on the Premises, its fitness for Lessee's intended use, or any particular purpose or use, its income producing history, potential, or capabilities, its value, or any other promise, representation, or inducement not expressly set forth in writing in

this Lease. District represents and warrants that it has not caused nor is aware of any environmental conditions relating to the Premises.

2.3. No Warranty. Lessee acknowledges that neither the District, nor any of its officers, employees, agents, or representatives, has made any written or oral representation, promise, or warranty, express or implied, arising out of or in connection with the Material on the Premises, or the transfer of Premises, if any, its fitness for Lessee's intended use, or any purpose or use, its income producing history, potential or capabilities, its value, the likely success or outcome of the Wash Plan, or any other matter not expressly set forth in writing in this Lease. Lessee acknowledges it has inspected, and occupied, the Premises prior to the execution of this Lease. Lessee acknowledges it takes and accepts the Premises in the condition in which the Material on the Premises (or lack thereof) exists as of the Commencement Date this Lease. Lessee assumes that any and all change in the condition of the rock on the Premises either before the Commencement Date or during the term of this Lease.

3.0 Lease Term.

3.1. Original Term. This lease shall begin on the Commencement Date, and shall continue in full force and effect for a period of four (4) years thereafter.

3.2. Options to Renew and Right of First Refusal. So long as Lessee shall not be in material breach of this Lease, Lessee shall have one (1) additional, successive six -year option to renew ("Option to Renew"). The renewal shall be on the terms of this Lease, or such additional or revised terms as the parties may then agree to.

3.3. Procedure for Exercise of Options.

(a) Initial Option. In the event Lessee elects to exercise the Option to Renew, Lessee shall provide written notice to District in writing. Such Option to Renew shall be made no later than one hundred eighty (180) days prior to the expiration of the Original Term of this Lease, to the person and in the manner set forth herein for the provision of Notices in Section 14.1 below.

(b) Exclusive Negotiation Period. In the event Lessee fails to exercise the six (6) year option provided for above, this Lease shall terminate as of the expiration of the initial four-year term. In the event Lessee does exercise the six (6) year option, Lessee shall have an Exclusive Negotiation Period with the District to meet and confer with District regarding the terms and conditions of a renewal or replacement lease for the Premises. Such Exclusive Negotiation Period shall run concurrently with the final ninety (90) days of the six (6) year option period so exercised by Lessee. The Exclusive Negotiation Period shall arise only upon the expiration of the exercised six (6) year option term; there shall be no Exclusive Negotiation Period upon the termination of the Lease, for whatever reason, or in the event of a Lessee default. During the Exclusive Negotiation Period, District shall not make any effort to sell, lease, offer, market, or solicit proposals with or from any party for the excavation, processing, or sale of Material from the Premises, except Lessee. Neither District nor Lessee shall be

obligated to enter into any type of an agreement during or as a result of the Exclusive Negotiation Period, but the parties shall meet and confer in good faith to discuss and explore the possibility of entering into such an agreement, should the parties determine that doing so would be in their mutual benefit.

(c) Right of First Refusal. In the event the Exclusive Negotiation Period occurs, and fails to result in an agreement between District and Lessee, and only in such event, Lessee shall have a Right of First Refusal upon any offer District may make to any other party for the right to excavate, process, or sell Material from all or any part of the Premises. Such Right of First Refusal shall entitle Lessee to priority acceptance of any such offer District may make to any other party, on the identical terms, conditions, requirements, and stipulations as the District makes, and is willing to accept, from any other party. The Right of First Refusal shall begin on the expiration of the Exclusive Negotiation Period, and shall continue for a period of three (3) years thereafter. District shall, prior to making or soliciting any offer for the right to excavate, process, or sell Material from the Premises advise the party or parties with whom it is dealing of the Lessee's Right of First Refusal. District shall require any offer it receives from any party to excavate, process, or sell Material from all or a portion of the Premises, and which it is prepared to accept and is authorized by its legislative body to accept, to be reduced to writing, and shall within thirty (30) days of any such offer, provide a written copy to Lessee, to the person and in the manner provided for in Section 14.1, Notices, below. Lessee shall have thirty (30) days thereafter to accept or reject the offer. In the event Lessee accepts the offer, District and Lessee shall enter into an agreement, on the identical terms as proposed to District and conveyed to Lessee. In the event Lessee rejects the offer, the Right of First Refusal shall thereupon terminate, and be of no further force and effect.

4.0 Royalty and Rental Payments.

4.1. Orange Street Plant Site Rent. Lessee shall pay to District, throughout the entire term of this Lease and any holdover period, the sum of Four Thousand Dollars ($4,000.00) per month for the lease of the Orange Street Plant Site ("Orange Street Plant Site Rent"). Such rent shall be in addition to, and shall not be credited against, any royalty amounts due, including guaranteed annual minimum royalty, which may be otherwise due and owing under this Lease.

4.2. Royalty. In addition to the plant site rent, Lessee shall pay a royalty to District, for every ton of Material removed from the Premises, as measured by State certified truck scales and recorded by a standardized, nationally recognized ticketing system whose mechanics and accuracy are disclosed and available to, and verifiable by, District. Lessee shall keep true, complete, and accurate records of all Material excavated on and removed from the Premises, and an accounting of all Material excavated and removed from the Redlands Aggregates Site. . Lessee shall report such figures, under penalty of perjury, to District on a monthly basis, in a form as District may reasonably specify and require. The parties shall track, calculate, and collect the royalty due on the excavated Material based on the amount of tonnage of Material sold or otherwise removed from the Premises and the Redlands Aggregates Site.

Any differences between the amount of Material excavated and the amount of Material sold or otherwise removed from the Premises shall be reconciled by way of a biannual audit. On or before ninety (90) days following the execution of this Agreement by both parties, District and Lessee shall jointly select and retain a party to perform a baseline aerial topographic survey of the Premises and the Redlands Aggregates Site. The parties shall share equally in the expense of the baseline aerial topographic survey, and once it is generated and delivered, the parties shall meet and confer to work out any issues or disagreements they may have regarding it, and both shall indicate in writing their approval of same, once any issues with the baseline survey that may arise are resolved. Once approved by both parties, the baseline aerial topographic survey shall serve as the beginning survey for later aerial topographic surveys to be performed under this Lease, for volumetric calculations of material excavated, inventoried, deposited into silt ponds, and removed from the premises by deduction. The volumetric results will be used to assess, compare, and reconcile the truck scale weight measurements. Based upon the results of the area topographic survey, Lessee and District shall reconcile the amounts paid on the tonnage sold or otherwise removed from the Premises and the Redlands Aggregates Site, and make any necessary adjustments to account for differences in the royalties due for Material from the Premises, and that from the Redlands Aggregates Site, and reconcile any amounts due or any credit for any amounts that may be overpaid during the immediately preceding twenty-four (24) month period. In the event the parties are unable to come to an agreement on such reconciliation, the matter shall be submitted to binding arbitration, as provided for herein.

4.3. Royalty Rate. For the first twelve (12) month period following the Commencement Date, the royalty rate shall be set at Fifty-Five Cents ($0.55) per ton. As of the first anniversary of the Commencement Date, the royalty rate shall be the Fair Market Royalty. On or before ninety (90) days prior to the first anniversary of the Commencement Date, the parties shall meet and confer, in an attempt to come to an agreement on the Fair Market Royalty. The parties shall provide, one to the other, any and all market analyses, appraisals, or other valuation Materials or opinions upon which their proposed Fair Market Royalty is based. If no agreement is reached within thirty (30) days of the parties' exchange of such information, the matter shall be submitted to binding arbitration, as provided for herein. The arbitrator shall select either one or the other of the parties' original Fair Market Royalty proposals, and the Fair Market Royalty rate so selected shall be the royalty rate paid by Lessee to the District for the remainder of the term, subject to any Index adjustment. The arbitrator shall not have the authority or discretion to compromise between the two parties' proposals, nor to come to an independent determination of the Fair Market Royalty rate. In the arbitration, no party may rely on, or submit to the arbitrator, any Material which was not originally exchanged pursuant to the exchange of Fair Market Royalty proposals ninety (90) days before the Commencement Date. The arbitrator shall only select one of the parties' Fair Market Royalty rates, which he or she determines most accurately determines the appropriate Fair Market Royalty.

4.4. Index Adjustment. All royalty rates shall be adjusted annually, on each anniversary of the Commencement Date, by any change in the Index, using 2012 as the base year. In no event, however, shall such change in any one year amount to a change in the applicable royalty rate more than fifty percent (50%), higher or lower, than the immediately preceding Fair Market Royalty rate. Such fifty percent limitation shall operate only to serve as the cap or floor for the year in which the change in the Index results in a change in the royalty rate of 50% or more, and not to change prospectively the Index calculation for succeeding years.

4.5. Guaranteed Annual Royalty; Orange Street Plant Site Material as Recovery of Credits.

(a) Guaranteed Annual Royalty Payments. Notwithstanding the level of excavation or sale of Material from the Premises, Lessee shall pay to District a guaranteed annual royalty, in addition to the Orange Street Plant Site rent. Such guaranteed annual royalty shall be in the amount of One Hundred Fifty Thousand Dollars ($150,000.00) for the first year of the Lease, and shall increase by an additional One Hundred Thousand Dollars ($100,000.00) on each anniversary of the Commencement Date thereafter; provided, however, such guaranteed annual royalty shall not exceed $550,000.00 annually. Such guaranteed annual royalty shall be paid in equal monthly installments, and shall be submitted along with all reporting by Lessee of its excavation and sales activities on the Premises and the Redlands Aggregate Site, comparing the amounts of guaranteed annual royalty paid, against the actual amount of Material excavated, and the actual amount of Material sold or otherwise removed from the Premises. The guaranteed annual royalty amount shall be paid by Lessee to the District; provided, however, to the extent District has Annual Royalty Credits in excess of Three Million Four Hundred Thousand Dollars ($3,400,000.00) ("Royalty Credits Cap"), Lessee's obligation to pay Guaranteed Annual Royalty Payments shall be suspended until such time as the Annual Royalty Credits are reduced below the Royalty Credits Cap., All per-ton royalty rates applicable to Material excavated by Lessee in excess of the guaranteed annual royalty rate shall be paid at the then-prevailing royalty rate, in addition to guaranteed annual royalty.

(b) Guaranteed Annual Royalty Credits. To the extent the per-ton royalty rate paid by Lessee in any given Lease Year is less than the amount of guaranteed annual royalty, Lessee shall be credited for the difference against any per-ton royalties otherwise due in any succeeding Lease Years above the guaranteed annual royalty due in such Lease Year, until all such credits have been offset against per-ton royalties in excess of applicable guaranteed annual rental. In no event shall such credit ever diminish or decrease the amount of guaranteed annual royalty due.

(c) Orange Street Plant Site Holdover to Retire Guaranteed Annual Royalty Credits. Except in the event of a Lessee default under Section 10.1 below, should this Lease expire or otherwise terminate prior to the time Lessee's guaranteed annual royalty credits have been retired, Lessee shall have the right, but not the obligation, to hold over and continue to occupy the Orange Street Plant site only, to remove any Improvements or other equipment or operations thereon, and to excavate and sell Material from such site. Such holdover right shall begin on the date the Lease expires or is terminated for any reason, including Lessee's exercise of its right of termination under Section 10.3 below. No guaranteed annual royalty or other royalty amounts shall be paid to District on the Material excavated and sold by Lessee from the Orange Street Plant Site during the holdover period, and such amounts of such per-ton royalties as would otherwise be applicable to the Material, as adjusted by the Index through and

including the holdover period, shall be applied to reduce the credits for guaranteed annual royalty payments made in excess of royalties paid on a per-ton basis. Lessee shall pay the Orange Street Plant site rent for all time that Lessee occupies the Orange Street Plant site during such holdover period, and such Orange Street Plant Site rental shall be adjusted by the Index, using the Effective Date as the base period and the beginning of the holdover period as the adjustment date for application of the Index adjustment. Thereafter, on each anniversary date of the beginning of the holdover period, the Orange Street Plant Site rent shall be adjusted again, per the Index. Such Orange Street Plant Site rent shall not be offset against or reduced to retire any guaranteed annual royalty credits. Lessee's right to hold over on the Orange Street Plant site shall continue only until the per-ton royalty amounts applicable to such Material excavated and sold by Lessee from the Orange Street Plant Site during the holdover period are equal to the sum total of guaranteed annual royalty credits for Lessee's payments of guaranteed annual royalty in excess of per-ton royalty, which accrued prior to the holdover period, but in no event longer than five (5) years from the time of the Lease's expiration or earlier termination. Any guaranteed annual royalty credits not retired within the applicable holdover period shall be lost, and forfeited without any further liability from District to Lessee.

4.6. Late Payments. Any payment due hereunder shall be made within thirty (30) days of the expiration of the month during which the excavations occurred, or the sales or other transfers occurred. Late payments shall incur a one and one-half percent per month late charge, which charge shall be added to, and considered to be additional, rent.

5.0 Permits.

5.1. Wash Plan Processing. As of the Commencement Date the parties are cooperating as part of the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan Task Force ("Task Force") to process and secure approval of the Wash Plan. Under the agreement forming the Task Force, each of the participants was assigned a certain percentage of allocation for the overall costs of the Wash Plan. Beginning on the Commencement Date, and continuing until the Wash Plan gets final approval, or either parties' participation in the Task Force agreement shall have been finally terminated, either as provided in paragraph 23 of that agreement, or upon dissolution of the Task Force pursuant to paragraph 22 of the Task Force agreement, Lessee shall advance to District one-half of District's share of the Wash Plan processing and consultant costs, under the allocation as defined in the Task Force agreement. All such advanced costs shall be credited against any guaranteed annual royalty otherwise owing from Lessee to District, and to the extent such advanced costs exceed the amount of guaranteed annual royalty, shall be credited against future years' guaranteed annual royalty, until the entire amount of such advanced costs has been retired.

5.2. Lessee's Obligation to Secure Permits. Notwithstanding the parties' mutual efforts to effectuate the Wash Plan, it is and shall be the Lessee's sole responsibility to secure any and all land entitlements, SMARA permits or approvals, conditional use permits, or any and all discretionary permits required for Lessee to operate and maintain its operations on the Premises for the excavation, processing, removal, and sale of Material therefrom, including

any reclamation plans, or requirements, from all applicable federal, state and local jurisdictions (collectively "permits" herein). In the event the Wash Plan fails to result in the grant of such permits, Lessee shall diligently and continuously take all other actions necessary to obtain all permits required to accomplish the Material excavation purposes set forth herein, and shall obtain such permits at Lessee's sole cost and expense. Lessee shall submit to District, no less than forty five (45) days prior to submission of any permit application, or forty five (45) days prior to accepting any conditions that may be imposed on any such permit, all information, studies, applications, and other information relative to the permit or the proposed terms and conditions proposed to be imposed on same, for District's prior, written approval. District's review shall be limited to such permit applications, and / or permit conditions that the District determines, in the exercise of its reasonable discretion, could impair its ability to perform its water storage, conservation or spreading activities, or District's other reserved rights and uses in the Premises under this Lease, and / or impact the Premises beyond the term of this Lease. District shall not unreasonably disapprove the permit nor the conditions thereto. Lessee shall not finalize the permit, nor take any action in furtherance of conducting activities pursuant to any permit, until the District has approved the permit and any conditions thereto. In the event District fails to approve or disapprove any permit submitted to it by Lessee, provided that all proposed conditions have been documented and forwarded to District, within forty five (45) days from District's receipt of same from Lessee, the permit and conditions thereto shall be deemed approved by the District.

5.3. District Cooperation With Permits. District agrees that within the bounds of its reasonable discretion as reserved in Section 5.2 above, it will reasonably cooperate with Lessee and Lessee's efforts to obtain applicable permits and land use entitlements to allow Lessee to fulfill the purposes of this Lease, including, but not limited to, execution of petitions, applications or authorizations for applications. No consent given under this Lease by the District shall affect or limit Lessee's obligations under this Lease, nor shall any approvals or consents given by the District, in its capacity as the owner of the Premises, be deemed to be approval as to compliance or conformance of any application or any permit with applicable governmental codes, laws, orders, rules, or regulations.

5.4. Habitat Mitigation Dedications. District and Lessee acknowledge that effectuation of the Wash Plan, or potentially other permits should the Wash Plan not come fruition, may require the dedication by District of various areas, within or without the Premises, for endangered or threatened species habitat preservation or management. Notwithstanding this, however, District and Lessee agree to cooperate reasonably in an effort to effectuate the Wash Plan, as consistently as possible with the identified mitigation areas from the Final Environmental Impact Report for the Wash Plan certified by the District in 2008. The parties acknowledge the need to meet and confer, between themselves and other members of the Task Force, regarding the proper identification of any such required mitigation areas, the degree of reserved water conservation activity the District may require as a result of any encumbrance of District property for such purposes, and the nature and cost of habitat management strategies appropriate for such areas, none of whose specifics is presently known at this time. District and Lessee agree to cooperate reasonably on such subjects, in an attempt to effectuate the purposes of the Wash Plan and the purposes of this Lease.

5.5. Lessee Indemnification re Permit Challenges. Except at to such permits as may be obtained by the parties pursuant to the Wash Plan, Lessee shall indemnify, defend and hold the District harmless from any action, judicial or otherwise, contesting the validity of any permit granted to Lessee by the District or any other permitting jurisdiction, and Lessee shall promptly pay any judgment or award against the District in any such action, and shall take all other measures necessary to diligently defend and resolve any challenge to the validity of any such permit.

5.6. Transfer of Permits. Upon the expiration or earlier termination of this Lease, all transferable permits applicable to the Premises shall immediately transfer to the District, and Lessee shall take all actions required to complete such transfer, and otherwise cooperate fully with the District in accomplishing everything required to complete such transfer.

6.0 Use and Operation of Premises.

6.1. Safeguards. Lessee shall, at all times during this Lease, maintain proper and adequate safeguards on the Premises to assure its orderly use, and to prevent intrusion from trespassers, playing children and vandals.

6.2. No Waste or Nuisance. Lessee shall not maintain, commit or permit the maintenance of or commission of any waste or any nuisance (as defined in California Civil Code section 3479) within the premises. Lessee shall not use or permit the use of the Premises for any unlawful purpose.

6.3. Hazardous Materials Lessee shall not cause, permit or suffer the release or dumping of any Hazardous Materials on the Premises at any time. As used in this Lease, the term "Hazardous Materials" shall mean:

(a) Hazardous wastes, hazardous materials, hazardous substances, hazardous constituents, toxic substances or related materials, whether solids, liquids or gases, including but not limited to, substances deemed as "hazardous wastes," "hazardous materials," "hazardous substances," "toxic substances," "pollutants," "contaminants," "radioactive materials," or other similar designations in, or otherwise subject to regulation under, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. §§ 9601 *et seq.*; the Toxic Substance Control Act ("TSCA"), 15 U.S.C. § 2601, *et seq.*; the Hazardous Materials Transportation Act, 49 U.S.C. § 1802; the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. § 9601, *et seq.*; the Clean Water Act ("CWA"), 33 U.S.C. § 1251, *et seq.*; the Safe Drinking Water Act, 42 U.S.C. § 300, *et seq.*; the Clean Air Act ("CAA"), 42 U.S.C. § 7401, *et seq.*; the Hazardous Waste Control Law, California Health & Safety Code § 2025, *et seq.* and Health & Safety Code § 33349; the Carpenter-Presley-Tanner Hazardous Substance Account Act, California Health & Safety Code Div. 20, Ch. 6.8; the Hazardous Materials Release Response Plans and Inventory Act, California Health & Safety Code Div. 20, Ch. 6.95; the Underground Storage of Hazardous Substances Act, California Health & Safety Code Div. 20, Ch. 6.7; the Porter-Cologne Act, California Water

Code § 13050, *et seq.*; and in any permits, licenses, approvals, plans, rules, regulations, or ordinances adopted, or other criteria and guidelines promulgated pursuant to, the preceding laws (collectively, the "Environmental Laws"); and

(b) Any other substances, constituents or wastes subject to any applicable federal, state or local law, regulation or ordinance, including any Environmental Law now in effect, including but not limited to petroleum, refined petroleum products, waste oil, waste aviation or motor vehicle fuel, asbestos, lead in water, paint or elsewhere, radon, polychlorinated biphenyls (PCBs), and ureaformaldehyde.

Lessee shall defend, indemnify, and hold District harmless for any release of any Hazardous Materials on the Premises caused by or arising from Lessee's possession of the Premises, or any of its activities undertaken thereunder except cause by the negligence or willful misconduct of District or any breach of District's warranties. Such indemnification shall include promptly paying any and all costs for site characterization, remediation, and any and all judgments for damages to persons or property, including any penalties, regulatory fines, or any other liabilities which may arise out of the Hazardous Materials released.

6.4. Maintenance and Perimeter Controls. Lessee shall, to the satisfaction of the District, keep and maintain the Premises and all improvements of any kind thereon in a state of good repair, clean, safe, and in compliance with all regulatory standards, laws, ordinances, statutes, and regulations applicable thereto, and any licenses or permits in connection therewith. Lessee shall maintain, and repair, fencing around the exterior boundaries of any active excavation on the Premises, so as to prevent purposeful or accidental intrusion by unauthorized persons or parties; provided, however, Lessee shall not be responsible or liable for maintenance, repair, or fencing around any portion of the Premises devoted to District's water spreading facilities on which no active excavation occurs. District shall be given keys, combinations, or other means of access through any such gates that may be connected or maintained pursuant to this requirement. Lessee and District shall each indemnify the other for any claims, liabilities, losses, or damages to persons or property caused by the indemnifying party's negligence or willful misconduct regarding such perimeter controls.

6.5. Mining Controls. In addition to complying with the conditions of any mining permit or other governmental approval relating to its mining activities, Lessee shall conduct its mining activities on the Premises subject to the following conditions and limitations:

(a) Timing. Lessee will notify the District in writing regarding which specific areas of the Lease Property will be mined, and at what times. Such notice shall be for the purpose of permitting the District to utilize portions of the Premises which are not actively being mined by Lessee, for water spreading activities or other activities which do not unreasonably inhibit or interfere with Lessee's proposed mining activity, which right is specifically granted to and reserved by the District. District and Lessee agree to reasonably coordinate their respective activities to minimize any interference with both groundwater recharge activities and mining activities.

(b) Mining Within Acceptable Distance to Groundwater.

(i) For all mining areas, Lessee shall establish, at its own cost, groundwater monitoring wells, at such times, and in such locations and numbers, as may be reasonably required by District to determine groundwater levels in the vicinity of active mining areas. Such wells shall be established in numbers and at locations sufficient to provide information regarding groundwater levels throughout the full extent of Lessee's active mining operations. District shall at all times have access to such wells, and may utilize such wells at any time to monitor or characterize groundwater levels; provided, however, District shall promptly replace or repair any damage caused by the District to the monitoring wells. Lessee does not warrant or confirm the accuracy of the monitoring wells and the District assumes all risk in utilizing the information obtained from the monitoring wells. District shall operate and maintain such wells, provided that Lessee shall not conduct any operations on the Premises which could damage or destroy such monitoring wells. Lessee shall promptly repair or replace any wells damaged by Lessee's mining or other activities, at Lessee's cost.

(ii) In the event groundwater levels in or around Lessee's mining operations rise to a point that is within twenty feet (20') of any active excavation, all such operations shall thereupon immediately be halted by Lessee, until such time as the groundwater table level drops to a point more than twenty feet (20') below the level of any active mining operations. Lessee shall be released from any payment obligations which accrue during any period in which Lessee is required to halt excavation activities under this subsection (ii). In addition, Lessee's Guaranteed Annual Royalty shall be reduced proportionally based on the number of days Lessee is required to cease excavation activities.

(iii) In the event of any unplanned cessation of mining activity by Lessee because of groundwater levels, District shall use its best efforts to redirect surface water recharge to areas which will not exacerbate high groundwater conditions in areas of active mining operations, and shall continue to do so until 1) the high groundwater conditions have abated, and mining activities can resume within the necessary twenty foot (20') separation between mining activities and groundwater levels in the affected area of active mining operations, or 2) it appears that District's operations are not affecting groundwater levels in the affected area of active mining operations, or 3) District has no reasonable alternative to spreading water in or around the areas of active mining operations.

(c) Depths. The Premises shall be mined in phased depths, as follows:

(i) In the initial phase, all of the Premises may be mined to a maximum depth of seventy-five feet (75').

(ii) In the second phase, all of the Premises may be mined to an additional depth of twenty-five feet (25'), provided:

(a) No more than fifteen percent (15%) of reserves are available to Lessee in the Premises above the Phase I depth limit of seventy-five feet (75') (excluding any reserves that are located at the Orange Street Plant Site which), lands are being utilized for processing, shipping, and storage of Materials; and

(b) Groundwater monitoring well information indicates such additional twenty-five foot depth can be achieved without posing an unreasonable risk of contamination, evaporation, or other risk, to groundwater.

(iii) The third phase will permit mining of the Lease Property to an additional depth of twenty feet (20'), provided:

(a) No more than fifteen percent (15%) of reserves are available to Lessee in the Premises above the Phase II depth limit of one hundred feet (100') (excluding any reserves that are located at the Orange Street Plant Site), which lands are being utilized for processing, shipping, and storage of Materials; and

(b) Groundwater monitoring wells indicate such additional depth can be achieved without posing an unreasonable risk of contamination, evaporation, or other risk, to groundwater.

(d) Side Slopes. For all portions of the Premises which are located in Section 12, mining shall be conducted in such manner that the ultimate side slope excavations and pit bottoms are never at any time steeper than 3:1 as measured from permitted setbacks. For those portions of the Premises located in Section 9, 10, and 11, side slopes shall be no steeper than 2:1 except existing slopes mined prior to the Effective Date left a finished slope steeper than 2:1, and the parties agree that Lessee has no obligation to correct those slopes. The ultimate side slopes, except at the Northwest corner of the Redlands Aggregate North parcel (south ½ of the northeast ¼ of Section 11, T1S, R3w, SBBM), and except where such side slopes were already in their final configuration as of the Effective Date of the July 10, 1997 Lease Amendment, shall be maintained in their natural condition, not reconstructed or recompacted.

6.6. Silt Deposits. District agrees that Lessee may deposit silt or impermeable fines within the Premises, only as follows:

(a) Alabama Pit No. 2 may be filled to its full capacity.

(b) The existing silt located along the north edge of the Johnson South Parcel and the existing silt pond on the Johnson North Parcel (consisting of the 80 acre parcel located in the South one-half of the Northwest one-quarter of

Section 11, T1S, R3W, SBBM), as shown and delineated in Exhibit "C" hereto, may remain, and effective on the Effective Date District waives any demand or claim for removal of silts deposited in such area by Lessee. District's waiver is of District's right, if any, to demand removal of such silts under its contractual rights as Lessor, and District makes no further representation or warranty regarding Lessee's ability to maintain any silts already deposited or whether such deposits comply with any applicable laws, statutes, regulations, or permit conditions of any kind. In addition, Lessee may use the Johnson North Parcel (but no portion of the Johnson South Parcel) for future deposit of silts or impermeable fines. Lessee shall not conduct any mining activity on the Premises north of the existing Johnson North parcel silt pond, except as may ultimately be allowed under the Wash Plan. The existing silt pond on the Johnson North Parcel (consisting of the 80 acre parcel located in the South one-half of the Northwest one-quarter of Section 11, T1S, R3W, SBBM), may remain. In addition, Lessee may use this area for future deposit of silts or impermeable fines. Lessee shall not conduct any mining activity on the Premises north of the existing Johnson North parcel silt pond.

(c) For both the Alabama Pit No. 2 and the Johnson North Parcel silt ponds, Lessee shall reclaim the areas by grading the top level of such silts or impermeable Materials according to the reasonable specifications of District, and by backfilling with non-silt, pervious earth Material of at least ten feet (10') of depth, and construct shallow water percolation basins and dikes thereon above the ten feet of pervious Material, all to the reasonable specifications of the District, so as to make the reclaimed land usable for spreading water in shallow surface ponds. Lessee shall not be responsible for payment of royalty for any Material excavated exclusively for such purposes.

(d) All pit bottoms shall be scarified to a depth of two feet (2'), as part of Lessee's reclamation activities, prior to quitting any mining site.

6.7. Lessee Production of Water. In addition to the groundwater monitoring wells provided for in Section 6.5 (2) (i), Lessee may sink such groundwater wells, or otherwise produce water from the Premises, as may be reasonably required in the quarrying, processing, and transportation of Material excavated and sold or removed from the Premises. Any wells established by Lessee on the Premises shall be considered improvements, and shall be subject to the requirements of Section 2.1 above. Lessee shall, in addition to any and all other payments due under this Lease, pay any groundwater charges associated with production of groundwater from the Premises, at then-applicable rates, and shall pay any and all other permitting or other charges required to establish and operate such wells. In connection with such wells, Lessee shall, upon reasonable request by the District, provide such information regarding groundwater levels, or water quality, produced from such wells, as Lessee otherwise does or is required to produce as a well operator, at no additional charge to District

7.0 District's Reservations.

7.1. District's Reservation for Water Conservation Activities. District reserves the right, from time to time and as it deems necessary in the exercise of its reasonable discretion, to utilize all or any portion of the Premises for its water recharge, conservation, spreading, and other operations. In connection with the exercise of this reserved right, the Conservation District shall make every effort to harmonize its water conservation activities with the then-current and anticipated immediate future excavation and other activities of Lessee, with the goal that the mining activity and the water conservation activity can harmoniously exist, without interruption to either. In the exercise of these reserved conservation rights, District shall do all of the following:

(a) Provide Lessee no less than forty-eight (48) hours' notice of its need to utilize portions of any active excavation areas, or areas of active haul road or other transport of excavated Material to and from areas of excavation and the plant site or stockpiling sites utilized in connection with the same.

(b) District shall not take all then-permitted portions of the Premises, which at that time Lessee is or could actively mine, out of production.

(c) Except in circumstances of sudden threatening precipitation, threat of immediate flooding from dam releases or other causes, or other immediate danger to persons or property, District shall meet and confer with Lessee to determine the appropriate areas for the exercise of the District's reserved water spreading rights as they impact active areas of excavation or other Lessee activities, to harmonize the need for areas of spreading with the needs of portions of the Premises for the activities permitted or authorized by this lease.

7.2. No Liability. Notwithstanding the procedural restrictions above, District shall have no liability to Lessee for any interruptions to excavations, or any other activities Lessee may undertake on the Lease, from the exercise of its reserved water spreading rights except as otherwise provided herein.

7.3. Inspection and Monitoring. District shall have the right, at all times during the pendency of this Lease, and at its own expense, to have an inspector remain on the Premises, including any plant site, scales, or sales areas, to observe, monitor, and inspect all aspects of Lessee's operations, and to confirm the validity and accuracy of Lessee's record keeping with respect to excavation and sale and removal of Material, and Lessee's compliance with all other aspects of the Lease. Such inspector shall be required to have all reasonable safety clearances or certifications required to access such areas of the Premises as District desires to monitor, as may be required under federal, state, or local statute, ordinance, or regulation. In addition, the inspector shall comply with Lessee's reasonable operating procedures and regulations, and shall undertake its monitoring activities in such a way as not to unduly disrupt, delay, or interfere with Lessee's operations.

7.4. Periodic Inspections. Whether or not District exercises its right to have an inspector on the Premises, District may, at any time during the pendency of this Lease, and upon no less than twenty four (24) hours' notice, come on to the Premises to assure compliance with permit conditions, conditions of the Lease, or the proper counting of tonnages excavated or sold.

7.5. Confidentiality of Information. All information received by the District pursuant to any inspector it maintains on the Premises, or any of its periodic inspections, shall be used solely for the purpose of assuring compliance with the terms of the Lease, and shall be considered confidential to Lessee, and kept confidential by District to the full extent permitted by the law. In connection with the receipt of such information, both District and Lessee specifically intend that the information is considered to be protected under Government Code section 6254(e), and shall not constitute a public record.

7.6. Audit. District may, no more frequently than once every two (2) years, and at its own expense require a full audit of Lessee's books, records, receipts, accounts, and any or all other information pertinent to the payment of plant site rent, royalties, or guaranteed annual royalty hereunder, including tonnages of Material excavated, sold, or otherwise transferred from the Premises the Redlands Aggregates Site, or both. Lessee shall reasonably and promptly cooperate with any and all requests made by District in connection with such audit, and any and all information received by the District in connection with such audit shall be considered confidential, as provided in the immediately preceding Section. To the extent the audit reveals any discrepancies between the amounts of plant site rent, royalty, or guaranteed annual royalties due, or any claimed offsets for Wash Plan processing costs or other items that may be agreed to between the parties as a legitimate offset to any amounts otherwise owing under the Lease, the party from whom either payment or refund is owing shall promptly pay the amount indicated by the audit. In the event of any disagreement as to the accuracy or results of the audit, the matter shall be submitted to binding arbitration, as provided for herein.

8.0 Binding Arbitration. In the event of any dispute arising under this Lease, including but not limited to disputes with respect to tonnages of Material excavated or sold or otherwise removed from the site, amounts of plant site rent, per-ton royalty, or guaranteed annual royalty, advanced costs for Wash Plan processing, or other amounts claimed due from one party to the other under this Lease, the determination of Fair Market Royalty, or any other controversy or dispute arising under this Lease, the matter shall be submitted to binding arbitration. To the extent not otherwise provided herein, any party wishing to submit any disagreement or alleged breach or noncompliance with any of the covenants or other provisions of this Lease shall first make demand upon the other party, in writing, specifying the issue, the amounts claimed due if known, and the steps it requires of the other party to resolve the dispute. Following such written notice, the parties shall, unless a different time period is specifically provided for otherwise herein, meet and confer in an attempt to resolve the dispute for a period of fourteen (14) days thereafter. In the event parties are unable to come to resolution, either party may demand that the matter may be submitted to binding arbitration. If such a demand is made, both parties shall, within five (5) business days of the receipt of the written demand to submit to arbitration, submit to the other a list of three (3) proposed arbitrators. Following exchange of such lists, the parties shall attempt to mutually select a single arbitrator to arbitrate the dispute. In the event the parties are unable to do so, each of the parties shall strike two arbitrators from the list of the other party, and the two remaining listed arbitrators shall thereupon decide upon a third arbitrator, who shall be someone other than the three originally listed by either party. Arbitrations regarding Fair Market Royalty shall proceed as provided for in Section 4.3 above. Arbitrations on all other subjects shall proceed according to such rules as the parties may reasonably agree to, and in the absence of their ability to agree, upon such rules as may be imposed by the single selected arbitrator. The decision of the arbitrator shall be final and binding, with each party waiving any

right to jury or other judicial determination of the dispute, except that the award may be corrected, or vacated, as provided by Code of Civil Procedure sections 1280 et seq. Notwithstanding Code of Civil Procedure section 1286.4 and 1286.8, the award may also be vacated or corrected if it is clearly contrary to law. Each party shall initially bear its own costs and fees in connection with the prosecution and hearing of the arbitration, and shall pay one-half (1/2) of the costs of the arbitrator. The advanced share of the arbitrator's costs and expenses, and attorneys' fees, expert witness fees, and the fees of any audit shall be considered as recoverable costs of the arbitration, and the reasonable costs thereof shall be recoverable by the prevailing party, in addition to any other relief that might be awarded.

9.0 Insurance. Lessee shall maintain, and keep in effect, all of the following policies of insurance at all times it occupies the Premises:

9.1. Workers' Compensation Insurance. By signature hereunder, Lessee certifies that Lessee is aware of the provisions of Section 3700 of the Labor Code, which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and Lessee will comply with such provisions before commencing the performance or the work of this Agreement.

9.2. Workers' Compensation and Employer's Liability Insurance. Lessee, its agents, and its sub-contractors shall cover or insure under the applicable laws relating to workers' compensation insurance, all of their employees employed directly by them or through subcontractors in carrying out the work contemplated under this Agreement, all in accordance with the Workers' Compensation and Insurance Act, Division IV of the Labor Code of the State of California and any Acts amendatory thereof. Lessee shall provide employer's liability insurance in the amount of, at least, $1,000,000 per accident for bodily injury and disease.

9.3. Liability Insurance. Lessee shall provide and maintain at all times during the performance of this Agreement, the following commercial general liability insurance:

(a) Coverage. Coverage shall be at least as broad as the following:

(1) Commercial General Liability. Commercial General Liability coverage (Occurrence Form CG 0001) in the amount of two million dollars ($2,000,000) per occurrence for bodily injury, personal injury, and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to the project/location (with the ISO CG 2501 or insurer's equivalent endorsement provided to the District) or the general aggregate limit shall be twice the required occurrence limit.

(2) Required Provisions. All policies specified hereunder shall state or be endorsed to state that coverage shall not be canceled by either party, except after thirty (30) days (10 days for nonpayment of premium) prior written notice by U.S. mail has been given to the District.

(3) Required Format. All of the liability insurance shall be provided on policy forms satisfactory to the District. All insurance

correspondence, notations, certificates, or other documents from the insurance carrier or agent/broker shall each separately reference the District project number.

(4) Deductibles and Self-Insured Retention. Any deductible or self-insurance retention must be declared to and approved by the District. At the option of the District, the insurer shall reduce or eliminate such deductibles or self-insured retention.

(5) Acceptability of Insurers. Insurance is to be placed with insurers having a current A.M. Best's rating of no less than A-:VII or equivalent or as otherwise approved by the District.

(6) Evidences and Cancellation of Insurance. Prior to execution of this Agreement, Lessee shall file with the District evidence of insurance satisfactory to the District. The insurer will give by U.S. mail written notice to the District at least thirty (30) days prior to the effective date of any cancellation, except for nonpayment of premium for which ten (10) days prior written notice will be given. Lessee shall, upon demand of the District, deliver to the District all such policy or policies of insurance and the receipts for payment of premiums thereon.

9.4. Subcontractors. In the event that Lessee employs other contractors as part of the services covered by this Agreement, it shall be the Lessee's responsibility to confirm that each subcontractor meets the minimum insurance requirements specified above.

10.0 Default or Termination.

10.1. Default by Lessee. Each and every covenant and agreement contained in this Lease is declared to be a condition to the Lease, and to the rights hereby granted to Lessee. Lessee shall be considered to have materially breached this Lease, giving the District the remedies set forth in Section 10.2 below, in the event that any one or more of the following occur:

(a) Lessee fails or refused to pay to the District any royalties or other rentals due hereunder when due, and such royalty or rent remains unpaid for thirty (30) days after written notice by the District to Lessee; or

(b) Lessee defaults in the performance of or breaches any covenant, condition, or provision contained in this requirement other than set forth in Section 10.1 (a) hereinabove, and such default or breach is not cured within thirty (30) days after written notice thereof is served by the District on Lessee, or if such cure is physically impossible to cure within thirty (30) days, Lessee has begun and diligently prosecuted such cure.

(c) Lessee becomes insolvent. For the purposes of this Lease, Lessee shall be conclusively presumed to have become insolvent if (i) a receiver is appointed to take possession of all or substantially all of Lessee's property

because of insolvency; or (ii) Lessee makes a general assignment for the benefit of creditors; or (iii) Lessee allows any judgment against Lessee to remain unsatisfied or unbonded for a period of thirty (30) days or longer; or (iv) an attachment or execution is levied upon or against any or all of Lessee's right, title, or interests in or under this Lease, and the same shall not have been released within thirty (30) days from the date thereof; or (v) proceedings or receivership in bankruptcy have been instituted against Lessee; or (vi) Lessee is adjudicated bankrupt.

(d) Any disagreement between the parties as to whether a default has occurred shall be decided by binding arbitration, as provided for herein.

10.2. Remedies on Lessee's Default. Should Lessee breach this Lease, the District may, in addition to any other remedy given the District by law or in equity:

(a) Continue this Lease in effect by not terminating Lessee's right to possession of the Premises, in which event District shall be entitled to enforce all of the District's rights and remedies under this Lease, including the right to recover the royalties and other rental payments specified herein, as such royalties and payments become due under this Lease; or

(b) Terminate this Lease and Lessee's right to possession of the Premises;

(c) In the event Lessee becomes insolvent, the District may, by giving thirty (30) days' written notice to Lessee or to the person appointed to manage Lessee's affairs at the address for such person appearing in the official records of the court that appointed such person, terminate this Lease and forfeit Lessee's rights under the Premises and in any Improvements or facilities on or appurtenant to the Premises.

The remedies herein shall not be exclusive, but shall be cumulative and in addition to any and all of the remedies now or hereafter allowed by law or otherwise authorized in this Lease, and the exercise of one or more of said rights, powers, elections, or remedies shall not impair the District's right to exercise any other right, power, election, or remedy.

10.3. Lessee's Right of Termination. Lessee may terminate this Lease, with or without cause, at any time after the first anniversary of the Commencement Date, by providing District no less than one hundred and eighty (180) days' written notice. Upon giving such notice, and until the one hundred eighty day period passes, the Lease shall remain in effect, and Lessee shall fulfill all obligations of Lessee hereunder which accrues during the one hundred eighty (180) days, including the payment of Orange Street Plant Site rent, guaranteed annual royalty and any per-ton royalty amounts.

10.4. Surrender of Possession. At the expiration or termination of this Lease, for whatever reason, Lessee shall execute, acknowledge, and deliver to the District a Quitclaim Deed conveying all right, title, and interest of the Lessee to the Premises, both land and improvements. Thereafter, Lessee shall promptly, but in any event no later than six (6) months

following the expiration or earlier termination of the Lease, remove all Improvements (unless the requirements for such removal has been waived in writing by District), portable buildings, equipment, and personal property placed on the Premises by Lessee, and clear the Premises of all debris, and otherwise surrender to the District the Premises in good order and clean condition.

10.5. Quiet Enjoyment. District represents, covenants and warrants that Lessee, upon paying the rent and performing the covenants herein provided, shall peacefully and quietly have, hold and enjoy the Premises, subject to District's reserved rights hereunder.

11.0 Encumbrance, Assignment, and Subletting.

11.1. Hypothecation.

(a) Lessee shall have the right at any time, from time to time, and subject to prior written approval of the District (except to the extent any Improvements are subject to an encumbrance prior to the execution of this Lease), to subject the leasehold estate and any or all Improvements placed or to be placed on the Premises to one or more deeds of trust or other security instruments (collectively "Leasehold Deed of Trust" herein) as security for a loan or loans or other obligation of Lessee, provided that:

(i) The Leasehold Deed of Trust and all rights acquired under it shall be subject and subordinate to each and all of the covenants, conditions, and restrictions stated in this Lease, and to all rights and interest of the District except as otherwise provided herein, and

(ii) Lessee shall give District prior notice of any such Leasehold Deed of Trust, and shall accompany the notice with a true copy of the note and deed of trust.

11.2. Assignment and Sublease; Transfer Restrictions. Lessee may assign or sublease all or a portion of its interest hereunder to any other entity, but only with the prior written permission of the District. For the purposes of this Lease, an "assignment" shall include a transfer to any person or group of persons acting in concert, of more than twenty-five percent (25%) of the present ownership and/or control of Lessee in the aggregate, taking all transfers into account on a cumulative basis, except transfers of such ownership or control interest between members of the same immediate family, or transfer to a trust, testamentary or otherwise, in which the beneficiaries are limited to members of the transferor's immediate family. In the event Lessee or its successor is a corporation or trust, such transfer shall refer to the transfer of the issued and outstanding capital stock of Lessee, or of the beneficial interests of such trust; in the event that Lessee or its successor is a limited or general partnership, such transfer shall refer to the transfer of more than twenty-five percent (25%) of the limited or general partnership interest; in the event that Lessee or its successor is a joint venture, such transfer shall refer to the transfer of more than twenty-five percent (25%) of the ownership and/or successor control of any such joint venture partner, taking all transfers into account on a cumulative basis.

11.3. Licenses. Lessee shall have the right to grant licenses for ingress and egress to the Premises in connection with any assignment or sublease, provided such licenses are

made specifically subject to the covenants contained in this Lease, and do not extend beyond the term of this Lease. Upon any assignment, the assigning Lessee shall have no further obligation or liability under this Lease with respect to the portion assigned, except for such obligations that arose from the period of such assigning Lessee's occupancy of the Premises, and the new Lessee shall agree in writing to be bound by all terms and conditions hereof.

12.0 Transfer Premises. The parties agree to cooperate reasonably in defining the Transfer Premises, either before or upon the final approval of the Wash Plan, if the Wash Plan becomes effectuated. The Transfer of Premises shall be identified by way of appropriate legal description and plat maps, and shall be incorporated as Premises to which this Lease applies by way of a written amendment to this Lease. The Transfer of Premises shall not be replaced for any portion of the Premises without the mutual agreement of District and Lessee.

13.0 Condemnation. If during the term of this Lease, all or any portion of the Premises is acquired for public use by the use of eminent domain, or transfer under threat of eminent domain, the following shall apply:

(a) District shall be entitled to all compensation awarded for the taking of the Premises, including any leasehold bonus value, except that Lessee shall be entitled to any portion of the award representing the value of its leasehold improvements (less any reversionary value allocable to District upon the scheduled end of the lease term), moveable equipment, inventory, moving expenses or relocation benefits, any award for loss of Lessee's business goodwill, and any separately-assessed attorneys fees or costs which are awarded solely to Lessee.

(b) If the entire Premises are taken pursuant to any condemnation proceeding, or acquisition under threat of condemnation, the Lease shall terminate in its entirety, effective on the date the acquiring entity takes actual possession of the Premises. If only a part of the Premises is taken pursuant to any condemnation proceeding, or acquisition under threat of condemnation, and the part taken is so essential that the remainder Premises subject to the Lease is no longer suitable for the purposes of the Lease, Lessee shall have the option to terminate this Lease. Such option shall be exercised in writing, no later than: (1) thirty (30) days after the filing of any complaint in eminent domain and service of same upon Lessee; or (2) within thirty (30) days of Lessee being notified, by District or any other party, of the acquiring entity's intent to acquire by eminent domain, accompanied by a legal description or other detailed indication of the specific area and property interests the acquiring entity proposes to take, whichever of the two occurs earlier. Any dispute between the District and Lessee as to whether a part taking taken is so essential that the remainder Premises subject to the Lease is no longer suitable for the purposes of the Lease shall be submitted to binding arbitration as provided herein if no condemnation action is then pending, and if such an action is pending, by the court hearing and determining such action.

(c) If only a part of the Premises is taken pursuant to a condemnation proceeding or acquisition under threat of condemnation, and there is either (1) no such material impairment of Lessee's use of the remaining portion of the Premises, or (2) Lessee otherwise elects not to terminate this Lease as provided in this Section, then the Lease shall terminate only as to the portion taken, effective on the date the acquiring entity takes actual possession of the portion taken, and the Lease shall continue in full force and effect as to the remaining portion of the Premises.

(d) If any portion of the plant site is taken as part of a partial taking, the plant site rent shall be reduced, in a percentage equal to the percentage the land taken area from the plant site bears to the total area of the plant site before the taking, such reduction to be effective on the date the Lease terminates as to the portion of the plant site taken. There shall be no reduction to the guaranteed annual royalty or the per-tonnage royalty, however.

14.0 Assignment and Transfer. The qualifications and identity of Lessee are of particular concern to District. It is because of those qualifications and identity that District has entered into this Agreement with Lessee. Accordingly, except as expressly set forth herein, Lessee shall not, whether voluntarily, involuntarily or by operation of law, assign, transfer or convey all or any part of this Agreement or any rights hereunder or in this Lease or the Premises without District's prior written approval, which shall not be unreasonably withheld, delayed or conditioned on items not related to the prospective assignee's financial ability to perform Lessee's requirements and obligations under this Lease, or the prospective assignee's ability to comply with the terms, conditions, or requirements of any applicable permit, entitlement, development condition, or provision of law governing the mining activities to be carried out on the premises under this Lease. Notwithstanding the foregoing, Lessee may assign its interest in this Lease to (a) an entity whose majority interest is owned or controlled by Lessee; or (b) a limited partnership or limited liability company whose general partner or managing member is Lessee. The term "control," as used in the immediately preceding sentence, means, with respect to a person that is a corporation, the right to exercise, directly or indirectly, at least 50% of the voting rights attributable to the shares of the controlled corporation, and, with respect to a person that is not a corporation, the possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of the controlled person

If District approves the assignment, the approval shall be subject to the satisfaction of the following conditions ("**Transfer Conditions**"):

(a) All of the obligations of this Lease shall have been assumed by the transferee pursuant to a written assignment and assumption agreement(s) in a form reasonably approved by District's legal counsel.

(b) The organizational documents of the transferee and a good standing certificate of the transferee shall have been submitted to District.

(c) There shall be no default of Lessee of this Agreement and no event has occurred that would constitute a default with the giving of notice or the passage of time.

15.0 Miscellaneous Provisions.

15.1. Notices. As expressly provided to the contrary herein, any notice, consent, report, demand document, or other such item to be given, delivered, furnished, or received hereunder, shall be deemed given, delivered, furnished, or received when given in writing and personally delivered to an authorized agent of the applicable party, or upon delivery by United States Postal Service, first class registered or certified mail, postage prepaid, return receipt requested, or by national "overnight courier," such as Federal Express, at the time of delivery shown upon receipt, and in any case, delivered to the address, addresses, and persons as each party may from time to time, by written notice designate to the other, and who initially are:

If to District:	San Bernardino Valley Water Conservation District 1630 West Redlands Boulevard Suite A Redlands, California 92373 Attn: General Manager
With a Copy to:	Rutan & Tucker 611 Anton Boulevard Suite 1400 Costa Mesa, CA 92626 Attn: David B. Cosgrove
If to Lessee:	Cemex Construction Materials Pacific, LLC 5180 Golden Foothills Parkway Suite 200 El Dorado Hills, CA Attn: Tom Powell
With a Copy to:	Cemex 920 Memorial City Way, Suite 100 Houston, TX 77024 Attn: General Counsel

15.2. Interpretation. The terms of this Lease shall be construed in accordance with the meaning of the language used, and shall not be construed for or against either party by reason of authorship. This lease contains the full agreement of the parties with respect to the subject matter contained herein, and supersedes all prior leases, negotiations, agreements, and/or representations, whether oral or written. Specifically, this Lease supersedes the "Lease Agreement" dated September 10, 1979, between the District and C. L. Pharris Sand and Gravel, Inc., the "Lease Amendment" dated July 10, 1997 between the District and C. L. Pharris Sand

and Gravel, Inc., dba Sunwest Materials, and any other prior lease agreements between the parties with respect to any portion of the Premises. All such prior lease agreements are superseded and replaced by this Lease Agreement, including any options, rights of first refusal, or other rights that may arise thereunder, all of which are of no force or effect. This Lease constitutes the entire lease agreement between District and Lessee.

15.3. Amendment. This Lease may be amended at any time by mutual agreement of the parties, by an instrument in writing, signed by both parties, and referencing that it is an amendment to this Lease.

15.4. Corporate Authority. The persons executing this Lease on behalf of the parties hereto warrant that (i) the party on whose behalf the signature appears is duly organized and existing; (ii) such party is authorized to execute and deliver this Lease on behalf of such party; (iii) by so executing this Lease, such party is bound to the provisions of this Lease; and (iv) by entering into this Lease, such party does not violate any provision to any other agreement to which said party is bound. .

15.5. Binding on Successors. Subject to the transfer restrictions stated elsewhere in this Lease, this Lease shall be binding upon each party's respective successors and assigns.

15.6. Time is of the Essence. Time is of the essence in this Lease. Failure to comply with any requirement, including but not limited to any time requirement of this Lease shall constitute a material breach of the Lease.

15.7. Severability. The invalidity or illegality of any provision of this Lease shall not affect the remainder of the Lease. The parties hereby declare that it is their intent that, in the event one or more portions of the Lease is declared invalid or unenforceable, they intend that the remainder of the Lease continue to bind both parties, unless the severed remainder is so essential to the terms of this Lease that additional performance of the Lease is impossible or so uncertain as to render meaningful performance impossible or unrealistic.

15.8. Force Majeure. The time limits provided herein for performance of any actions required hereunder shall be extended during any time, but only during such time, as a party is unable to perform obligations to war, insurrection, strikes, lock-outs, riots, floods, earthquakes, fires, casualties, acts of the public enemy, epidemics, quarantine restrictions, freight embargoes, inaccessibility of transportation or critical infrastructure, governmental restrictions or priority litigation, acts of God, or other similar causes beyond the control of, and without the fault of, the party charged to perform. The party to perform shall continue to exercise reasonable diligence to minimize the period of delay during any period of force majeure. An extension of time for any such cause shall be limited to the period of the delay, and shall commence to run from the time of the commencement of the force majeure, provided notice by the party be to perform claiming such extension is sent to the other party within ten (10) days of the commencement of the cause.

15.9. Attorneys' Fees. In the event of any suit to enforce any provision of this Lease, or to prevent or to correct any breach of this agreement, the prevailing party in such

action or proceeding, in addition to any other relief which may be granted, legal or equitable, shall be entitled to reasonable attorneys' fees. As used herein, "attorneys' fees" shall include costs for legal services, and all other reasonable costs for investigating the action, including the taking of depositions and discovery, and any other recoverable costs. All such fees shall be deemed accrued on the commencement of such action, and shall be enforceable whether or not such action is prosecuted to final judgment. The court in any such action shall be requested to name a prevailing party.

15.10. Counterparts. This Lease may be executed in two or more counterparts, each of which shall be an original, but all of which shall constitute one and the same instrument.

Dated: _____

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT

By: _____
Clare Henry Day, President

APPROVED AS TO FORM:

RUTAN & TUCKER, LLP

By: David B. Cosgrove
General Counsel

Dated: _____

CEMEX CONSTRUCTION MATERIALS PACIFIC, LLC

By: _____
V.P.

State of ~~California~~ Arizona

County of ~~Orange~~ Maricopa

Subscribed and sworn to (or affirmed) before me on this 28th day of October, 2011, by OSCAR FRIAS, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

VICKI L. MAJORS
Notary Public - State of Arizona
MARICOPA COUNTY
My Comm. Expires Aug. 30, 2013

Seal: _____

Signature Vicki L. Majors

State of California

County of ~~Orange~~ San Bernardino

Subscribed and sworn to (or affirmed) before me on this 21 day of October, 2011, by Claire Mary Day, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal: GUAY P WILSON

Signature G P Wilson

GUAY P. WILSON
COMM. # 1847449
NOTARY PUBLIC - CALIFORNIA
SAN BERNARDINO COUNTY
My Comm. Expires May 3, 2013

State of California

County of ~~Orange~~ San Bernardino

Subscribed and sworn to (or affirmed) before me on this 31 day of October, 2011, by Claire Terry Gray, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal: GUAY P WILSON

Signature G P Wilson

GUAY P. WILSON
COMM. # 1847449
NOTARY PUBLIC CALIFORNIA
SAN BERNARDINO COUNTY
My Comm. Expires May 3, 2013

State of California

County of ~~Orange~~ San Bernardino

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 2011, by _____, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Seal: _____

Signature _____

Exhibit "A"

Legal Descriptions of: "PREMISES" Properties

	Approx. Acres
Parcel I-1: (Portion of WCD Parcel 11-2) North one-half of the North one-half of Section 11, T. 1 S. R. 3 W., SBB&M, excepting thereform the North 40 feet.	155
Parcel I-2: (Portion of WCD Parcel 11-1) South one-half of the Southeast Quarter of Section 11, T. 1 S., R. 3 W., SBB&M	80
Parcel I-3: (WCD Parcels 12-2 and 12-3) North one-half of Section 12, T. 1 S., R. 3 W., SBB&M, except that portion lying northeasterly of the southwesterly right-of-way of the AT&SFe Railroad.	143

Parcel I-3a: (WCD Parcel 12-3)
Three rights-of-way 80 feet wide across the AT&SFe right-of-way in the Southwest Quarter of the Northeast Quarter of said Section 12, as described in the deed from Charles Elliott to the San Bernardino & Eastern Railway Company

Recorded December 15, 1891
Book 144, page 16 of Records of
San Bernardino County, California.

Parcel II-A: (Portion of WCD Parcel 11-2) East one-half of the South one-half of the North one-half of Section 11, T. 1 S., R. 3 W., SBB&M	80
Parcel II-B: (WCD Parcel 11-3) North one-half of the Northwest Quarter of the Southwest Quarter of Section 11, T. 1 S., R. 3 S., SBB&M	20
Parcel II-C: (WCD Parcel 11-4) Northeast Quarter of the Southwest Quarter of Section 11, T. 1 S., R. 3 W., SBB&M	40

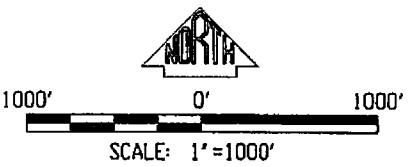
Saving and excepting from the above parcels the main canal of lessor which crosses the property in an east-west direction and reserving unto lessor an easement 40 feet wide across the property adjacent to the Southerly boundary.

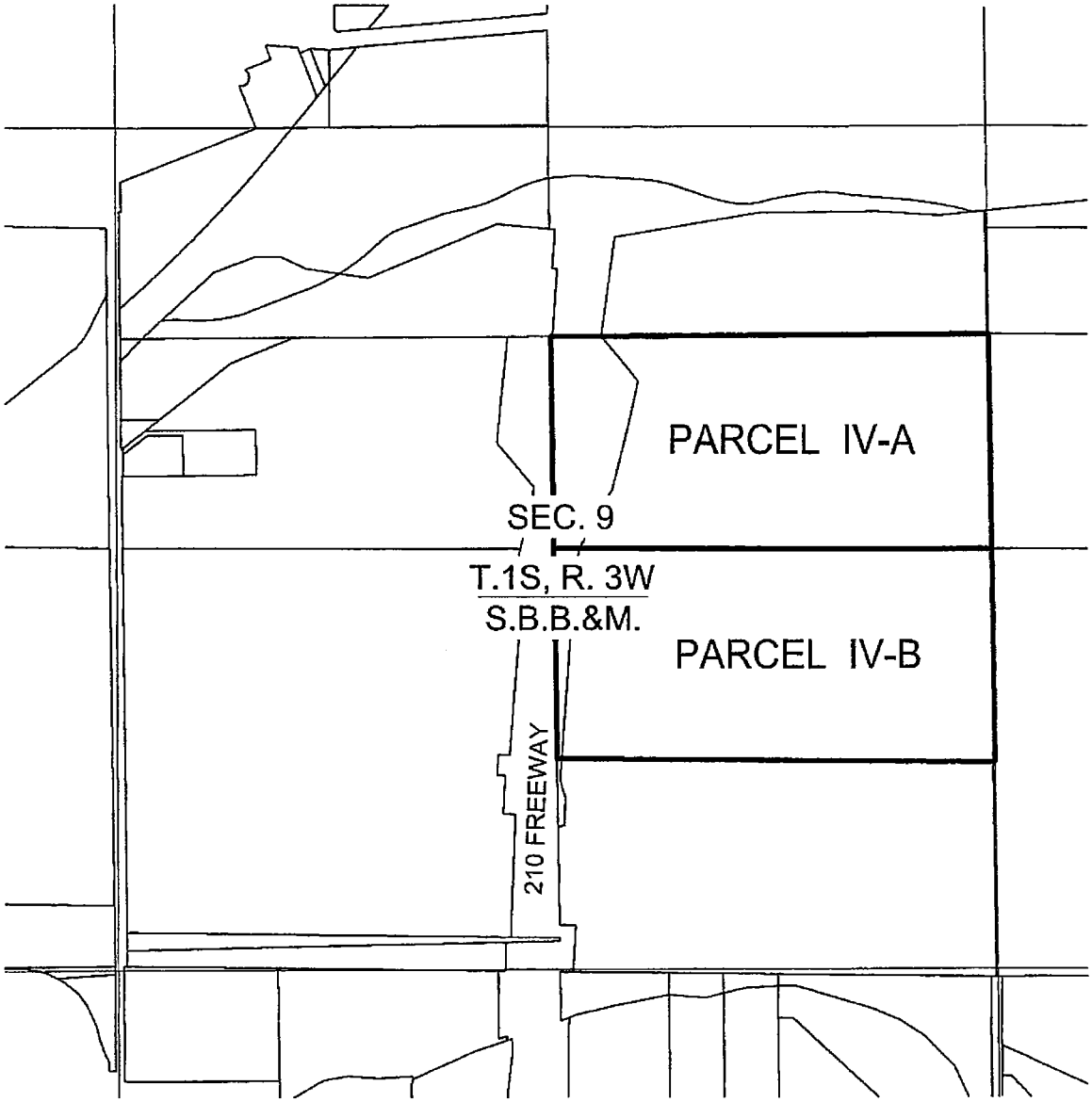
Parcel II-D: (Portion of WCD Parcel 10-2)
A non-exclusive easement across the North 60 feet of the North one-half of the Southeast Quarter of Section 10, T. 1 S., R. 3 W., SBB&M.

	Approx. Acres
Parcel II-E: (Portion of WCD Parcel 11-2) West one-half of the South one-half of the North one-half of Section 11, T. 1 S., R. 3 W., SBB&M	80
Parcel III-A: (Portion of WCD Parcel 11-1) The North one-half of the Southeast Quarter of Section 11, T. 1 S., R. 3 W., SBB&M	80
Parcel III-B: (WCD Parcel 10-2) The North one-half of the Southeast Quarter of Section 10, T. 1 S., R. 3 W., SBB&M, except the westerly 130+ feet thereof.	75
Parcel IV-A: (WCD Parcel 9-2) South one-half of the Northeast Quarter of Section 9, T. 1 S., R. 3 W., SBB&M.	80
Parcel IV-B: (Portion of WCD Parcel 9-1) North one-half of the Southeast Quarter of Section 9, T. 1 S., R. 3 W., SBB&M.	80

EXHIBIT "B"

NOV. 15, 2011





SEE SHEET 2 OF 4

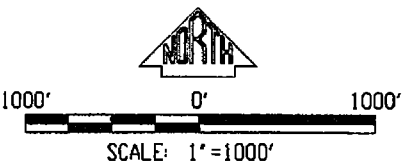
JOSEPH E. BONADIMAN & ASSOCIATES INC.
consulting engineers land surveyors

234 N. Arrowhead Ave., San Bernardino, CA. 92408
Phone: (909)885-3806 Fax: (909)381-1721

EXHIBIT "B"

(CONTINUED)

NOV. 15, 2011



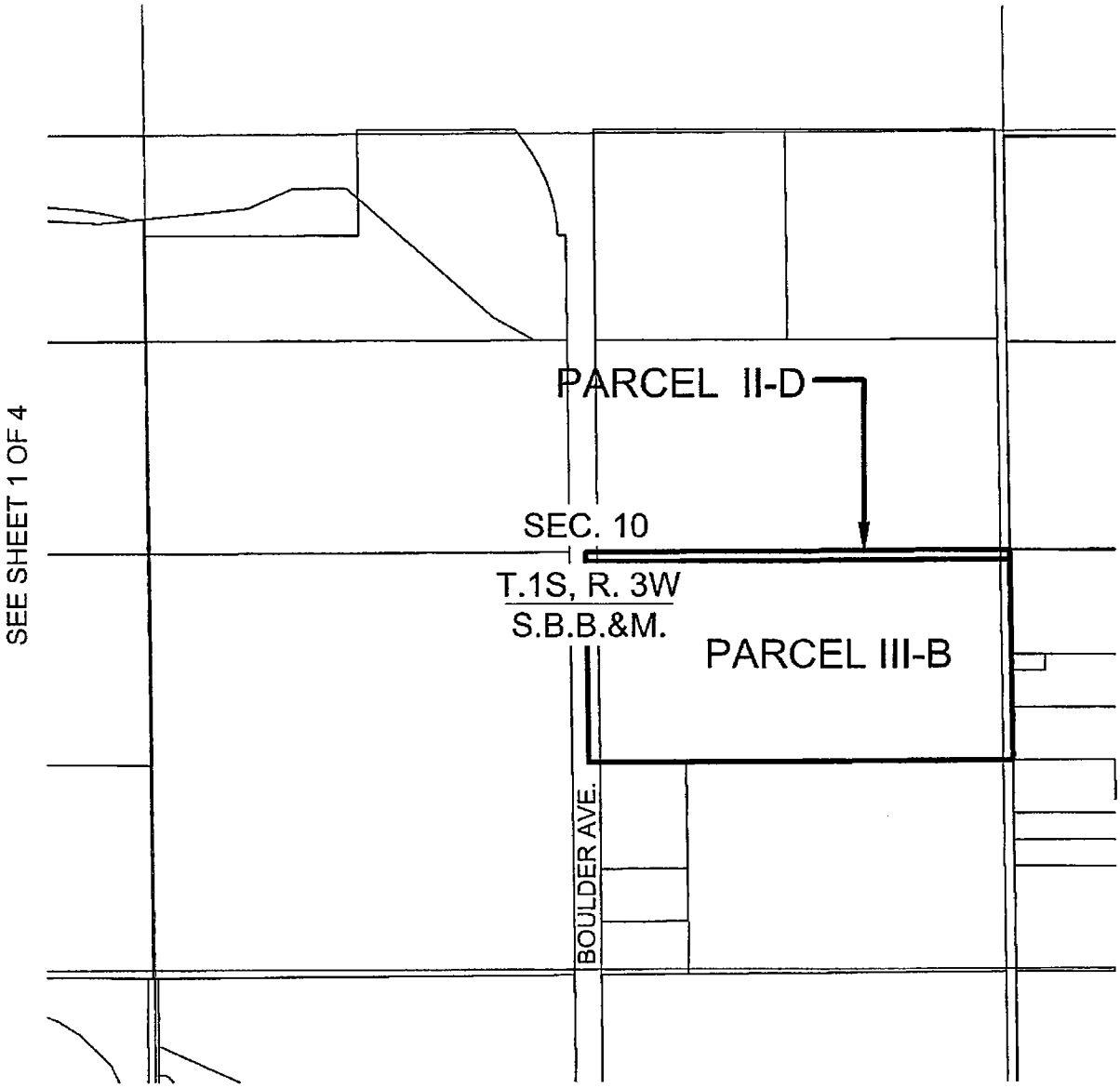


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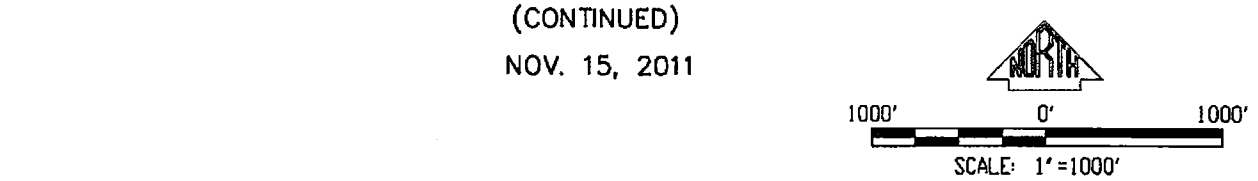
EXHIBIT "B"

(CONTINUED)

NOV. 15, 2011



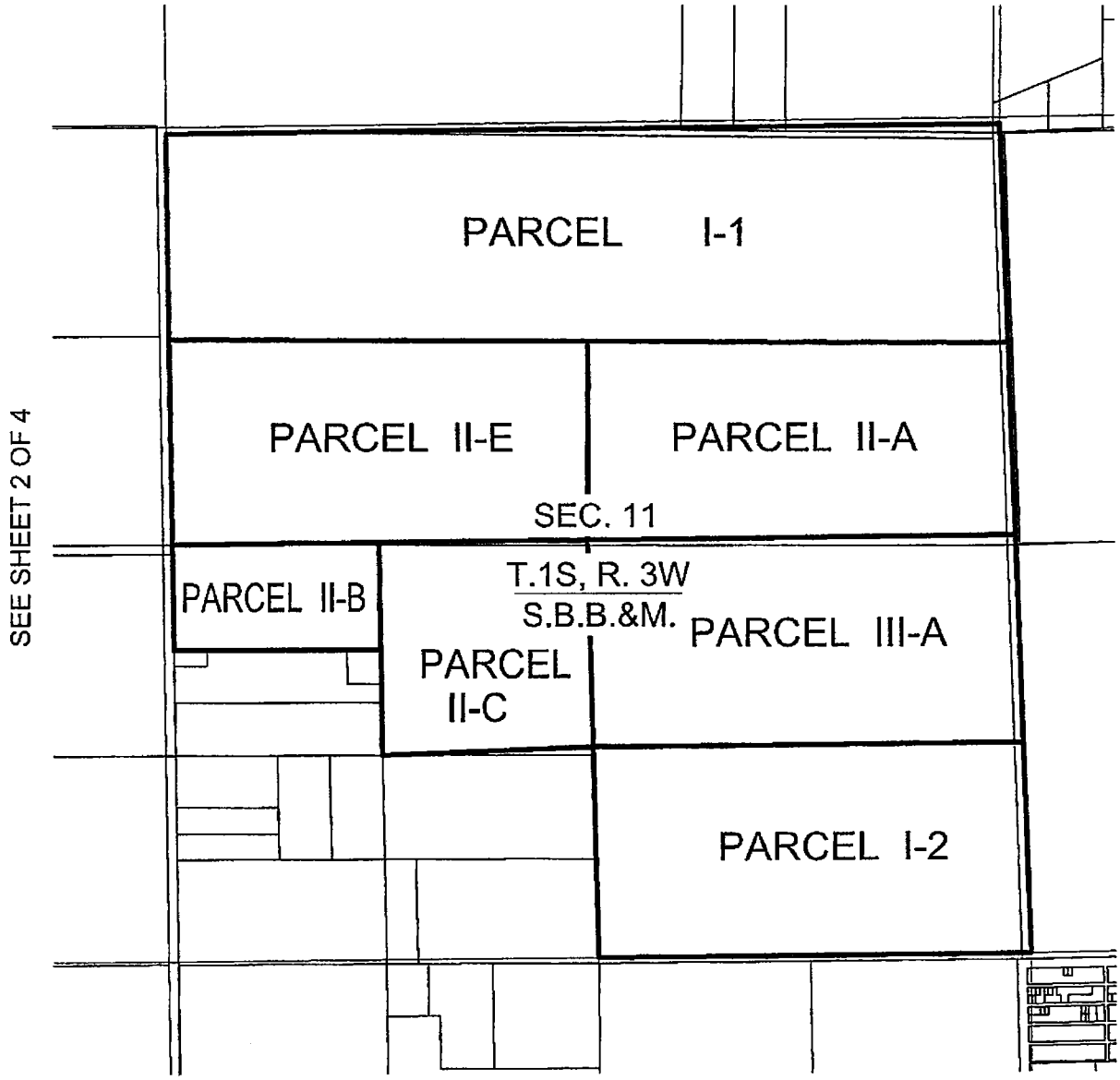


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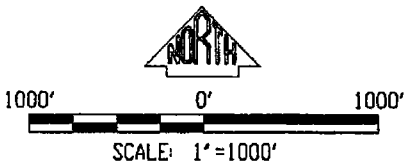
EXHIBIT "B"
(CONTINUED)

NOV. 15, 2011



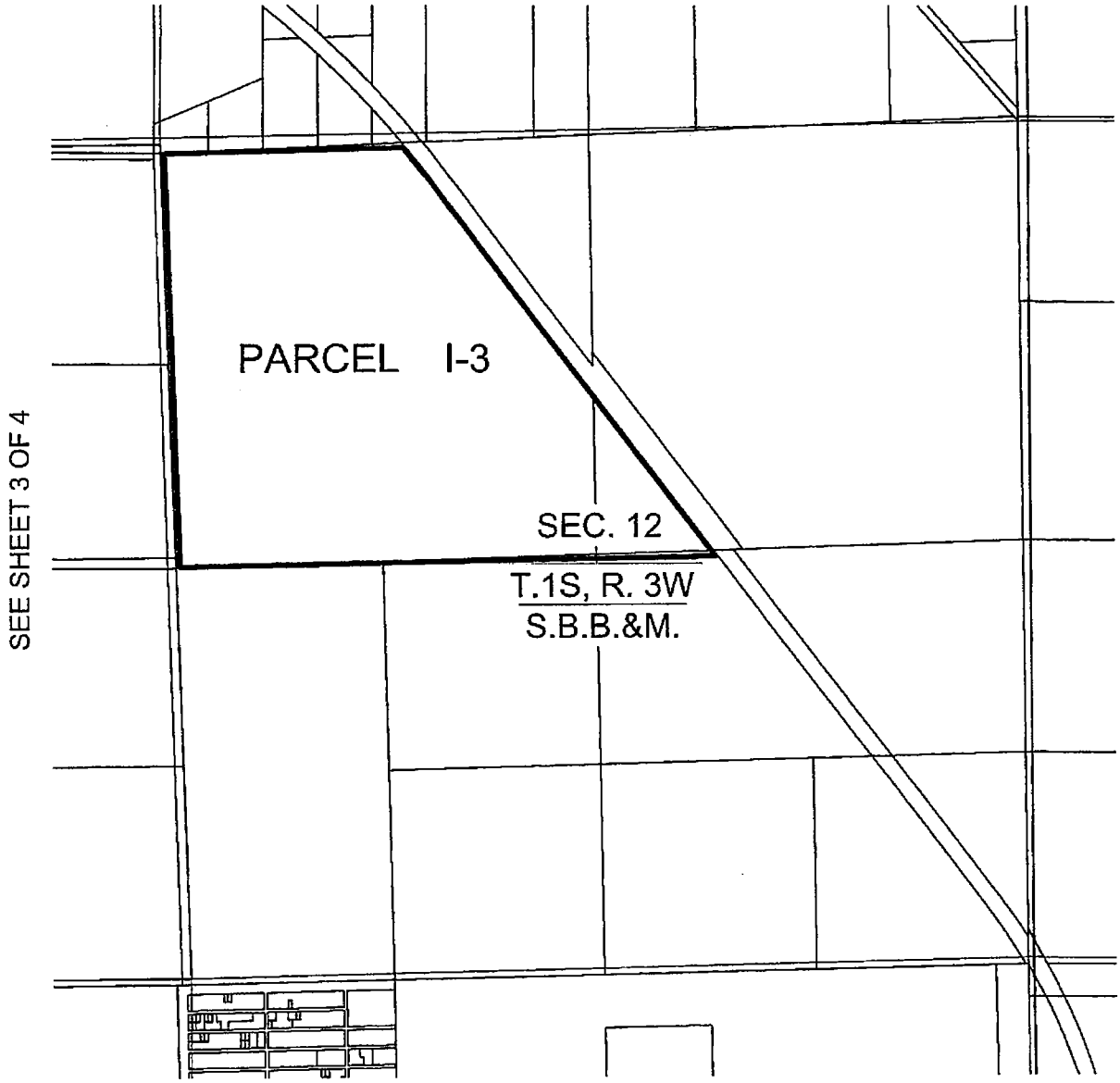


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EXHIBIT "C"

"SILT DEPOSIT AREA"

NOV. 15, 2011

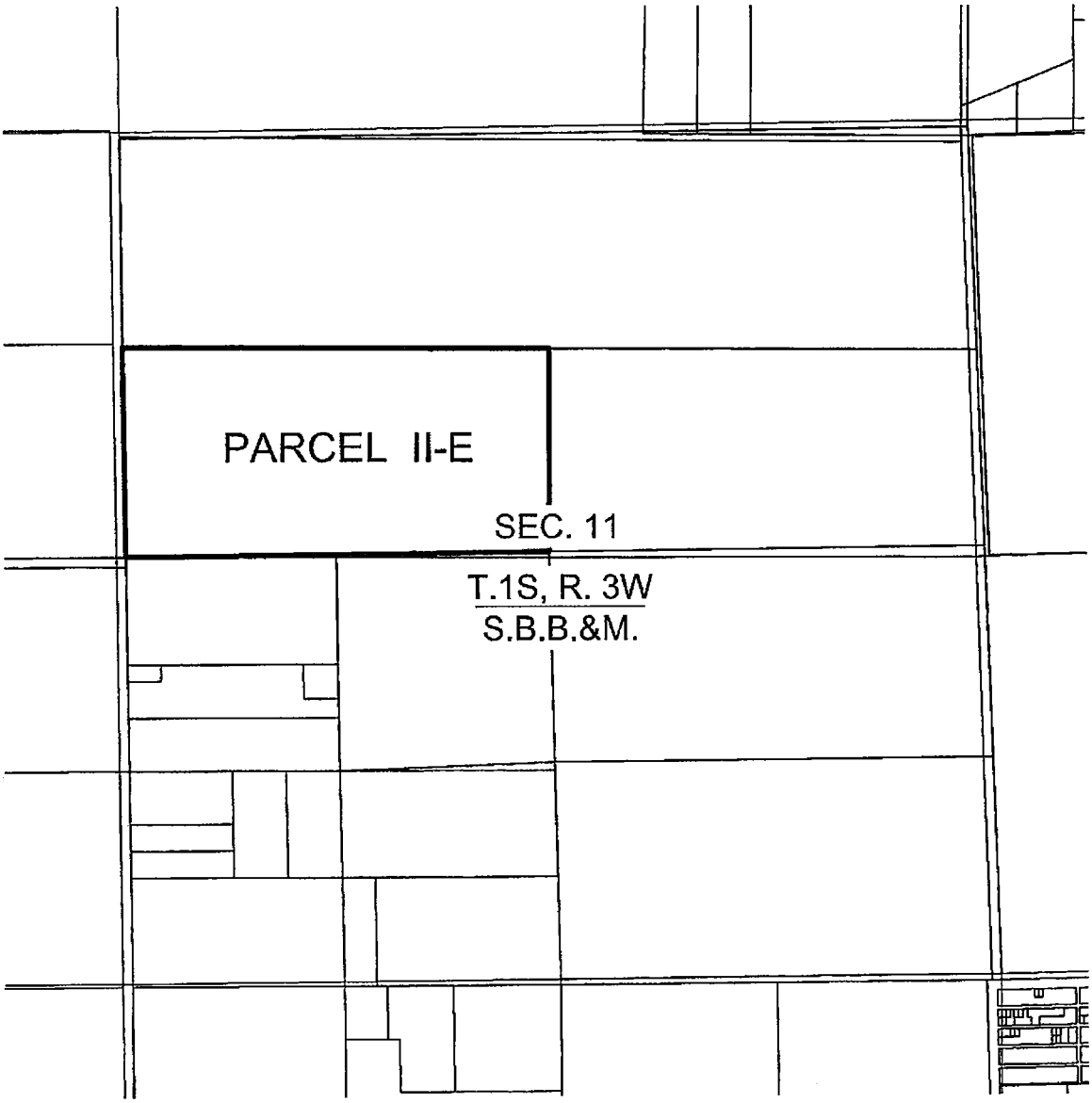

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EXHIBIT "D"

"ORANGE STREET PLANT SITE"

NOV. 15, 2011

NORTH

1000' 0' 1000'

SCALE: 1"=1000'

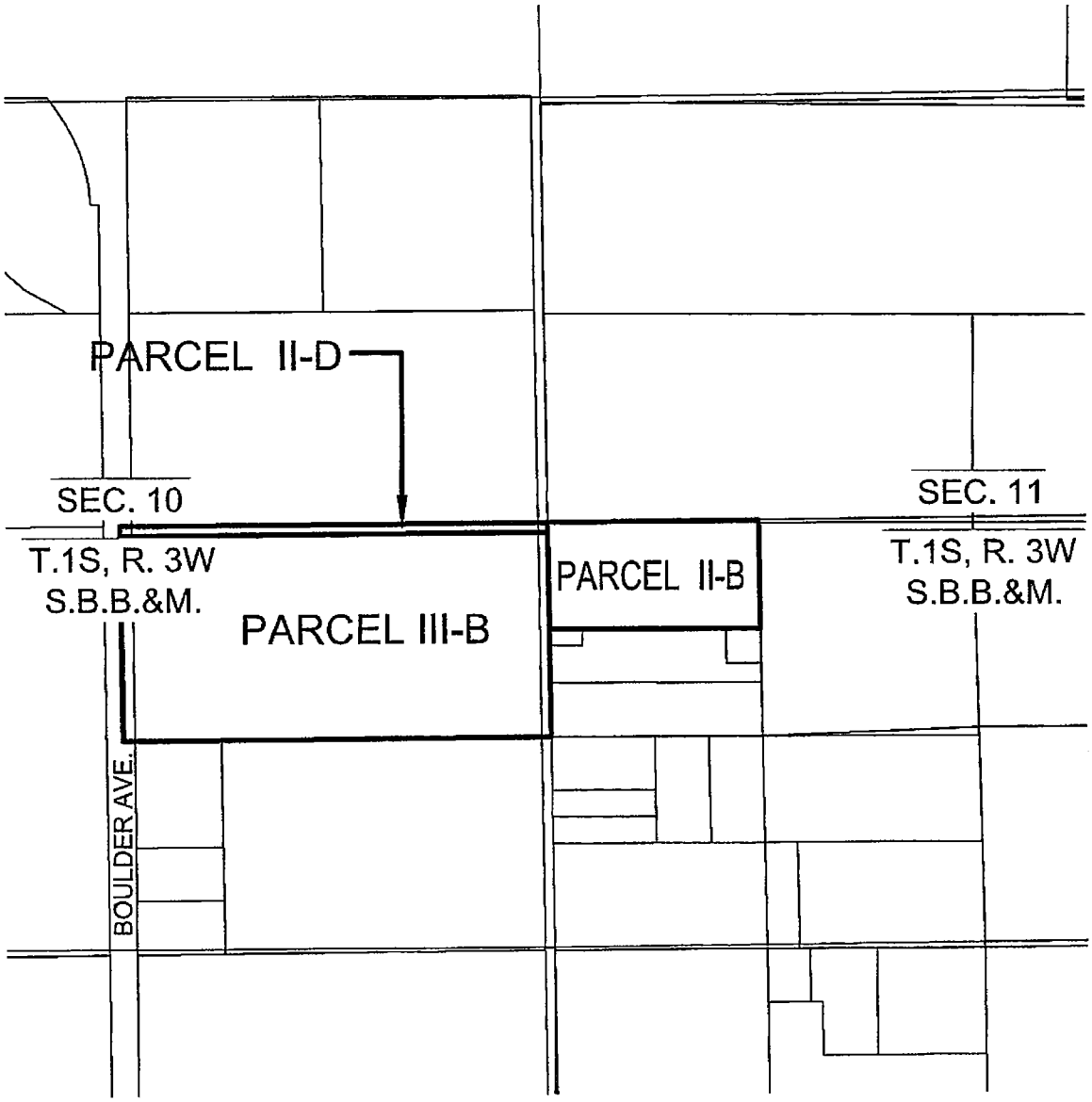

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EXHIBIT "E"

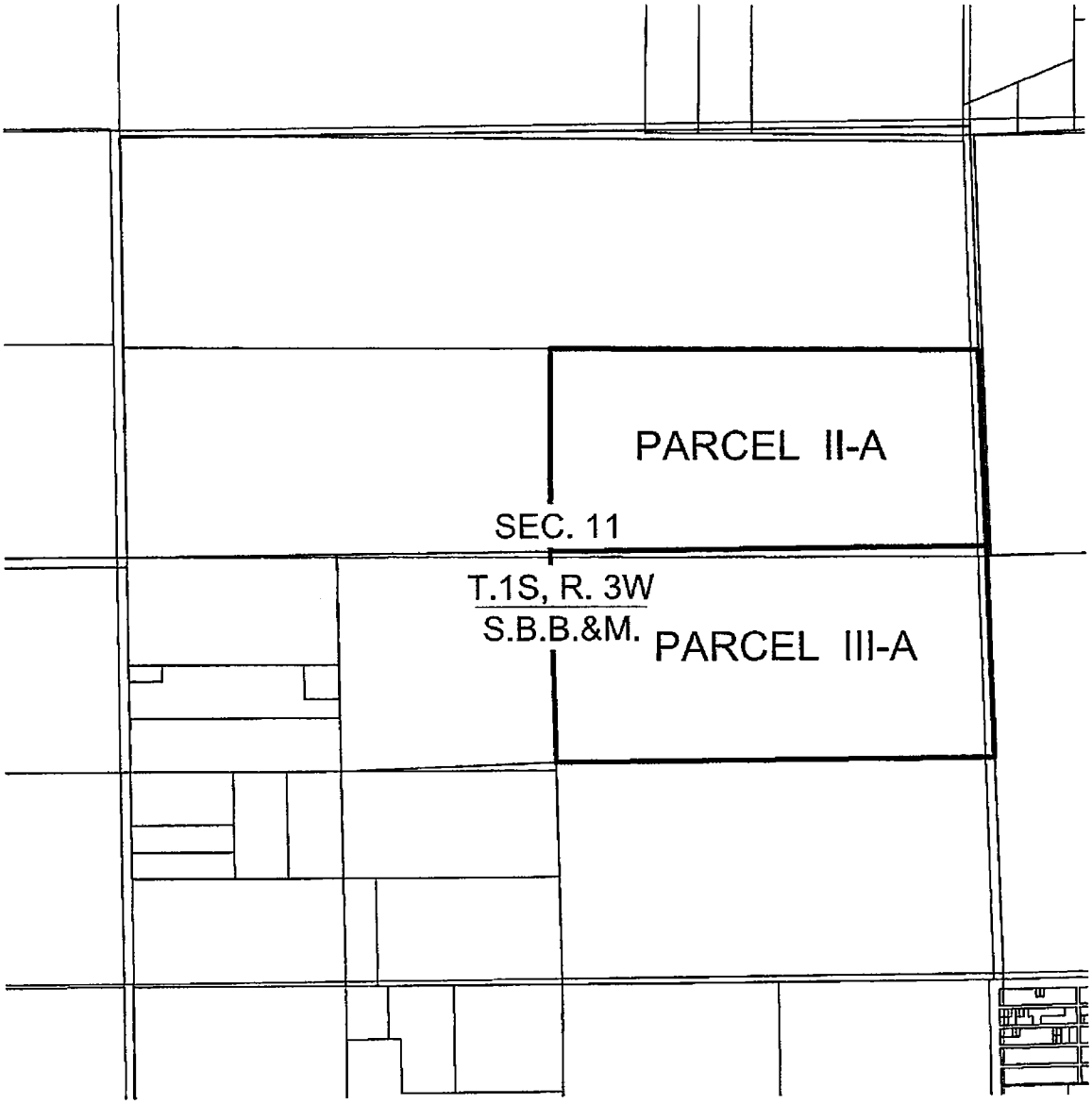
"REDLANDS AGGREGATES SITE"

NOV. 15, 2011

NORTH

1000' 0' 1000'

SCALE: 1"=1000'



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Phone: (909)885-3806 Fax: (909)381-1721

Exhibit 4

Roberton's Ready Mix Lease

AGREEMENT

This Agreement is made on this 11th day of August, 2003, by and between San Bernardino Valley Water Conservation District ("District") and Robertson's Ready Mix, Ltd., ("Robertson's"), together "Parties" or individually, "Party".

RECITALS

A. District is a California water conservation district duly formed and operating under Sections 74000, et seq., of the California Water Code, and operating as a water conservation district, having as a purpose the recharge of ground water supply and maintenance of groundwater basins underlying its jurisdiction area.

B. Robertson's is a California limited partnership, duly formed and organized pursuant to the laws of the State of California, with its principal place of business in Corona, California. Robertson's engages in the business of excavating, processing, and selling rock, sand, gravel and other like substances ("Aggregates").

C. On or about October 5, 1992, the Parties entered into a Lease Agreement for Mineral Extractions ("Cone Camp Lease") pursuant to which Robertson's, on the satisfaction of certain conditions, would have the right to extract Aggregates from that property defined as the "Premises" in the Cone Camp Lease, and commonly referred to as "Cone Camp Quarry." A copy of the Cone Camp Lease is appended hereto, denoted Exhibit "A".

D. Some time in or about 1993, the Parties, together with other entities interested in mining, flood control, resource management and conservation, and municipalities, formed the Santa Ana River Wash Area Coordinated Planning Activities Committee ("Wash Committee") to address land use issues related to the Upper Santa Ana River Wash ("Wash").

E. The Wash Committee examined the most appropriate manner in which to use the Wash for the benefit of all landowners without regard to the existing interests in real property situated in the Wash. The Wash Committee determined that there should be a balance of land uses to accommodate the varied and competing concerns. The Wash Committee further determined that in order to achieve land use balance, the existing and potential uses must be reallocated among specific portions of the Wash.

F. Deliberations of the Wash Committee resulted in the drafting, circulation, and approval of a "Proposed Land Management and Habitat Conservation Plan for the Upper Santa Ana River Wash" ("Concept Plan"), which sets out concepts for realignment of mining, water conservation, recreation, habitat preservation, and other uses in the Santa Ana River Wash and was conceptually endorsed by all members of the Wash Committee, including the Parties. A copy of the Concept Plan as presently conceived is attached as Exhibit "B." This Concept Plan is subject to revision as the parties impacted continue to refine and negotiate its parameters. Implementation of the Concept Plan, as it may evolve over time, will require the formation of a Task Force, of which the Parties shall be members, to fund studies for environmental review of proposed mining, transfer of various property ownerships and lease interests, habitat conservation plans, recreational facilities, regional infrastructure, and water supply and conservation activities, and to implement such activities. A Task Force Agreement has been

prepared and circulated among applicable Wash Committee members, including the Parties, to guide and fund implementation of the Concept Plan. It has been reviewed and approved by the Parties, in the form attached hereto as Exhibit "C," and shall be executed by the Parties upon or prior to execution of this Agreement.

G. The Parties have found and determined that it is in their individual best interests to join together with other members of the Task Force to manage activities in connection with the planning, environmental review, and implementation of the Concept Plan (collectively the "Project").

H. The Cone Camp Lease requires that Robertson's "diligently and continuously take all actions necessary to obtain any and all licenses, permits, or other governmental entitlements.... required to accomplish the excavation purpose set out [therein]". There is currently pending before the city of Highland Robertson's application ("Cone Camp Application") for entitlements to mine Aggregates from the Cone Camp Quarry.

I. Robertson's has represented to the District that it has reached an agreement with Cemex Construction Materials, LP ("Cemex"), an entity engaged in business similar to that in which Robertson's is engaged, concerning the allocation, between Robertson's and Cemex, of the right to extract Aggregates from property which is contemplated for the excavation of Aggregates under the Concept Plan.

NOW, THEREFORE, IN CONSIDERATION OF THE MUTUAL COVENANTS CONTAINED HEREIN THE PARTIES AGREE AS FOLLOWS:

Section 1. Definitions.

In addition to capitalized terms defined elsewhere in this Agreement, the following terms shall be defined as follows:

1.1 "Effective Date" shall mean the date on which both Parties have executed the Task Force Agreement and this Agreement.

1.2 "Section," except as may be qualified to refer to the Cone Camp Lease, shall be deemed to be a reference to a portion of this Agreement.

1.3 "WPA" shall mean the Wash Planning Area, as that term is used and defined in the Concept Plan.

1.4 "Robertson's WPA Allocation" shall mean that portion of the WPA which is allocated, through written agreement between Robertson's and Cemex attached as Exhibit "D", to Robertson's for the mining of Aggregates. Robertson's agrees it must obtain approval from District for any substantial changes to this allocation prior to such changes being effective. Any change within the land acreage specifically dimensioned in Exhibit "D" as 1847' x 1303', that does not change the amount allocated to Robertson's for mining by more than 50% of the area of that dimensioned parcel, shall not constitute a substantial change; all other changes to the allocation agreement shall be considered substantial. The "Robertson's WPA Allocation" specifically excludes the real property located within the WPA and owned by Robertson's,

and/or its affiliate RRM Properties, Ltd., A California limited partnership, in fee as of the Effective Date.

1.5 "Premises Transfer Date" shall occur upon transfer of ownership of interest to the District of those portions of the WPA that fall within Robertson's WPA Allocation, and which, as of the date of this Agreement, are owned by the United States, through the Bureau of Land Management.

1.6 "Concept Plan Termination Date" shall mean any date prior to the Premises Transfer Date upon which either Party's participation in the Task Force Agreement shall have been finally terminated, as provided in Paragraph 23 of the Task Force Agreement, or upon dissolution of the Task Force pursuant to Paragraph 22 of the Task Force Agreement. Upon occurrence of the Premises Transfer Date, there shall be no Concept Plan Termination Date.

1.7 "Concept Plan Term" shall mean the period between the Effective Date and the occurrence of the earlier of the (1) Concept Plan Termination Date; or (2) Premises Transfer Date.

Section 2. Obligations During Concept Plan Term.

2.1 Prosecution of Concept Plan. The Parties, and each of them, agree that for so long as the Concept Plan, as may be modified consistent with the provisions of Section 2.3, below, but otherwise in substantially the same form as set forth in the Task Force Agreement, is being diligently and in good faith pursued, they will not, prior to January 1, 2006, terminate their participation under the Task Force Agreement pursuant to Paragraph 23 of the Task Force Agreement. Notwithstanding the foregoing, in the event that prior to January 1, 2006, Robertson's contribution to the total Task Force funding exceeds that required to be paid by CEMEX, or exceeds, by more than 0.25 percent of the total Task Force funding, that required to be paid by the District, Robertson's shall be free to exercise its rights of termination under Paragraph 23 of the Task Force Agreement. . During the Concept Plan Term each of the Parties shall use their best efforts to achieve the Premises Transfer Date; provided, however, that neither Party shall be considered to be in breach of this provision unless a party who believes that a breach has occurred first provides to the other Party written notice informing the notified Party of the specific nature of the alleged breach of this provision, the reasons therefore, the actions the notifying Party alleges must be taken to cure the alleged breach and provides to the noticed Party either, (a) reasonable opportunity to cure the breach, or (b) in the event the breach is of the nature that a cure cannot be promptly effected, reasonable opportunity to prepare and prosecute a plan pursuant to which the breach will be cured, or (c) in the event the alleged breach is one that cannot be cured, a good faith effort to meet and confer regarding whether mutually satisfactory alternative arrangements can be made. In the event of any dispute regarding either Party's alleged breach of this "best efforts" obligation, the matter shall be resolved through the binding arbitration mechanism set forth in Section 8.06 of the Cone Camp Lease.

2.2 Suspension of Robertson's Duty to Obtain Permits. During the Concept Plan Term, Robertson's obligations pursuant to paragraph 5.05 of the Cone Camp Lease, to diligently and continuously take all actions necessary to obtain any and all licenses, permits, or other governmental entitlements required to accomplish the excavation purpose set out in the Cone

Camp Lease, shall be suspended. Such suspension shall begin on the Effective Date and shall continue until the earlier occurrence of: A) the Premises Transfer Date or B) the Concept Plan Termination Date. Robertson's shall not pursue such licenses, permits, or other governmental entitlements for any excavation of any portion of the "Premises," as originally defined in the Cone Camp Lease, at any time during the Concept Plan Term.

2.3 District to Support Robertson's Attempt to Amend Concept Plan. Robertson's has advised District that during the Concept Plan Term, Robertson's will seek Task Force Approval to amend the present iteration of the Concept Plan, to expand the Concept Plan mining area to include additional property owned by Robertson's. District agrees that it will support Robertson's attempt to so amend the Concept Plan, provided it is consistent with District's water conservation and land management objectives.

2.4 Incorporation of Defined Terms into Cone Camp Lease. Beginning on the Effective Date hereof, the following terms, as they are defined herein, shall be deemed incorporated, as applicable, into the Cone Camp Lease: Premises Transfer Date, Concept Plan Term; Concept Plan Termination Date; Robertson's WPA Allocation; and Cone Camp Quarry.

Section 3. Rights and Obligations on Premises Transfer Date

3.1 Transfer of Premises. The Premises shall, upon the Premises Transfer Date, immediately and automatically be deemed to mean and refer to the Robertson's WPA Allocation and the Cone Camp Lease shall no longer apply to the Cone Camp Quarry. Upon the Premises Transfer Date, the parties shall prepare, and may record, such documents as may be necessary or appropriate to reflect the proper legal descriptions or other identification of the transferred Premises, but the transfer of the Premises from the area originally defined in the Cone Camp Lease to the Robertson's WPA Allocation shall not be conditioned or dependent upon such documentation, but rather shall occur immediately upon occurrence of the Premises Transfer Date.

3.2 Revival of Robertson's Duty to Obtain Permits on Premises Transfer Date. Immediately upon the Premises Transfer Date, Robertson's obligations pursuant to Section 5.05 of the Cone Camp Lease, to diligently and continuously take all actions necessary to obtain any and all licenses, permits, or other governmental entitlements required to accomplish the excavation purpose set out in the Cone Camp Lease, shall revive, and shall apply to the Robertson's WPA Allocation, as provided in Section 3.1 of this agreement.

3.3 Commencement Date on Premises Transfer Date. Immediately upon occurrence of the Premises Transfer Date, Section 1.01 of the Cone Camp Lease shall be automatically amended to read as follows:

> 1.01 Commencement Date. The Commencement Date of the Lease Term shall be the date sixty (60) days after occurrence of the Premises Transfer Date.

In applying the foregoing provision it is the intention of the Parties that in the event that Premises Transfer Date does not occur by January 1, 2007, the Cone Camp Lease shall not be terminated, but shall survive, subject to modification triggered by the happening of either Premises Transfer Date or Concept Plan Termination Date.

Section 4. Rights and Obligations on Concept Plan Termination Date.

4.1 Revival of Robertson's Duty to Obtain Permits on Concept Plan Termination Date. Immediately upon the Concept Plan Termination Date, Robertson's obligations pursuant to Section 5.05 (A) of the Cone Camp Lease, to diligently and continuously take all actions necessary to obtain any and all licenses, permits, or other governmental entitlements required to accomplish the excavation purpose set out in the Cone Camp Lease, shall revive.

4.2 Commencement Date on Concept Plan Termination Date. Immediately upon occurrence of the Concept Plan Termination Date, Section 1.01 of the Cone Camp Lease shall be amended to read as follows:

> 1.01 Commencement Date. The Commencement Date of the Lease Term shall, at Robertson's election, either be (x) the date sixty (60) days after the Concept Plan Termination Date, or (y) January 1, 2003, provided, however, that in no event shall District be required to refund any portion of the Phase I Payment before the expiration of one (1) full year following the date Robertson's provides to District written notice of its election hereunder. Robertson's election shall be made in writing and delivered to District prior to the 60th day following Concept Plan Termination Date.

In applying the foregoing provision it is the intention of the Parties that in the event that Concept Plan Termination Date does not occur by January 1, 2007, the Cone Camp Lease shall not be terminated, but shall survive, subject to modification triggered by the happening of either Premises Transfer Date or Concept Plan Termination Date.

Section 5. Mancino Property. Effective immediately upon the Effective Date, the original Cone Camp Lease shall be amended to exclude from the definition of "Premises" therein, all of the property more specifically described in Exhibit "E" hereto (the "Mancino Property").

Section 6. Waiver. Each of the Parties herein fully waives its right to claim that any act, omission, or inaction of the other Party, prior to the Effective Date, constituted: (a) a breach of any of the provisions of the Cone Camp Lease, or any obligation arising thereunder or in connection therewith, or (b) any basis for reformation or rescission of all or any part of the Cone Camp Lease, for which any relief, legal or equitable, and specifically, but not by way of limitation, monetary damages, were or could have been available, either as affirmative relief, or as an offset against any other claim. This waiver extends to all claims or causes of action, whether presently known or unknown, and in connection with such waiver, both parties specifically waive any operation or applicability of California Civil Code section 1542, which provides:

> "A general release does not extend to claims which the creditor does not know or suspect to exist in his favor at the time of executing the release, which if known by him must have materially affected his settlement with the debtor."

Each Party represents and warrants it has consulted with counsel regarding the nature and consequences of waiving the operation of Civil Code section 1542, and knowingly and willingly has decided to waive it.

Section 7. No Obligation on Robertson's to Transfer. Robertson's execution of this Agreement, its execution of the Task Fore Agreement, anything expressed or implied in either document, and/or its participation in advancing the Concept Plan, whether taken individually or collectively in any combination, shall not be construed or interpreted to require Robertson's to transfer, encumber or agree to any use restrictions being placed upon any real property Robertson's owns in fee on the Effective Date; or to cause any such real property be transferred, encumbered, or restricted as to use. Nothing in this Section 7 affects or relieves Robertson's obligation to transfer the Premises, as provided in section 3 above, however.

Section 8. Notices. All notices required to be provided hereunder, shall be in writing, and either served personally or sent by United States Mail. For these purposes, the addresses for the Parties are as follows:

As to Robertson's Ready Mix, Ltd.	As to District
President Robertson's Ready Mix, Ltd. 200 South Main Street Suite 200 Corona CA 92878	General Manager San Bernardino Valley Water Conservation District 1630 West Redland Blvd., Suite A Redlands CA 92373

Notices shall be deemed delivered on the date of personal service or on the third day following deposit in the United States Mail. Any Party may change the address or person to whom notices are to be directed hereunder, by written notice to the other Party.

Section 9. Entire Agreement. This Agreement, in connection with the unaffected portions of the original Cone Camp Lease, contains the entire agreement of the Parties hereto with respect to the matters contained herein and supersedes all negotiations, prior discussions, and preliminary agreements or understandings, written or oral. No waiver or modification of this Agreement shall be binding unless consented to by the Parties in writing.

Section 10. Cooperation; Further Acts. The Parties agree to use reasonable care and diligence to perform their respective obligations under this Agreement. The Parties agree to act in good faith to execute all instruments, prepare all documents, and take all actions as may be reasonably necessary, appropriate or convenient to carry out the purposes of this Agreement.

Section 11. Governing Law. This Agreement shall be governed by and construed under the laws of the State of California.

Section 12. Attorneys' Fees. In an action or proceeding involving a dispute between the Parties arising out of this Agreement, including arbitration, the prevailing Party shall be entitled to receive from the other Party, reasonable attorneys' fees. The term "attorneys' fees" shall include reasonable costs for investigating the action, conducting discovery, cost of appeal, costs

and fees for expert witnesses, and all other normally allowable costs incurred in such litigation, whether or not such litigation is prosecuted to final judgment.

Section 13. No Third Party Beneficiaries. There are no intended third party beneficiaries of any right or obligation assumed by the Parties.

Section 14. Construction: Captions. The language of this Agreement shall be construed according to its fair meaning, and not for or against any Party hereto based on authorship. The captions of the various articles and paragraphs are for convenience and ease of reference only, and do not define, limit, augment, or describe the scope, content, or intent of this Agreement.

Section 15. Severability. Each provision of this Agreement shall be severable from the whole. If any provision of this Agreement shall be found contrary to law, it is the intention of the Parties that the remainder of this Agreement shall continue in full force and effect.

Section 16. Incorporation of Recitals. The Recitals are incorporated herein and made an operative part of this Agreement.

Section 17. Authority to Enter into Agreement. The Parties warrant they have all requisite power and authority to execute and perform this Agreement. Each person executing this Agreement on behalf of their party warrants that he or she has the legal power, right, and authority to make this Agreement and bind his or her respective Party, and that in so doing, such Party is not thereby in breach of any other contract or agreement.

Section 18. Counterparts. This Agreement may be signed in counterparts, each of which shall constitute an original.

Section 19. Assignment. Neither Party shall assign its rights or delegate its responsibilities hereunder without the express written consent of the other Party, which consent shall not be unreasonably withheld. This Agreement, including the rights of first refusal and options granted hereunder, shall be binding on all successors and is intended to and shall run with the land.

Section 20. Recordation. Within fifteen (15) days of the Effective Date, the Parties shall have this Agreement recorded with the County Recorder for the County of San Bernardino, State of California.

ROBERTSON'S READY MIX, LTD.,
a California limited partnership
By: Robertson's Ready Mix, Ltd.
a California corporation
Its General Partner

By: _____
Dennis Troesh
Its: President

July 29, 2003

Date: 8/11/03

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT,
a political subdivision of the State of California

By: _____
Sterling Woodbury

Its: President of the Board of Directors

Date: 8/11/03

State of California)
) ss.
County of Riverside)

On July 29, 2003, ~~2003~~, before me Susan J. Howard, notary public, personally appeared Dennis Troesh, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted executed the instrument.

Witness my hand and official seal

Susan J Howard

SUSAN J. HOWARD
Commission # 1314530
Notary Public - California
Riverside County
My Comm. Expires Jul 20, 2005

State of California)
) ss.
County of Riverside)

On August 11, 2003, before me Colleen E. Theuer, notary public, personally appeared Sterling Woodbury, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted executed the instrument.

Witness my hand and official seal

Colleen E. Theuer

COLLEEN E. THEUER
Commission # 1262640
Notary Public - California
San Bernardino County
My Comm. Expires May 4, 2004

Exhibit List

Description	Designation:
Cone Camp Lease	A
Concept Plan	B
Task Force Agreement	C
Allocation Agreement Between Robertson's and Cemex	D
Legal Description of Portion of Mancino Property Excluded from "Premises" of Original Cone Camp Lease	E

Exhibit 5

2010 State Water Rights Filing

[FINAL SUBMITTED VERSION]

REPORT OF LICENSEE FOR 2010

Primary Owner: SAN BERNARDINO VALLEY W C D
Application Number: A002217
License Number: 002831

Compliance with License Terms and Conditions	
The project has been abandoned and I request revocation of my water right license	No
I have reviewed my water right license	Yes
I am complying with all terms and conditions	Yes
Description of noncompliance with terms and conditions	
Intake location has been changed	
Description of intake location changes	
Type of use has changed	
Description of type of use changes	
Place of use has changed	
Description of place of use changes	

Purpose of Use	
Other	Groundwater Recharge

Month	Amount directly diverted or collected to storage (Acre-Feet)	Amount used (Acre-Feet)
January	241.0	0.0
February	285.0	0.0
March	1412.0	0.0
April	1977.0	0.0
May	1756.0	0.0
June	0.0	0.0
July	0.0	0.0
August	0.0	0.0
September	0.0	0.0
October	0.0	0.0
November	0.0	0.0
December	0.0	0.0
Total	5671	0

Month	Maximum Rate of Diversion (CFS)
January	
February	
March	
April	
May	

June	
July	
August	
September	
October	
November	
December	

Reservoir name	Spilled this year	Feet below spillway at maximum storage	Completely emptied	Feet below spillway at minimum storage	Method used to measure water level
NA	No	0.0	No	0.0	NA

Conservation of Water	
Are you now employing water conservation efforts?	Yes
Description of water conservation efforts	Cooperative Water Recharge for Basin
Amount of water conserved	5671.0 Acre-Feet

Water Quality and Wastewater Reclamation	
During the period covered by this Report, did you use reclaimed water from a wastewater treatment facility, water from a desalination facility, or water polluted by waste to a degree which unreasonably affects the water for other beneficial uses?	No
Amount of reclaimed, desalinated, or polluted water used	

Conjuctive Use of Groundwater and Surface Water	
During the period covered by this Report, were you using groundwater in lieu of available surface water authorized under your license?	No
Amounts of groundwater used	

Additional Remarks
Maximum Rate of Diversion not recorded for 2010 Cooperative Recharge with the Region's water entities occurs additional explanation is shown in the attached file.

Attachments	
File Name	Size
Water Rights Filing Explanaiton Final June 27 2011.pdf	13 KB

Contact Information of the Person Submitting the Form	
First Name	Daniel
Last Name	Cozad
Relation to Water Right	Authorized Official
I read the above and agree	Yes

[FINAL SUBMITTED VERSION]

REPORT OF LICENSEE FOR 2010

Primary Owner: SAN BERNARDINO VALLEY W C D
Application Number: A004807
License Number: 002832

Compliance with License Terms and Conditions	
The project has been abandoned and I request revocation of my water right license	No
I have reviewed my water right license	Yes
I am complying with all terms and conditions	Yes
Description of noncompliance with terms and conditions	
Intake location has been changed	
Description of intake location changes	
Type of use has changed	
Description of type of use changes	
Place of use has changed	
Description of place of use changes	

Purpose of Use	
Other	GROUND WATER RECHARGE

Month	Amount directly diverted or collected to storage (Acre-Feet)	Amount used (Acre-Feet)
January	0.0	0.0
February	0.0	0.0
March	0.0	0.0
April	0.0	0.0
May	0.0	0.0
June	0.0	0.0
July	0.0	0.0
August	0.0	0.0
September	0.0	0.0
October	39.0	39.0
November	0.0	0.0
December	268.0	268.0
Total	307	307

Month	Maximum Rate of Diversion (CFS)
January	0.0
February	0.0
March	0.0
April	0.0
May	0.0

June	0.0
July	0.0
August	0.0
September	0.0
October	0.0
November	0.0
December	0.0

Reservoir name	Spilled this year	Feet below spillway at maximum storage	Completely emptied	Feet below spillway at minimum storage	Method used to measure water level
ASDF	No	0.0	Yes		STICK

Conservation of Water	
Are you now employing water conservation efforts?	Yes
Description of water conservation efforts	Cooperative Groundwater Management with Regional Agencies.
Amount of water conserved	307.0 Acre-Feet

Water Quality and Wastewater Reclamation	
During the period covered by this Report, did you use reclaimed water from a wastewater treatment facility, water from a desalination facility, or water polluted by waste to a degree which unreasonably affects the water for other beneficial uses?	No
Amount of reclaimed, desalinated, or polluted water used	

Conjuctive Use of Groundwater and Surface Water	
During the period covered by this Report, were you using groundwater in lieu of available surface water authorized under your license?	No
Amounts of groundwater used	

Additional Remarks
Maximum Rate of Diversion not recorded for 2010 Cooperative Recharge with the Region's water entities occurs additional explanation is shown in the attached file.

Attachments	
File Name	Size
Water Rights Filing Explanaiton Final June 27 2011.pdf	13 KB

Contact Information of the Person Submitting the Form	
First Name	Daniel
Last Name	Cozad
Relation to Water Right	Authorized Official
I read the above and agree	Yes

SWRCB Annual Water Rights Report

Annotation to Accompany Filings by SBVWCD and SBVMWD/WMWD

During 2010, the San Bernardino Valley Water Conservation District (SBVWCD) and San Bernardino Valley Municipal Water District (SBVMWD)/Western Municipal Water District (WMWD) diverted water at the Cuttle Weir to replenish the groundwater basin. Each agency's season of diversion, total quantity of diversion and water rights are listed in the following table.

Agency	Season of Diversion	Total Quantity of Water Diverted	Water Right
SBVWCD	1/1/10 to 5/31/10	5,671 af	License No. 2831
SBVMWD/WMWD	6/29/10 to 12/31/10*	14,934 af	Permit No. 21264
SBVWCD	10/1/10 to 12/31/10	307 af	License No. 2832

* The State Water Resources Control Board issued Permit No. 21264 on June 29, 2010.

Diversion of approximately 882 acre feet to replenish the groundwater basin were shifted outside the Season of Diversion due to operations of the Seven Oaks Dam by the USACOE and are not being accounted for in this table. Such diversions occurred under water rights, jointly utilized under the Santa Ana River and Mill Creek Cooperative Water Project.

Additionally, SBVMWD/WMWD and SVBWCD are finalizing negotiations to expand our contractual relationships to cooperatively utilize and expand District facilities to maximize the water diverted for recharge jointly under these permits and licenses. Notwithstanding our intentions, should these negotiations for cooperative agreement not be fruitful, both districts may need to revise their filings.

AGREEMENT FOR THE COOPERATIVE USE OF UNUSED WELL CAPACITY, THE TEXAS GROVE RESERVOIR AND THE CENTRAL FEEDER

This Agreement for the Cooperative Use of Unused Well Capacity, the Texas Grove Reservoir and the Central Feeder ("Agreement") is entered into and effective this 2nd day of April , 2013 ("Effective Date") by and between the City of Redlands ("City") and San Bernardino Valley Municipal Water District ("Valley District"). City and Valley District are sometimes individually referred to herein as a "Party" and, together, as the "Parties."

Recitals

A. City owns the 3.9 million gallon Texas Grove Reservoir, which is shown on the map attached hereto as Exhibit "A" and incorporated herein by reference. The Texas Grove Reservoir is located adjacent to the Valley District Redlands Pump Station.

B. Valley District desires to purchase 2.3 million gallons of capacity in the existing City of Redlands' Texas Grove Reservoir which is already intertied with the Valley District Central Feeder system.

C. City is willing to sell Valley District 2.3 million gallons of capacity in the Texas Grove Reservoir.

D. City owns various water wells that deliver water to the Texas Grove Reservoir.

E. Valley District has constructed the Central Feeder Project Phase 1, which includes the Redlands Pump Station and a 78-inch pipeline (the "**Central Feeder**") that connects to the Metropolitan Water District of Southern California's Inland Feeder Pipeline and the East Branch Extension of the State Water Project. The Central Feeder is shown on the map attached hereto as Exhibit "A." Valley District further intends to construct new wells in the San Bernardino Basin Area (the "**SBBA**"), in, or upstream of, the Area of Historic High Groundwater (the "**AHHG**" or the "**Pressure Zone**") that could deliver water to the Central Feeder.

F. From time to time, Valley District intends to use its proposed wells to dewater the AHHG during periods when the Boards of Directors for Valley District and Western Municipal Water District (**"Western"**) agree additional extractions are needed to mitigate the risks associated with high groundwater which include the flooding of basements and the increased risk of property damage and personal injury from soil liquefaction during an earthquake. These Valley District wells may also be used to extract: (i) State Water Project water that has been "banked" in the SBBA, (ii) Western's portion of Santa Ana River water diverted and stored in the SBBA under State Water Resources Control Board permits 21264 and 21265, or (iii) "new conservation water," as defined in the *Western* Judgment (*Western Municipal Water District et al. v. East San Bernardino County Water District et al.*, Riverside County

SBVMWD LEGAL
DOCUMENT 2392

Superior Court Case No. 78426, April 17, 1969) and determined by the Western-San Bernardino Watermaster that is banked in the SBBA. Additionally, Valley District intends to consult with other water agencies with interests in the SBBA, by working with the Basin Technical Advisory Committee, in order to ensure Valley District and Western Boards of Directors are provided with the most up-to-date technical information upon which to base decisions.

G. To postpone the need to construct its own wells and related transmission pipelines, Valley District desires to utilize the City's water wells when the City is not using such wells (unused capacity) to pump and deliver water to the Central Feeder via the Texas Grove Reservoir and Redlands Pump Station.

H. City wishes to make its unused water well capacity available to Valley District provided that it does not cause lower water levels and, thereby, increase pumping costs for City's own customers nor cause water quality degradation for Total Dissolved Solids ("**TDS**") in the SBBA that causes Redlands Wastewater Treatment Plant discharges to exceed permitted concentrations.

I. City and Valley District, in addition to other parties, entered into the "Settlement Agreement Relating to the Diversion of Water From the Santa Ana River System (the "**Seven Oaks Accord**")" on July 21, 2004. One of the provisions of the Seven Oaks Accord provides for participation in a "groundwater spreading program" that would, among other things, maintain groundwater levels at relatively constant levels in the SBBA.

J. Valley District and the Santa Ana Regional Water Quality Control Board entered into the "Cooperative Agreement to Protect Water Quality and Encourage the Conjunctive Uses of Imported Water in the Santa Ana River Basin" (the "**RWQCB Agreement**") on January 16, 2008, which requires preparation of a report on water quality conditions in the SBBA every three years.

K. City and Valley District wish to cooperate in the operation of facilities for the mutual benefit of the Parties.

Agreements

1. *Valley District Purchase of Storage Rights in the Texas Grove Reservoir*

   a. *Storage Rights.* City hereby sells, and Valley District hereby purchases, all rights to the use of the upper 2.3 million gallons of usable storage capacity in the existing Texas Grove Reservoir, for the life of the reservoir, which capacity is understood by the Parties to be at, or above, elevation 1338.9 feet MSL NGVD. City shall retain all storage rights to the use of that portion of the Texas Grove Reservoir below elevation 1338.9 feet MSL NGVD. Neither Party shall interfere

with the other Party's use of its share of the storage capacity of the Texas Grove Reservoir, unless such storage capacity is needed to meet fire fighting demands by City. In such instances, City shall have the right to use all water available in the Texas Grove Reservoir. City shall cooperate with Valley District and allow Valley District to construct City-approved facilities necessary to utilize Valley District's full storage rights in the Texas Grove Reservoir.

b. *Payment by Valley District for Storage Rights.* Valley District shall pay City the sum of $2,168,426 for the rights described in paragraph 1a within 30 calendar days after the Effective Date of this Agreement. Valley District will make such payment by electronic funds transfer into a fund approved by City. City shall provide Valley District with a written receipt, acknowledging payment in full, within 7 calendar days of the electronic funds transfer.

c. *Operation and Maintenance.* City shall be responsible for the day to day operation and maintenance of the Texas Grove Reservoir, except for the 42-inch nozzle connecting the Texas Grove Reservoir to Valley District's Redlands Pump Station which shall be the responsibility of Valley District.

(1) *Ordinary Operation and Maintenance.* City shall operate the Texas Grove Reservoir in accordance with the terms of this Agreement and in accordance with good engineering practices, including normal maintenance of the reservoir.

(2) *Substantial Work.* In the event City determines, in its reasonable engineering judgment, that substantial work (i.e., more than $50,000 in a calendar year) is needed to properly maintain the Texas Grove Reservoir, City shall promptly consult with Valley District and, before commencing any work, City shall give written notice to Valley District of: (i) the work to be performed, (ii) the estimated cost of the proposed work, and (iii) the contractor(s) that will perform work. City may only commence such work upon receipt of written approval from Valley District, which approval shall not be unreasonably withheld or delayed.

(3) *Emergency Circumstances.* Nothing in paragraph 1c(2) shall be construed to prevent City from taking any action it reasonably believes necessary in the event of an emergency. City shall notify Valley District of the existence of an emergency as soon as reasonably possible and shall, to the extent feasible under the circumstances, coordinate a response with Valley District.

(4) *Reimbursement by Valley District.* Valley District shall reimburse City for 63% of the costs to operate and maintain the Texas Grove Reservoir, as determined based on the calculations attached hereto as Exhibit "B" and

entitled "City of Redlands Reservoir #1 (Texas Grove Reservoir)." Reimbursable costs shall include, but not be limited to, actual and reasonable costs of City staff, consultants and contractors for operating and maintaining the Texas Grove Reservoir.

(5) *Invoices to Valley District.* City shall invoice Valley District for such operation and maintenance costs quarterly in arrears and Valley District shall pay such invoices within 30 calendar days of the date of the invoice. Invoices shall indicate, in reasonable detail, the cost of each action undertaken by City to operate and maintain the Texas Grove Reservoir, including the date of the service, the individuals performing the service, the hourly rate of such individuals, and the costs of any materials. In the event Valley District objects to any costs identified on an invoice, Valley District shall pay the undisputed costs and shall invoke the dispute resolution process described in paragraph 10c below for the objectionable costs.

2. *Term of Agreement.* This Agreement shall have an initial term of five years from its Effective Date and shall automatically renew for subsequent five-year terms thereafter unless terminated as provided for in paragraph 8 below.

3. *Cooperative Operation of City Wells and the Central Feeder*

a. *Delivery of Water by City to Valley District.*

(1) *Estimate of unused capacity by City.* No later than each November 1, City shall provide Valley District with a written estimate of the availability of water during the following calendar year, up to a maximum of 20,000 acre-feet. City shall make this estimate in its sole and reasonable discretion. City may base its estimate on hydrologic conditions, groundwater levels, facility limitations, demand for water within City, or any other reasonable factor.

(2) *Valley District Water Order.* No later than each December 1 of each year, Valley District shall provide City with a written order for water for the following calendar year, up to a maximum amount equal to City's estimate of unused capacity.

(3) *Water delivery to Texas Grove Reservoir.* City shall operate its water production and distribution systems to provide Valley District with the amount of water ordered by Valley District at the Texas Grove Reservoir. Valley District shall install or cause to be installed a meter to measure deliveries by City to Valley District. City shall have the right to read the

meter on a monthly basis and inspect the meter at least annually in order to ensure the accurate calculation of water delivered to Valley District.

(4) *Modification of City's Estimate.* The Parties understand and acknowledge that a number of factors, including but not limited to greater/lesser precipitation or changes in customer demand for water, may modify City's ability to supply Valley District with ordered water. It is the intent of the Parties that this Agreement not interfere with City's obligation to serve its customers.

(a) City may increase or decrease its estimate of water available to Valley District at any time during a calendar year as may be reasonable to provide water service to City's customers. City will use reasonable, good faith efforts to meet Valley District's water demands.

(b) In the event of an emergency, as defined in California Public Contract Code Section 1102, City may take any actions it deems reasonably necessary to respond to the emergency and provide water service to its customers. City shall promptly consult with Valley District and jointly develop a plan that will provide Valley District water as soon as practicable after the conclusion of the emergency.

b. *Payment by Valley District for Water.* Valley District shall pay City the actual production cost, as determined pursuant to paragraph 3b(1) below, and the Operations, Maintenance and Repair ("**OMR**") cost, as determined pursuant to paragraph 3b(2) below, for water delivered to Valley District at the Texas Grove Reservoir.

(1) *Payment for Production Cost.* Valley District shall pay City for City's actual cost of producing water pursuant to this Agreement. Such actual costs may be determined by using either: (i) energy and treatment costs for the water production facilities that City specifically operates to meet Valley District's water order or (ii) a weighted average cost of energy and treatment for all City facilities producing water during a period in which City delivers water to Valley District. City shall determine, and notify Valley District in writing, which method will be used to determine the actual cost of producing water for Valley District prior to delivery of water to Valley District. Absent notification, the Parties shall use method (ii) above until notice is given.

(2) *Payment for OMR Cost.* Valley District shall pay City's actual costs to operate, maintain and repair its water production and distribution facilities

(including, without limitation, production wells, booster pumps, treatment facilities, etc.) for the benefit of Valley District. Specifically, Valley District shall pay all costs, including staff time, associated with City's operation of its water production and distribution facilities to deliver water to Valley District. In addition, Valley District shall pay its fair share of City's costs to maintain and repair its water production and distribution facilities. This cost shall be equal to the City's actual per acre-foot cost for maintenance and repair of its water production and distribution facilities over the preceding three calendar years, multiplied by the number of acre-feet ordered by Valley District.

(3) *Invoices to Valley District.*

(a) *Production Cost Invoices.* City shall invoice Valley District for production costs at least quarterly in arrears and Valley District shall pay such invoices within 30 calendar days of the date of the invoice. Invoices shall indicate, method used to determine production costs as described in paragraph 3b(1), facilities used to provide Valley District water, and cost for chemicals and power used. In the event Valley District objects to any costs identified on an invoice, Valley District shall pay the undisputed costs and shall invoke the dispute resolution process described in paragraph 10c below for the objectionable costs.

(b) *OMR Cost Invoices.* City shall invoice Valley District for OMR costs at least quarterly in arrears and Valley District shall pay such invoices within 30 calendar days of the date of the invoice. Invoices shall indicate, in reasonable detail, the information necessary to calculate costs as described in paragraph 3b(2). For expenses and work outside of what should normally be expected, City shall identify expenses and/or work performed and include date expense was made or work was performed, facilities involved, the individuals or company performing the service, hourly rate of such individuals or company, and costs of any materials or service using the methodology provided on Exhibit "C." In the event Valley District objects to any costs identified on an invoice, Valley District shall pay the undisputed costs and shall invoke the dispute resolution process described in paragraph 10c below for the objectionable costs.

c. *Water Quality Reporting.* The City shall provide Valley District with copies of all reports submitted to the Santa Ana Regional Quality Control Board.

d. *Future Actions.* The Parties understand and acknowledge that this Agreement is intended not only to serve as the basis for cooperative operations beginning in 2013, but is also intended to serve as the basis for long-term cooperation. The Parties agree they will consider amending this Agreement at appropriate times to reflect additional facilities and new opportunities to improve the conjunctive management of the SBBA and/or water supply reliability for the San Bernardino Valley.

4. *Water Level and Water Quality Monitoring.* The Parties shall cooperate in monitoring water levels and water quality to ensure that the terms of this Agreement do not have an adverse impact on water levels or water quality in the SBBA.

a. The Parties shall monitor water levels using the Basin Technical Advisory Committee annual Regional Water Management Plan and/or, independently, to ensure compliance with the water level requirements of the Seven Oaks Accord.

b. The Parties agree to monitor any water quality impacts to Total Dissolved Solids ("**TDS**") using data provided in the triennial report prepared for the Santa Ana Regional Water Quality Control Board pursuant to the Santa Ana Regional Water Quality Control Board Agreement.

5. *Impacts to Water Levels.* If it is determined by the Parties that the water level requirements in the Seven Oaks Accord are not being met, Valley District will take one of the following actions:

a. *Stop taking deliveries*. Valley District will cease to water through City facilities until water levels are in compliance with the requirements of the Seven Oaks Accord.

b. *Deliver Exchange Water to City.* To offset the pumping costs associated with lower water levels, Valley District will provide water to City, on a 1:1 basis ("**Exchange Water**"), for deliveries made to Valley District after water levels are determined to be out of compliance with the Seven Oaks Accord and up until the point water levels are determined to be in compliance with the Seven Oaks Accord.

(1) *Sources of Exchange Water.* Valley District may obtain such Exchange Water from the State Water Project, from the Santa Ana River, from Mill Creek, from sources outside the SBBA or from "new conservation" as that term is defined in the *Western* Judgment (*Western Municipal Water District et al. v. East San Bernardino County Water District et al.* (Riverside County Superior Court No. 78426, April 17, 1969). The selection of sources of Exchange Water shall be within the sole discretion of Valley District but water diverted from the Santa Ana River shall not

comprise more than 50% of the Exchange Water delivered to City during any three-year reporting period, as defined in paragraph 4a below.

(2) *Delivery of Exchange Water.* Valley District shall deliver Exchange Water to City as soon as feasible but no later than three calendar years after the calendar year in which City delivered water to Valley District. Valley District shall deliver Exchange Water to one or more of the following agreed upon locations:

(a) San Bernardino Valley Water Conservation District Mill Creek Spreading Grounds;

(b) San Bernardino Valley Water Conservation District Santa Ana River Spreading Grounds;

(c) Bear Valley Mutual Water Company Airport Spreading Grounds;

(d) City's San Bernardino Avenue Spreading Grounds (formerly Bear Valley Mutual Water Company Judson Ponds);

(e) Such other spreading grounds that directly benefit City's wells and other wells in the surrounding area, as the Parties may determine through mutual consent in the future.

Valley District shall calculate and document deliveries of Exchange Water to City at the above locations in a manner that both Parties agree to be reasonable, recognizing that several of the above locations are owned by non-parties to this Agreement.

In the event Valley District is unable to deliver Exchange Water to City within a three consecutive calendar year time period, Valley District shall increase the amount of Exchange Water delivered to City by 5% of the overdue balance for every calendar year beyond the three calendar years allowed until the Exchange Water is delivered. The Parties shall use a "first-in, first-out" accounting to track Exchange Water for multiple years.

(3) *In-Lieu Recharge.*

(a) In the event spreading of Exchange Water is not prudent: (i) due to high groundwater conditions in the pressure zone, (ii) because such spreading would have adverse impacts on groundwater contaminants, or (iii) because City determines it would be beneficial for City to take deliveries of Exchange Water at a water treatment plant in lieu of the spreading grounds identified in

paragraph 5b(2), City may take deliveries of up to 50% of Exchange Water at its Horace Hinckley Surface Water Treatment Plant or Henry Tate Surface Water Treatment Plant, at its sole discretion. Valley District shall deliver the remaining Exchange Water to such locations that Valley District, in its sole discretion, determines appropriate for sound management of the SBBA.

(b) If City chooses to take delivery of Exchange Water at the Henry Tate Surface Water Treatment Plant, City may receive up to 10% of the total Exchange Water delivered in a calendar year at Henry Tate Surface Water Treatment Plant at no cost to the City.

6. *Impacts to Water Quality.* If it is determined by the Parties that pumping by City for delivery to Valley District, under the terms of this Agreement, is the sole cause for the City violating one or more of its permits from the Santa Ana Regional Water Quality Control Board, Valley District will take one of the following actions:

a. *Stop taking deliveries.* Valley District will cease to water through City facilities until water levels are in compliance with the Seven Oaks Accord.

b. *Recharge high quality water.* Valley District will recharge lower TDS water in a mutually agreeable locations until TDS has returned to acceptable levels.

c. *Any combination.* Valley District may use one, or both, of the above, at its discretion, to reduce the TDS level until the TDS has returned to mutually agreed upon acceptable levels.

d. *Violation of Santa Ana Regional Water Quality Control Board TDS discharge limit on Redlands wastewater plant.* In the event the Santa Ana Regional Water Quality Control Board orders City to remedy an increase in the TDS limit for City's wastewater treatment plant that the Parties agree has been caused by conditions derived by the activities associated with this Agreement, Valley District shall take any or all of the actions identified in subparagraphs a-c above until water quality has returned to acceptable levels. Additionally, Valley District and City will work together to resolve the condition with the Santa Ana Regional Water Quality Control Board identify a solution to the condition, and fund an appropriate solution.

7. *Natural Disaster or Civil Unrest.* In the event that the Texas Grove Reservoir suffers from substantial damage due to natural disaster (e.g., earthquake, flooding or otherwise) or due to civil unrest (e.g., rioting, terrorist attack, or otherwise), neither Party shall be obliged to rebuild/reconstruct the Texas Grove Reservoir in its current configuration or to its current capacity. Instead, the Parties shall promptly meet and confer, determine a rebuilding plan/configuration that is reasonable and financially feasible under the

circumstances at the time, and then rebuild/reconstruct the Texas Grove Reservoir as quickly as practicable.

8. *Termination of Agreement.* Either Party may terminate this Agreement, with or without cause, by providing written notice of termination to the other Party at least one year prior to the conclusion of the then-current term of this Agreement. Valley District's purchase of storage rights at, or above, elevation 1338.9 feet MSL NGVD shall survive termination of this Agreement and, after termination, Valley District may use its storage rights by supplying water available to Valley District from any source. In the event that Valley District has not completed its delivery of Exchange Water to City as required by paragraph 5b above, that obligation shall survive any termination of this Agreement.

9. *Indemnification.* Each Party shall defend and indemnify the other Party and the other Party's elected officials, officers, employees, agents and authorized volunteers from and against all claims, demands, or liability for damages arising out of the Party's performance of the terms of this Agreement where such liability is caused or claimed or alleged to be caused by the willful misconduct, sole negligence or active negligence of the Party or any person or organization for whom or which the Party is legally liable.

   In particular, Valley District shall defend and indemnify City's elected officials, officers, employees, agents and authorized volunteers for any and all claims, demands or liability arising from: (i) Valley District or its contractors' construction of the Central Feeder; (ii) the movement of groundwater contaminants due to the spreading of Exchange Water by Valley District and increased pumping; or (iii) a reduction in static groundwater levels due to extraction of water by City for delivery to Valley District.

   The provisions of this Section 9 shall survive any termination of this Agreement.

10. *Administration of Agreement*

   a. *Workers' Compensation.* Each Party certifies that it is aware of the provisions of section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code and each Party shall comply with such provisions before commencing the performance of any work under this Agreement. Each Party and any contractors or subcontractors shall keep workers' compensation insurance for their employees in effect during all work covered by this Agreement. Upon request, each Party shall provide the other with the certificate required by Labor Code section 3700.

   b. *Books and Records.* Each Party shall have access to and the right to examine the other Party's pertinent books, documents, papers or other records (including, without limitation, records contained on electronic media) relating to the performance of that Party's obligations pursuant to this Agreement. The Parties

shall each retain all such books, documents, papers or other records to facilitate such review. Access to each Party's books and records shall be during normal business hours only. Nothing in this paragraph shall be construed to operate as a waiver of any applicable privileges.

c. *Disputes*. The Parties recognize there may be disputes regarding the obligations of the Parties or the interpretation of this Agreement. The Parties agree they may attempt to resolve disputes as follows:

(1) *Statement Describing Alleged Violation of Agreement.* A Party alleging a violation of this Agreement (the "**Initiating Party**") shall provide a written statement describing all facts it believes constitute a violation of this Agreement to the Party alleged to have violated the terms of this Agreement (the "**Responding Party**").

(2) *Response to Statement of Alleged Violation.* The Responding Party shall have sixty calendar days from the date of the written statement to prepare a written response to the allegation of a violation of this Agreement and serve that response on the Initiating Party or to cure the alleged violation to the reasonable satisfaction of the Initiating Party. The Initiating Party and the Responding Party shall then meet within thirty calendar days of the date of the response to attempt to resolve the dispute amicably.

(3) *Mediation of Dispute.* If the Initiating Party and the Responding Party cannot resolve the dispute within ninety calendar days of the date of the written response, they shall engage a mediator, experienced in water-related disputes, to attempt to resolve the dispute. Each Party shall ensure that it is represented at the mediation by an employee of such Party. These representatives of the Initiating Party and the Responding Party may consult with staff and/or technical consultants during the mediation and such staff and/or technical consultants may be present during the mediation. The costs of the mediator shall be borne by the unsuccessful Party.

(4) *Reservation of Rights.* Nothing in this paragraph 10c shall require a Party to comply with the dispute resolution process contained herein, and each Party retains and may exercise at any time all legal and equitable rights and remedies it may have to enforce the terms of this Agreement.

11. *CEQA Compliance.*

The Parties have determined that, because the activities contemplated under the terms of this Agreement involve the cooperative use of existing facilities within the capacity of those

facilities and within the limits established by existing regulations, the implementation of this Agreement is exempt from environmental review pursuant to Title 14, section 15301 of the Code of California Regulations. Within five business days of the Effective Date of this Agreement, the Parties will file a Notice of Exemption with the County Clerk for the County of San Bernardino, which Notice is attached hereto as Exhibit "D" and incorporated herein by reference.

12. *General Provisions.*

a. *Authority*. Each signatory of this Agreement represents that he is authorized to execute this Agreement on behalf of the Party for which he signs. Each Party represents that it has legal authority to enter into this Agreement and to perform all obligations under this Agreement.

b. *Amendment*. This Agreement may be amended or modified only by a written instrument executed by each of the Parties to this Agreement.

c. *Jurisdiction and Venue*. This Agreement shall be governed by and construed in accordance with the laws of the state of California, except for its conflicts of law rules. Any suit, action, or proceeding brought under the scope of this Agreement shall be brought and maintained to the extent allowed by law in the County of San Bernardino, California.

d. *Headings*. The paragraph headings used in this Agreement are intended for convenience only and shall not be used in interpreting this Agreement or in determining any of the rights or obligations of the Parties to this Agreement.

e. *Construction and Interpretation*. This Agreement has been arrived at through negotiations and each Party has had a full and fair opportunity to revise the terms of this Agreement. As a result, the normal rule of construction that any ambiguities are to be resolved against the drafting Party shall not apply in the construction or interpretation of this Agreement.

f. *Entire Agreement*. This Agreement constitutes the entire agreement of the Parties with respect to the subject matter of this Agreement and supersedes any prior oral or written agreement, understanding, or representation relating to the subject matter of this Agreement.

g. *Partial Invalidity*. If, after the Effective Date of this Agreement, any provision of this Agreement is held to be illegal, invalid, or unenforceable under present or future laws effective during the term of this Agreement, such provision shall be fully severable. However, in lieu thereof, there shall be added a provision as similar in terms to such illegal, invalid or unenforceable provision as may be possible and be legal, valid and enforceable.

h. *Successors and Assigns*. This Agreement shall be binding on and inure to the benefit of the successors and assigns of the respective Parties to this Agreement. No Party may assign its interests in or obligations under this Agreement without the written consent of the other Party, which consent shall not be unreasonably withheld or delayed.

i. *Waivers*. Waiver of any breach or default hereunder shall not constitute a continuing waiver or a waiver of any subsequent breach either of the same or of another provision of this Agreement and forbearance to enforce one or more of the remedies provided in this Agreement shall not be deemed to be a waiver of that remedy.

j. *Attorneys' Fees and Costs*. The prevailing Party in any litigation or other action to enforce or interpret this Agreement shall be entitled to reasonable attorneys' fees (including fees for use of in-house counsel by a Party), expert witnesses' fees, costs of suit, and other necessary disbursements in addition to any other relief deemed appropriate by a court of competent jurisdiction.

k. *Necessary Actions*. Each Party agrees to execute and deliver additional documents and instruments and to take any additional actions as may be reasonably required to carry out the purposes of this Agreement.

l. *Representations and Warranties.* Each representation and warranty contained herein or made pursuant hereto shall be deemed to be material and to have been relied upon and shall survive the execution, delivery and termination of this Agreement.

m. *Compliance with Law*. In performing their respective obligations under this Agreement, the Parties shall comply with and conform to all applicable laws, rules, regulations and ordinances.

n. *Third Party Beneficiaries*. This Agreement shall not create any right or interest in any non-Party or in any member of the public as a third party beneficiary.

o. *Counterparts*. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original, but all of which together shall constitute but one and the same instrument.

p. *Notices*. All notices, requests, demands or other communications required or permitted under this Agreement shall be in writing unless provided otherwise in this Agreement and shall be deemed to have been duly given and received on: (i) the date of service if served personally or served by facsimile transmission on the Party to whom notice is to be given at the address(es) provided below, (ii) on the first day after mailing, if mailed by Federal Express, U.S. Express Mail, or other

similar overnight courier service, postage prepaid, and addressed as provided below, or (iii) on the third day after mailing if mailed to the Party to whom notice is to be given by first class mail, registered or certified, postage prepaid, addressed as follows:

CITY OF REDLANDS:

City of Redlands
35 Cajon Street
Redlands, CA 92373
(909) 798-7533
(909) 798-7535 (FAX)
Attn: Municipal Utilities and Engineering Director

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT:

San Bernardino Valley Municipal Water District
380 East Vanderbilt Way
San Bernardino, CA 92408
(909) 387-9211
(909) 387-9247 (FAX)
Attn: General Manager

A Party may change its address for the receipt of notices by providing the other Party with notice of the same pursuant to this paragraph 12p.

CITY OF REDLANDS

By: _____
Pete Aguilar, Mayor

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By: _____
C. Patrick Milligan,
President, Board of Directors

ATTEST:

_____
Sam Irwin, City Clerk

Exhibit "A"
Facility Map

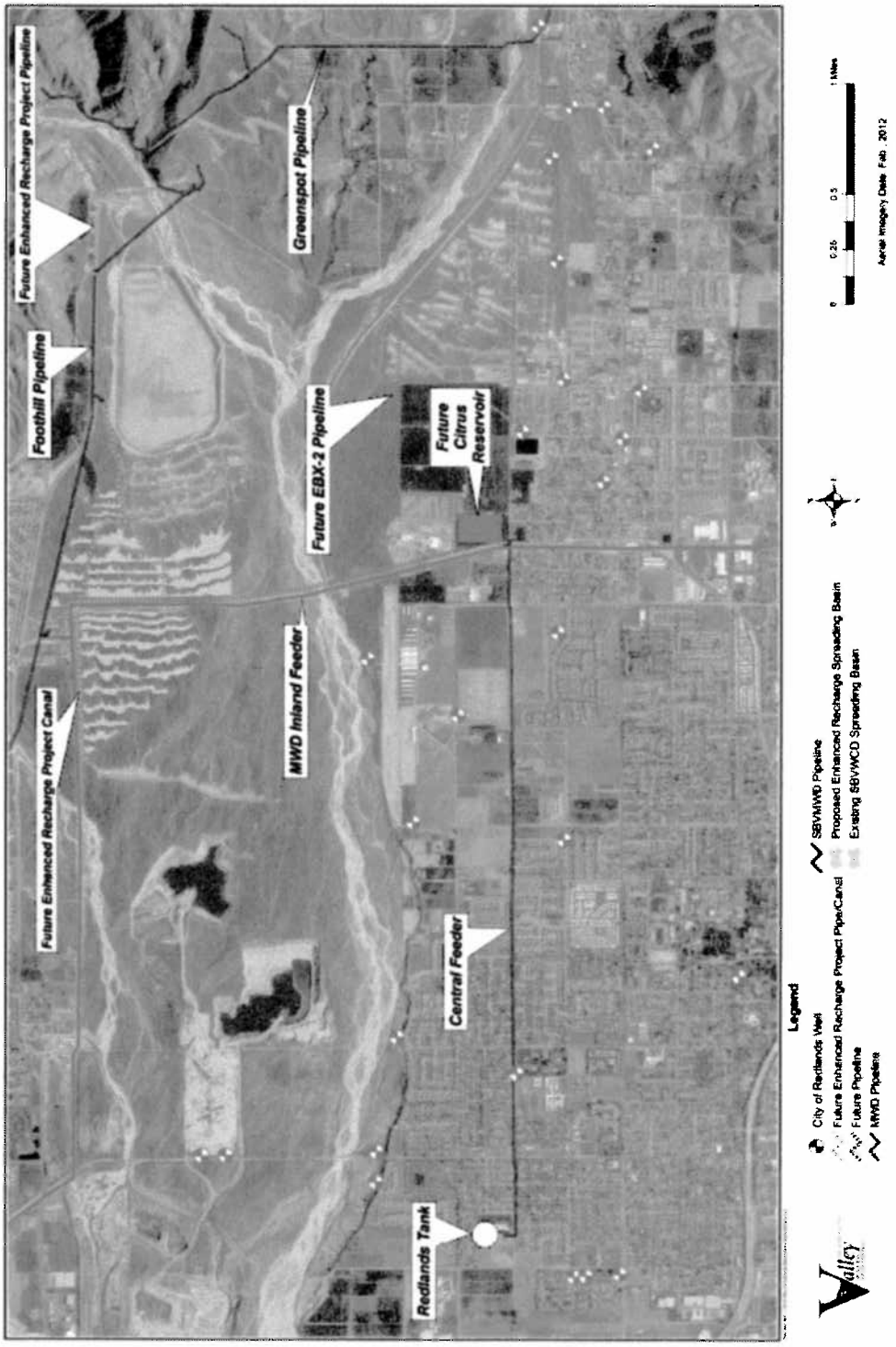

Exhibit "B"
Reimbursement Cost Calculations

CITY OF REDLANDS RESERVOIR #1 (TEXAS ST. RESERVOIR) CAPACITIES

AREA OF TANK

RADIUS	90.0 FT.	
PI	3.1416	
TOTAL AREA (AT) RAD*PI	25446.9 SQFT.	

HEIGHT OF WATER STORED IN TANK.

HIGH WATER SURFACE (H.W.S.)	1351.0 FT.	
BOTTOM OF TANK ELEVATION (TB)	1330.7 FT.	ELEVATION OF RING FOOTING
WATER HEIGHT (WC)	20.3 FT.	
VOLUME OF CONE (VC) VC=(PI*R^2*H)/3 R=90', H=1.0	8482.3 CUFT.	ACCOUNTS FOR VOLUME LOST DUE TO SLOPING TANK BOTTOM
MAX. WATER STORAGE CAPACITY ((AT*WC)-VC)	508853.2 CUFT.	
MAX. WATER STORAGE IN GALLONS	3806730.7 GAL.	7.481 GAL./CUFT.
MAX. USABLE STORAGE ((WC-1.0')*AT)	491888.6 CUFT	BOTTOM FOOT OF MAX. STORAGE IS NOT USABLE
MAX. USABLE STORAGE IN GALLONS (WSU)	3679818.5 GAL.	7.481 GAL./CUFT.

USABLE STORAGE FOR SBVMWD

H.W.S.	1351.0 FT.	
INVERT AT OUTLET OF STANDPIPE	1338.9 FT.	
MAXIMUM USABLE HEIGHT OF WATER (WU)	12.1 FT.	
SBVMWD USABLE STORAGE (AT*WU)	307907.5 CUFT.	
SBVMWD USABLE STORAGE IN GALLONS (WSV)	2303456.0 GAL.	7.481 GAL./CUFT.

COR USABLE STORAGE BELOW SBVWMD STORAGE

INVERT AT OUTLET OF STANDPIPE	1338.9 FT.	
HIGH POINT IN TANK = TB+1.0'	1331.7 FT.	
MAXIMUM USABLE HEIGHT OF WATER (WR)	7.2 FT.	
COR USABLE STORAGE (AT*WR)	183981.1 CUFT.	
COR USABLE STORAGE IN GALLONS (WSR)	1376362.5 GAL.	7.481 GAL./CUFT.

PERCENTAGE OF USABLE WATER STORAGE CALCULATED BY AGENCY

CITY OF REDLANDS	((WSR/WSU)*100%)	37.4%
SBVMWD	((WSV/WSU)*100%)	62.6%

Exhibit "C"

Operation Maintenance and Repair (OMR) shall be calculated as follows: total actual expenditures listed below (Expenditures), multiplied by the percent shown, divided by AF produced in City system multiplied by percent delivered to Valley District.

$$\frac{\text{Total Actual City Expenditures (\$)}}{\text{Total Production (acre-ft)}} \times (\%\ \text{Sold to Valley District}) = \$\_\_/\text{AF}$$

where,

Total Actual City Expenditures = 50% (4000* Salaries) + (4010 Overtime Salaries) + (4012 Stand By) + (5317 Service for Function Facility) + (5590 Street Repair) + 50% (5710_Special Contractual Services)

*Codes are from the City of Redlands Water Fund 501403

Exhibit "D"
Draft Notice of Exemption

Notice of Exemption

To: County Clerk
County of San Bernardino
222 W. Hospitality Lane
San Bernardino, CA 92415-0022

From:
San Bernardino Valley Municipal Water District
380 East Vanderbilt Way
San Bernardino, CA 92408

City of Redlands
35 Cajon Street
Redlands, CA 92373

Project Title: Agreement for Use of Water Facilities

Project Location - Specific: City of Redlands – Texas Grove Reservoir

Project Location - City: Redlands **Project Location - County:** San Bernardino

Description of Nature, Purpose and Beneficiaries of Project: The Project is an agreement between the San Bernardino Valley Municipal Water District ("Valley District") and the City of Redlands ("City") (collectively, the "Parties") providing for the cooperative use of existing water storage facilities and well capacity. Under the agreement, Valley District will purchase 2.3 million gallons of capacity in the City's existing Texas Grove Reservoir which is connected to Valley District's Redlands Pump Station that delivers water to Valley Districts Central Feeder Pipeline. Valley District will have an annual option of purchasing up to 20,000 acre-feet of existing well capacity to the extent such capacity is not needed by the City in any given year. The purpose of the Project is to postpone the need for Valley District to construct new water facilities in the area. The project involves the operation of existing facilities within existing limits established by applicable laws, regulations, agreements, and permits.

Name of Public Agency Approving Project: San Bernardino Valley Municipal Water District and City of Redlands

Name of Person or Agency Carrying Out Project: San Bernardino Valley Municipal Water District, City of Redlands

Exempt Status: *(check one)*

- ☐ Ministerial (Sec. 21080(b)(1); 15268);
- ☐ Declared Emergency (Sec. 21080(b)(3); 15269(a));
- ☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- ☒ Categorical Exemption. State type and section number: Sec. 15301, 15303
- ☐ Statutory Exemptions. State code number:

Reasons why project is exempt: The Project is categorically exempt under section 15301 of the CEQA Guidelines because it involves the operation of existing facilities within existing limits established by applicable laws, regulations, agreements, and permits. Valley District will make use of existing storage and well capacity not needed by the City, thus there will be no expansion of those facilities. The connection between the Reservoir and existing pipelines is categorically exempt under section 15301 as an addition to existing structures, and alternatively is categorically exempt under section 15303 as an extension of an existing pipeline of the length necessary to serve the Reservoir.

Lead Agency
Contact Person: Doug Headrick, General Manager **Area Code/Telephone/Extension:** (909) 387-9226

If filed by applicant:

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project? Yes No

Signature: Date: Title: General Manager

☒ Signed by Lead Agency Date received for filing at OPR:

☐ Signed by Applicant

1298299.1

DATE FILED & POSTED
#43633

Notice of Exemption

To: County Clerk
County of San Bernardino
222 W. Hospitality Lane
San Bernardino, CA 92415-0022

From:
San Bernardino Valley Municipal Water District
380 East Vanderbilt Way
San Bernardino, CA 92408

City of Redlands
35 Cajon Street
Redlands, CA 92373

CLERK OF THE BOARD
APR 09 2013
COUNTY OF
SAN BERNARDINO

Project Title: Agreement for Use of Water Facilities

Project Location - Specific: City of Redlands – Texas Grove Reservoir

Project Location - City: Redlands **Project Location - County:** San Bernardino

Description of Nature, Purpose and Beneficiaries of Project: The Project is an agreement between the San Bernardino Valley Municipal Water District ("Valley District") and the City of Redlands ("City") (collectively, the "Parties") providing for the cooperative use of existing water storage facilities and well capacity. Under the agreement, Valley District will purchase 2.3 million gallons of capacity in the City's existing Texas Grove Reservoir which is connected to Valley District's Redlands Pump Station that delivers water to Valley Districts Central Feeder Pipeline. Valley District will have an annual option of purchasing up to 20,000 acre-feet of existing well capacity to the extent such capacity is not needed by the City in any given year. The purpose of the Project is to postpone the need for Valley District to construct new water facilities in the area. The project involves the operation of existing facilities within existing limits established by applicable laws, regulations, agreements, and permits.

Name of Public Agency Approving Project: San Bernardino Valley Municipal Water District and City of Redlands

Name of Person or Agency Carrying Out Project: San Bernardino Valley Municipal Water District, City of Redlands

Exempt Status: *(check one)*

- ☐ Ministerial (Sec. 21080(b)(1); 15268);
- ☐ Declared Emergency (Sec. 21080(b)(3); 15269(a));
- ☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- ☒ Categorical Exemption. State type and section number: Sec. 15301, 15303
- ☐ Statutory Exemptions. State code number:

Reasons why project is exempt: The Project is categorically exempt under section 15301 of the CEQA Guidelines because it involves the operation of existing facilities within existing limits established by applicable laws, regulations, agreements, and permits. Valley District will make use of existing storage and well capacity not needed by the City, thus there will be no expansion of those facilities. The connection between the Reservoir and existing pipelines is categorically exempt under section 15301 as an addition to existing structures, and alternatively is categorically exempt under section 15303 as an extension of an existing pipeline of the length necessary to serve the Reservoir.

Lead Agency
Contact Person: Douglas Headrick, General Manager
Area Code/Telephone/Extension: (909) 387-9226

If filed by applicant:

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project? Yes No

Signature: Douglas Headrick Date: 4/8/13 Title: General Manager

☒ Signed by Lead Agency
☐ Signed by Applicant

Date received for filing at OPR:

1298299.1

State of California—Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE

2013 ENVIRONMENTAL FILING FEE CASH RECEIPT

RECEIPT# 438331

STATE CLEARING HOUSE # *(If applicable)*

SEE INSTRUCTIONS ON REVERSE. TYPE OR PRINT CLEARLY

LEAD AGENCY: San Bernardino Valley Municipal Water District
DATE: 4/9/13
COUNTY/STATE AGENCY OF FILING: San Bernardino County
DOCUMENT NUMBER:
PROJECT TITLE: Agreement for Use of Water Facilities + City of Redlands
PROJECT APPLICANT NAME: San Bernardino Valley Municipal Water District
PHONE NUMBER: (909) 387-9226
PROJECT APPLICANT ADDRESS: 380 East Vanderbilt Way
CITY: San Bernardino
STATE: CA
ZIP CODE: 92408

PROJECT APPLICANT *(Check appropriate box):*

☒ Local Public Agency ☐ School District ☐ Other Special District ☐ State Agency ☐ Private Entity

CHECK APPLICABLE FEES:

☐ Environmental Impact Report (EIR)	$2,995.25	$
☐ Mitigated/Negative Declaration (ND)(MND)	$2,156.25	$
☐ Application Fee Water Diversion *(State Water Resources Control Board Only)*	$850.00	$
☐ Projects Subject to Certified Regulatory Programs (CRP)	$1,018.50	$
☑ County Administrative Fee	$50.00	$ 50.00
☑ Project that is exempt from fees		
☑ Notice of Exemption		
☐ DFW No Effect Determination (Form Attached)		
☐ Other _____		$ 0

PAYMENT METHOD: 3960103

☐ Cash ☐ Credit ☑ Check ☐ Other _____ TOTAL RECEIVED $ 50.00

SIGNATURE: X [signature]
TITLE: [signature]

WHITE - PROJECT APPLICANT YELLOW - DFW/ASB PINK - LEAD AGENCY GOLDEN ROD - COUNTY CLERK DFG 753.5a (Rev. 11/12)

San Bernardino Valley Municipal Water District

396103

CLERK OF THE BOARD 6600 · TAXES & LICENSES	NOTICE OF EXEMPTION TEXAS GROVE RESERVOIR	4/8/2013	50.00

CLERK OF THE BOARD OF SUPERVISORS
13 APR -9 PM 1:21
COUNTY OF SAN BERNARDINO
CALIFORNIA

CHECKING 50.00

San Bernardino Valley Municipal Water District

396103

CLERK OF THE BOARD 6600 · TAXES & LICENSES	NOTICE OF EXEMPTION TEXAS GROVE RESERVOIR	4/8/2013	50.00

CHECKING 50.00

PRODUCT SSLT104 USE WITH 91663 ENVELOPE MCBEE To Reorder: 1-800-662-2331 or www.mcbeeinc.com

2013 AGREEMENT REGARDING ADDITIONAL EXTRACTIONS OF NEW CONSERVATION WATER FROM THE SAN BERNARDINO BASIN AREA BETWEEN WESTERN MUNICIPAL WATER DISTRICT OF RIVERSIDE COUNTY AND SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

SBVMWD LEGAL
DOCUMENT 2402

2013 AGREEMENT REGARDING ADDITIONAL EXTRACTIONS OF NEW CONSERVATION WATER FROM THE SAN BERNARDINO BASIN AREA

This Agreement is entered into between San Bernardino Valley Municipal Water District ("Valley District") and Western Municipal Water District of Riverside County ("Western") on July 17, 2013.

RECITALS

A. Western and Valley District are parties to the Judgment in the case of *Western Municipal Water District of Riverside County v. East San Bernardino County Water District, et al.*, Riverside Superior Court No. 78426 ("Western Judgment" or "Judgment").

B. The Judgment is administered and enforced by a Watermaster, consisting of a committee of two persons, one representative nominated by Valley District, and one by Western.

C. The Judgment further implements the physical solution in the related Orange County Water District action, as well as determines the rights of the named Plaintiffs to extract water from the San Bernardino Basin Area ("SBBA"), and provide replenishment of the area above Riverside Narrows. Among other provisions, the Judgment provides that the annual "adjusted right" of each Plaintiff to extract and export water from the SBBA is the sum of (a) its base right, which was adjusted based on a determination of safe yield and is currently expressed as a percentage of safe yield; and (b) an equal percentage of any new conservation, provided the conditions described in the Judgment are met. Similarly, the Judgment provides that Valley District shall provide imported water for replenishment of the SBBA at least equal to the amount by which extractions in any five year period exceed the 1959-1963 "base period" extractions (such amount was reduced based on a determination of safe yield and may be increased by the amount of any new conservation).

D. "New Conservation" is defined in the Judgment as "[a]ny increase in replenishment from natural precipitation which results from operation of works and facilities not now in existence, other than those works installed and operations which may be initiated to offset losses caused by increased flood control channelization."

E. The Seven Oaks Dam is a component of the Santa Ana River Mainstem Project and was originally conceived as a way to address anticipated flooding on the Santa Ana River. In addition to providing flood control benefits and related incidental water conservation, Western and Valley District wished to formally include water conservation as an element of the facility. In 1991, Western and Valley District jointly filed an application to appropriate water conserved as part of the Seven Oaks project. The State Water Resources Control Board approved the application and issued permits to Western and Valley District in 2010.

F. Construction on the Dam began in the mid 1990s. Western, Valley District and Plaintiffs in the above-referenced action agreed to a methodology for participation in the project and a cost sharing formula pursuant to Paragraph VI(b)2 of the Judgment. Based on the cost sharing formula, Western, Valley District and Plaintiffs entered cost sharing agreements to study the feasibility of water conservation and to fund the physical improvements necessary to achieve water conservation in connection with the operation of the Dam.

G. The acquisition of the water rights permit and the related infrastructure improvements allow Western and Valley District to fully utilize water conserved by the project for replenishment of the SBBA.

H. As part of the 1991-2010 water rights permitting process, Western and Valley District developed models and other analytical tools to forecast hydrology and calculate water conservation. Over the last 2 years, a collaborative group of stakeholders has been meeting to further develop the models and procedures necessary to forecast long-term average New Conservation.

I. In addition to utilizing the recently-developed models and analytical tools to project future long-term average New Conservation, Watermaster has utilized the models and analytical tools to calculate the amount of New Conservation that occurred from 1998 through 2012. Watermaster was previously unable to calculate such New Conservation because the models and analytical tools were still being developed.

J. Consistent with the Judgment and cost-sharing agreements, Plaintiffs have paid their proportionate share of New Conservation-related costs through December 31, 2012 and are therefore entitled to the benefits associated with their allocated share of New Conservation that occurred from 1998 through 2012 due to operation of the Dam.

K. The Judgment does not provide a mechanism by which to allocate New Conservation retroactively. However, Paragraph VI(b)6 of the Judgment provides that Western and Valley District may enter into agreements providing for additional extractions from the SBBA. Western and Valley District have utilized Paragraph VI(b)6 in the past to allow additional extractions from the SBBA.

L. In addition, Western, Valley District and the City of Riverside are parties to an "Agreement Relating to the Diversion of Water from the Santa Ana River System" ("Diversion Agreement") dated March 20, 2007, wherein the parties acknowledge that water conservation in the SBBA associated with the operation of Seven Oaks Dam may cause adverse impacts on the Riverside Basin. The parties agreed that one method of mitigating such adverse impacts was to provide for additional Plaintiff extractions in the SBBA in an amount equal to the amount of replenishment in the SBBA that would have occurred in the Riverside Basin in the absence of the Seven Oaks Project, in exchange for a like amount of reduction in extractions in the Riverside Basin near the key wells used to measure Valley District's compliance with the Judgment objectives

M. Parties to the Diversion Agreement also agreed to implement an accounting methodology under the Western Judgment that will allow Plaintiffs to fully utilize their water

rights in the SBBA. In conjunction with this Agreement, the full use of such water rights could be facilitated by amending the August 18, 2004 Paragraph VI(b)6 agreement entitled "Western Replenishment and Extraction Agreement" which would allow Plaintiffs, in any year in which their entitlement was not fully used, to return any amount of water up to the amount of imported water previously acquired from Western.

N. The primary purpose of this Agreement is to provide for additional extractions of water from the SBBA by Plaintiffs and users within Valley District without replenishment by Valley District in amounts equal to the amount of New Conservation determined by Watermaster to have occurred from 1998 through 2012 due to operation of the Dam. As to future New Conservation associated with the operation of the Dam, Watermaster will utilize Paragraph VI(b)1, VI(b)2, and VI(c) to account for such New Conservation, as provided herein. In addition, another purpose of this Agreement is to ensure implementation of specific provisions of the 2007 Diversion Agreement related to New Conservation, as referenced in Recitals L and M, above.

O. Although the Judgment does not require court approval of Paragraph VI(b)6 agreements, the parties have historically sought court approval of such agreements.

NOW, THEREFORE, in consideration of the mutual covenants of the parties, and based upon the recitals above, IT IS HEREBY AGREED TO AS FOLLOWS:

1. Definition of Additional Extractions. As used herein, the term "additional extractions" means any extraction of water by Plaintiffs in the above-referenced action in excess of the amounts permitted by the Judgment; with respect to entities other than Plaintiffs in such action, the term means any extractions in excess of the total amount of water that can be produced from the SBBA without any replenishment obligation. No replenishment obligations shall be incurred on account of any additional extractions made pursuant to this Agreement.

2. Amount of Additional Extractions. Watermaster has determined that the total quantity of New Conservation resulting from operation of the Seven Oaks Dam for the period of 1998 through 2012 is 42,840 acre-feet. Consistent with the Judgment, such amount may be extracted by Plaintiffs and non-plaintiff entities producing water within the SBBA as additional extractions pursuant to this Agreement.

3. Allocation of Additional Extractions to Plaintiffs. Plaintiffs may make additional extractions from the SBBA for use within Western in any future year in the aggregate amount of 11,974 AF, or 27.95% of the 1998-2012 New Conservation water. Such amount shall be allocated among individual Plaintiffs as follows:

a.	City of Riverside	9,635 AF
b.	Meeks and Daley Water Co.	1,448 AF
c.	Riverside Highland Water Co.	793 AF
d.	Regents of University of California	98 AF

Such individual allocations are in proportion to Plaintiffs' respective shares of the safe yield of the SBBA.

4. Allocation of Additional Extractions to Other Entities. Entities in San Bernardino County other than Plaintiffs who produce water within the SBBA may make additional extractions from the SBBA in any future year in the amount of 30,866 AF, or 72.05% of the 1998-2012 New Conservation water.

5. Periodic Changes in Paragraph VI(b) and VI(c) Allowable Extractions. Periodically Watermaster shall consider making changes in:

(a) the portion of Plaintiffs' "adjusted right" related to New Conservation determined pursuant to Paragraph VI(b); and

(b) the New Conservation to which users in Valley District are entitled pursuant to Paragraph VI(c).

Such periodic consideration and any resulting changes shall be made to ensure that over a long-term period, equal to or greater than the number of years used to forecast the average amount of New Conservation, the amount of New Conservation allowed to be extracted is the same as it would have been if the New Conservation had been made available to Plaintiffs and users within Valley District each year in amounts equal to the actual amount of conserved water that is replenished. Any change shall be made prospectively in order to ensure that such change does not result in a change or reconciliation of a prior year "adjusted right" for Plaintiffs or an amount of New Conservation available for use by users within Valley District.

Periodic consideration of changes in the allowable extractions related to New Conservation shall occur for the duration of the forecast period at intervals of not less than five years nor more than ten years. The periodic consideration of change in the long-term average increase in allowable extractions related to New Conservation shall account for physical improvements in storage, diversion or recharge capability that may result in an increase in the forecast of the long-term average amount of New Conservation; and prospectively account for changes in the long-term forecast that arise from annual determinations of actual New Conservation and/or improvements in the data base and the analytical tools and procedures used to forecast New Conservation.

6. Paragraph VI(b) Service Area Delivery Limitations. The service area delivery limitations provided in Paragraphs V and VI of the Western Judgment shall not apply to New Conservation.

7. Assignment. Any Plaintiff may assign all or a portion of that Plaintiff's right to make additional extractions, as provided in Paragraph 3 herein, to any other Plaintiff.

8. Potential Reductions in Additional Extractions. If at any time prior to the extraction of all additional extractions pursuant to this Agreement Watermaster determines that New Conservation that occurred from 1998-2012 is causing a decrease in the natural safe yield of the SBBA by increasing subsurface outflow or rejecting native recharge that would have

occurred in the absence of Seven Oaks Dam, then Watermaster shall reduce the then-remaining amount of additional extractions provided for in Paragraph 2 and the subsequent amounts allocated to Plaintiffs and Valley District in Paragraphs 3 and 4 by an amount equal to the increase in subsurface outflow or rejected native recharge.

9. Annual Reports. Watermaster shall exclude any additional extractions under this Agreement from extractions in the Annual Report Tables 3A through 3D showing extractions by Plaintiffs. Watermaster shall also exclude additional extractions by entities other than Plaintiffs from the determination of extractions in Table 2 of the Annual Report.

10. Riverside Basin Mitigation Account. Any amount of replenishment in the SBBA resulting from the operation of Seven Oaks Dam and related diversion and spreading facilities that, in the absence of such operation, would have been replenished in the Riverside Basin, shall not be considered New Conservation and shall not be allocated for use by Plaintiffs and users within Valley District and shall instead be included in a Riverside Basin Mitigation Account. Watermaster shall maintain a record of the amount of water in the Riverside Basin Mitigation Account. Western shall maintain in force an agreement with the City of Riverside that provides for the City to increase extractions from its wells in the SBBA by a specified amount and reduce extractions from its Flume Tract wells in the Riverside Basin by the same amount. The agreement shall provide that such change in the location of extractions is subject to the following:

(a) Western and Valley District will jointly determine the specified amount of the change in extractions and the time period for such change; and

(b) The City of Riverside will change the location of extractions as determined by Western and Valley District unless Riverside is unable to do so because of physical or prior contractual constraints.

Watermaster shall account for the required extractions from the SBBA as additional extractions pursuant to Section 9 of this agreement and shall include the amount of the additional SBBA extractions as an extraction by the City of Riverside from Riverside North in the Annual Report Table 5.

11. Amendment to the Paragraph VI(b)6 Western Replenishment and Extraction Agreement. Paragraph 5 of the "Western Replenishment and Extraction Agreement" dated August 18, 2004 is hereby amended to also provide that, "Any Plaintiff at its option may assign and transfer to Western an amount of water equal to its unused water right in the SBBA in any year provided the aggregate amount of such transfers may not exceed the Plaintiffs aggregate amount of previously transferred right to extract imported water pursuant to this paragraph."

Date: July 16, 2013

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By: _____
President

By: _____
Secretary

WESTERN MUNICIPAL WATER DISTRICT OF RIVERSIDE COUNTY

By: _____
President

By: _____
Secretary

APPROVED AS TO FORM:

By: _____
Jill N. Willis
Best Best & Krieger

By: _____
David R. E. Aladjem
Downey Brand LLP

DEPARTMENT OF PUBLIC WORKS

FLOOD CONTROL • LAND DEVELOPMENT & CONSTRUCTION • OPERATIONS
SOLID WASTE MANAGEMENT • SURVEYOR • TRANSPORTATION

COUNTY OF SAN BERNARDINO

825 East Third Street • San Bernardino, CA 92415-0835 • (909) 387-8104
Fax (909) 387-8130

GERRY NEWCOMBE
Director of Public Works

July 26, 2013

Mr. C. Patrick Mulligan, President
Board of Directors
San Bernardino Valley Municipal Water District
380 East Vanderbilt Way
San Bernardino, CA 92408

Re: **PLANNING MEMORANDUM OF UNDERSTANDING BETWEEN THE SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT AND THE SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT – AGREEMENT NO. 13-608**

Dear Mr. Mulligan:

Please find enclosed the executed copy of the above-referenced agreement which was approved, by the Board of Supervisors on behalf of the San Bernardino County Flood Control District on July 23, 2013, for your records.

If you have any questions, please contact Kenneth Eke at (909) 387-8120

Sincerely,

D Stuetz for

KENNETH C. EKE, P.E., Chief
Flood Control Planning Division

KE:dja

Enclosure

cc: Front File
Reading File

SBVMWD LEGAL
DOCUMENT **2404**

GREGORY C. DEVEREAUX
Chief Executive Officer

Board of Supervisors
ROBERT A. LOVINGOOD ..... First District
JANICE RUTHERFORD ..... Second District
JOSIE GONZALES ..... Fifth District
JAMES RAMOS ..... Third District
GARY C. OVITT ..... Fourth District

REPORT/RECOMMENDATION TO THE BOARD OF SUPERVISORS OF THE SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT AND RECORD OF ACTION

July 23, 2013

FROM: **GERRY NEWCOMBE, Director**
Flood Control District

SUBJECT: **PLANNING MEMORANDUM OF UNDERSTANDING BETWEEN THE SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT AND THE SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT**

RECOMMENDATION(S)

Acting as the governing body of the San Bernardino County Flood Control District, approve a ten year Planning Memorandum of Understanding **(Agreement No. 13-608)** between the San Bernardino County Flood Control District and the San Bernardino Valley Municipal Water District for the purpose of working together in the planning and evaluation of San Bernardino County Flood Control District facilities for joint use by the San Bernardino County Flood Control District and the San Bernardino Valley Municipal Water District for both flood control and groundwater replenishment operations.
(Presenter: Gerry Newcombe, Director, 387-7906)

BOARD OF SUPERVISORS COUNTY GOALS AND OBJECTIVES

Pursue County Goals and Objectives by Working with Other Public Agencies.
Implement the Countywide Vision.

FINANCIAL IMPACT

Approval of this item will not result in the use of Discretionary General Funding (Net County Cost). The Planning Memorandum of Understanding (MOU) does not commit the San Bernardino County Flood Control District (FCD) to any expenditure other than staff time which has been accounted for in the 2013-14 budget. Site specific agreements may be brought to the Board of Supervisors at a later date that will contain provisions bringing revenue to FCD.

BACKGROUND INFORMATION

Approval of this item will authorize FCD to enter into an MOU with the San Bernardino Valley Municipal Water District (Valley District) to work cooperatively in the planning and evaluation of the possible joint use of FCD's facilities for both flood control and groundwater replenishment operations. The MOU does not bind FCD to any project. Any proposed use of FCD properties by Valley District that originates from this MOU is at the sole discretion of FCD.

cc: Flood Control-Eke w/agreement & Newcombe
Contractor c/o Flood Control w/agreement
Auditor-Controller/Treasurer/Tax Collector-Accounts Payable Manager w/agreement
EBIX-BPO c/o Risk Management
CAO-Nelson & Olhasso
File - w/agreement
ml 07/25/13
ITEM 42

Rev 7-1-13

Record of Action of the Board of Supervisors

APPROVED (CONSENT CALENDAR)
COUNTY OF SAN BERNARDINO
County Flood Control District

MOTION	AYE	AYE	SECOND	MOVE	AYE
	1	2	3	4	5

LAURA H. WELCH, CLERK OF THE BOARD

BY _____

DATED: July 23, 2013

FCD owns and operates a number of flood control facilities within Valley District's operational boundaries. Valley District and FCD first entered into a cooperative agreement for Valley District to deliver water to several FCD detention basins for purposes of recharging the groundwater basin in 1972, and both agencies have continued to cooperatively use these facilities ever since. Valley District is now interested in expanding the number of facilities used in this effort, in addition to upgrading the facilities currently used, in order to maximize the amount of water recharge performed while acknowledging the primary goal of FCD facilities is to maintain adequate flood protection for the safety and protection of the public. FCD and Valley District wish to jointly explore the opportunities to use existing flood control basins and perhaps other facilities owned by either party, for the combined purposes of adequate flood control and useful and beneficial water replenishment operations. The MOU establishes the framework for FCD and Valley District to work together to plan and evaluate the environmental, operational and financial impacts of such combined use of their facilities. The MOU does not authorize or guarantee any specific project and the parties will comply with the California Environmental Quality Act (CEQA) prior to approving any specific project. Any future use of a facility shall be subject to the parties' approval of a site specific agreement. The MOU remains in effect for a term of ten years and provides that the parties may agree to extend the MOU for subsequent ten-year periods. Either party may terminate the MOU prior to its expiration date, but only if there is cause (e.g. breach of the agreement), and after providing the other party a 60-day written notice and opportunity to cure.

REVIEW BY OTHERS

This item has been reviewed by County Counsel (Scott Runyan, Deputy County Counsel, 387-5455) on June 28, 2013, County Administrative Office (Cory Nelson, Administrative Analyst, 387-4378) on July 1, 2013, and Finance and Administration (Mary Jane Olhasso, Assistant Executive Officer, 387-4599) on July 8, 2013.

FOR OFFICIAL USE ONLY

ORIGINAL

San Bernardino County Flood Control District

F A S

CONTRACT TRANSMITTAL

☒ New ☐ Change ☐ Cancel	FAS Vendor Code	SC	Dept.	A	Contract Number 13-608
ePro Vendor Number					ePro Contract Number
Flood Control District		Dept. 094	Orgn. 094		Contractor's License No.
Contract Representative: Kenneth C. Eke, Chief, FC Planning Division		Telephone: 909-387-8120			Total Contract Amount

Contract Type: ☐ Revenue ☐ Encumbered ☐ Unencumbered ☒ Other: Grant

If not encumbered or revenue contract type, provide reason:

Commodity Code	Contract Start Date	Contract End Date	Original Amount	Amendment Amount
			$	

Fund	Dept.	Organization	Appr.	Obj/Rev Source	GRC/PROJ/JOB No.	Amount
RFL	093	093			F02481	
RFF	092	092			F02482	

Project Name: PLANNING MOU SBVMWD

Estimated Payment Total by Fiscal Year

FY	Amount	I/D	FY	Amount	I/D
FY 13/14					

CONTRACTOR San Bernardino Valley Municipal Water District

Federal ID No. or Social Security No.

Contractor's Representative C. Patrick Mulligan, President, Board of Directors

Address 380 East Vanderbilt Way, San Bernardino, CA 92408 Phone 909-387-9200

Nature of Contract: Planning Memorandum of Understanding (MOU) between the San Bernardino County Flood Control District (FCD) and the San Bernardino Valley Municipal Water District (Valley District) to work cooperatively in the planning and evaluation of the possible joint use of FCD's facilities for both flood control and groundwater replenishment operations.

Approved as to Legal Form (sign in blue ink)	Reviewed as to Contract Compliance	Presented to Board for Signature
► Counsel	►	►
Date 7-19-13	Date 7/22/13	Date 7/22/13

(Attach this transmittal to all contracts not prepared on the "Standard Contract" form.

Auditor-Controller/Treasurer/Tax Collector Use Only

☐ Contract Database	☐ FAS
Input Date	Keyed By

Revised 03/22/2012

Planning Memorandum of Understanding
San Bernardino County Flood Control District (FCD) and
San Bernardino Valley Municipal Water District (Valley District)

1. *Recitals*

a. WHEREAS, the FCD was created by the San Bernardino County Flood Control Act of 1939, found in Chapter 43 of the California Water Code Appendix (Flood Control Act), and its primary statutory objects and purposes are to provide for the control of flood and storm waters and secondarily to conserve such flood and storm waters, and other waters, for beneficial uses in FCD's district area by spreading, storing, retaining, and through percolation.

b. WHEREAS, Valley District was formed in 1954 as a regional agency formed to plan a long-range water supply for the San Bernardino Valley and it imports water into its service area from the State Water Project and manages groundwater storage within its boundaries.

c. WHEREAS, FCD owns and operates a number of flood control facilities within Valley District's boundaries.

d. WHEREAS, Valley District and FCD first entered into a cooperative agreement for Valley District to deliver water to FCD detention basins for purposes of recharging the groundwater basin in 1972, and Valley District and FCD have continued to cooperatively use these facilities ever since.

e. WHEREAS, Valley District is interested in continuing to cooperatively use FCD's flood control facilities to promote groundwater recharge while acknowledging the primary goal of FCD facilities to maintain adequate flood protection for the safety and protection of the public.

f. WHEREAS, as a general matter, FCD and Valley District wish to jointly explore the opportunities to use existing flood control basins (and perhaps other facilities owned by either party) for the combined purposes of adequate flood control and useful and beneficial water replenishment operations.

g. WHEREAS, FCD and Valley District wish to enter into this Planning Memorandum of Understanding (MOU) to describe in general terms their interests in coordinating their efforts to plan and evaluate the environmental and financial impacts of such combined use of FCD's facilities.

h. WHEREAS, as provided herein, this MOU does not authorize nor guarantee any specific project and the parties will comply with the California Environmental Quality Act (CEQA) prior to approving any specific project.

NOW, THEREFORE, it is mutually agreed as follows:

2. *Understandings*

a. *Priorities*

i. The parties recognize that flood control is a higher, better and more necessary public use of the property and facilities owned by the FCD pursuant to the Flood Control Act and other state and federal law. This MOU shall be subject to the paramount legal duties and obligations of FCD pursuant to the Flood Control Act.

ii. The FCD shall have the sole discretionary authority to determine what constitutes "adequate flood protection" for the operation of its facilities.

iii. FCD shall have the sole discretionary authority to determine which of its facilities are available for use in re-charge activities proposed by the Valley District. Any future use of a FCD facility shall be subject to the parties' approval of a site specific agreement.

iv. Based on the priorities and discretion provided in this Section 2.a., "Priorities", as well as the general planning nature of this MOU, FCD and Valley District acknowledge and agree that no implied covenants attach to this agreement, including, but not limited to, the implied covenant of good faith and fair dealing.

b. *Term*

This MOU shall have a term of 10 years from the date on which the last party executes this MOU. This MOU may be extended by the parties for subsequent 10-year periods, subject to approval by both parties.

c. *General Planning Efforts*

i. Once a specific plan is initiated by Valley District for the specific use of a particular flood control facility, the parties agree to allocate sufficient staff time and resources to evaluate the joint use/operation of that existing facility for adequate flood control purposes in conjunction with water replenishment. Valley District shall provide to FCD all of the details associated with the proposed use for each FCD facility including, but not limited to, any proposed improvements (including a statement as to which entity will own the improvements after a project specific agreement terminates) and a proposed operational plan for each FCD facility. This information will also include the amount of estimated recharge for both

native stormwater and State Water Project water (if any), or other sources of water, for each facility, and quality of such water.

ii. The joint evaluation may consider replenishment with both native water and water from the State Water Project or other sources and shall also consider the potential effects of groundwater replenishment to the environment, including, but not limited to, an evaluation of whether such activities will introduce water quality pollutants or mobilize existing groundwater contamination, or will cause land subsidence, liquefaction, or seepage to low lying lands in any basin to be impacted by the replenishment activities of Valley District. The parties acknowledge that Valley District will be the agency primarily leading this evaluation as it has the appropriate expertise concerning groundwater storage and the quality of waters from sources such as the State Water Project. FCD will independently review Valley District's evaluation.

iii. Considering the statutory purposes of the FCD and the goals of Valley District, both parties agree that they will determine, on a case by case basis, which agency will be in charge of seeking permits for projects and which agency will be the "Lead Agency" for purposes of complying with CEQA.

iv. Valley District will work cooperatively with FCD towards Valley District's goal of maximizing the quantity of water that can be replenished annually from the existing flood control basins, while maintaining or improving the protection of the public from the dangers of flooding. In general, FCD will not object to Valley District's use of FCD's fee owned properties or the modification of existing flood control basins that are owned in fee by FCD by means of the installation of dual-purpose facilities, *provided* that: (i) Valley District is responsible for all regulatory and other costs associated with said activities, and (ii) the incremental cost of those modifications is paid by Valley District, and (iii) FCD reviews and is satisfied with the individual circumstances surrounding the proposed project and the existing flood control facility. Nothing in this paragraph is intended to alter the sole discretionary authority of the FCD concerning the uses of its facilities.

v. The parties will also collaborate with other local, state and federal agencies with regulatory authority over these activities, including, but not limited to, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, the California Regional Water Quality Control Board, the California Department of Fish and Wildlife and any others.

vi. Valley District agrees to pay a reasonable use fee for the use of the FCD's land and facilities as agreed to by both parties on a case by case basis.

vii. Valley District acknowledges and agrees that future project specific agreements with FCD will include indemnification and insurance provisions developed by FCD's counsel and FCD's Risk Management Department that adequately protect FCD from any and all claims, actions, losses, and damages arising out of the water conservation and replenishment activities described in this MOU. The parties agree that such indemnification and insurance provisions will be negotiated in consideration of the individual circumstances surrounding each existing flood control facility on a case-by-case basis.

viii. Valley District acknowledges and agrees that future project specific agreements with FCD will also require FCD permits.

3. *General Provisions*

a. *Early Termination.* Either party may terminate this agreement prior to its expiration date for cause, *provided* that it has provided 60-day written notice and opportunity to cure to the other party prior to termination.

b. *Recitals Incorporated Herein.* The parties agree and acknowledge that the recitals set forth above are true and correct and are fully incorporated in this MOU.

c. *Non-Exclusive Agreement.* Nothing in this MOU shall prevent either party from working cooperatively with other individuals, public agencies or private organizations to improve flood protection or groundwater recharge within that party's respective jurisdiction.

d. *Authority.* Each signatory of this MOU represents that he/she is authorized to execute this MOU on behalf of the party for which he/she signs. Each party represents that it has legal authority to enter into this MOU and to perform all obligations under this MOU.

e. *Amendment.* This MOU may be amended or modified only by a written instrument executed by each of the parties to this MOU.

f. *Jurisdiction and Venue.* This MOU shall be governed by and construed in accordance with the laws of the state of California, except for its conflicts of law rules. Any suit, action, or proceeding brought under the scope of this MOU shall be brought and maintained to the extent allowed by law in the County of San Bernardino, California.

g. *Headings*. The paragraph headings used in this MOU are intended for convenience only and shall not be used in interpreting this MOU or in determining any of the rights or obligations of the parties to this MOU.

h. *Construction and Interpretation*. This MOU has been arrived at through negotiations and each party has had a full and fair opportunity to revise the terms of this MOU. As a result, the normal rule of construction that any ambiguities are to be resolved against the drafting party shall not apply in the construction or interpretation of this MOU.

i. *Entire Agreement*. This MOU constitutes the entire agreement of the parties with respect to the subject matter of this MOU and supersedes any prior oral or written agreement, understanding, or representation relating to the subject matter of this MOU.

j. *Attorneys' Fees and Costs*. Regardless of whether it is the prevailing party in any litigation or other action to enforce or interpret this MOU, each party shall bear its own attorneys' and expert witnesses' fees, costs of suit and other necessary disbursements. This paragraph shall not apply to the costs or attorney(s) fees relative to Section 3.p., "Indemnification and Insurance."

k. *Necessary Actions*. Each party agrees to execute and deliver additional documents and instruments and to take any additional actions as may be reasonably required to carry out the purposes of this MOU.

l. *Third Party Beneficiaries*. This MOU shall not create any right or interest in any non-party or in any member of the public as a third party beneficiary.

m. *Counterparts*. This MOU may be executed in one or more counterparts, each of which shall be deemed to be an original, but all of which together shall constitute but one and the same instrument.

n. *Notices*. All notices, requests, demands or other communications required or permitted under this MOU shall be in writing unless provided otherwise in this MOU and shall be deemed to have been duly given and received on: (i) the date of service if served personally or served by facsimile transmission on the party to whom notice is to be given at the address(es) provided below, (ii) on the first day after mailing, if mailed by Federal Express, U.S. Express Mail, or other similar overnight courier service, postage prepaid, and addressed as provided below, or (iii) on the third day after mailing if mailed to the party to whom notice is to be given by first class mail, registered or certified, postage prepaid, addressed as follows:

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT

Director
Department of Public Works
County of San Bernardino
825 East Third Street
San Bernardino, California 92415
Telephone: (909) 387-7906
Facsimile: (909) 387-7911

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

General Manager
San Bernardino Valley Municipal Water District
380 East Vanderbilt Way
San Bernardino, California 92408
Telephone: (909) 387-9200
Facsimile: (909) 387-9247

o. *Assignment.* This MOU may not be assigned by either party without the written consent of the other party.

p. *Indemnification and Insurance.* FCD agrees to indemnify, defend (with counsel approved by Valley District) and hold harmless Valley District, its employees, officers, agents, and volunteers from any and all claims, actions, losses, damages, and/or liability resulting from FCD's negligent acts or omissions which arise from FCD's performance of its obligations under this MOU. Valley District agrees to indemnify, defend (with counsel approved by FCD) and hold harmless the FCD, its employees, officers, agents, and volunteers from any and all claims, actions, losses, damages, and/or liability resulting from the Valley District's negligent acts or omissions which arise from the Valley District's performance of its obligations under this MOU. In the event, FCD and/or Valley District is found to be comparatively at fault for any claim, action, loss or damage which results from their respective obligations under this MOU, FCD and/or Valley District shall indemnify the other to the extent of its comparative fault. FCD and Valley District shall maintain throughout the term of this MOU such policies of insurance or legally sufficient self-insurance for Professional Liability (as applicable), Automobile Liability, Comprehensive General Liability, and Workers' Compensation that are adequate to protect against all liabilities and indemnification responsibilities arising out of the performance of the terms, conditions or obligations of this MOU.

IN WITNESS WHEREOF, the parties have caused this MOU to be executed by their duly authorized officers or representatives as of the last day and year appearing below.

---------- **Signatures on Following Page** ----------

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By: _____
C. Patrick Milligan
President, Board of Directors

Date: 7-16-13

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT

By: _____
Janice Rutherford, Chair, Board of Supervisors

Date: JUL 23 2013

ATTEST:

By: _____
Clerk

SIGNED AND CERTIFIED THAT A COPY OF THIS CONTRACT HAS BEEN DELIVERED TO THE CHAIRMAN OF THE BOARD

Laura H. Welch
Clerk of the Board of Supervisors
of the County of San Bernardino

By: _____
Dep

APPROVED AS TO FORM:
SPECIAL DISTRICT COUNSEL

By: _____
David R.E. Aladjem
Special Counsel

Date: 7/18/13

APPROVED AS TO FORM:
COUNTY COUNSEL

By: _____
Scott Runyan
Deputy County Counsel

Date: 7-19-13

AMENDMENT TO AGREEMENT TO FORM THE UPPER SANTA ANA RIVER WASH LAND MANAGEMENT AND HABITAT CONSERVATION PLAN TASK FORCE

THIS AMENDMENT TO AGREEMENT TO FORM THE UPPER SANTA ANA RIVER WASH LAND MANAGEMENT AND HABITAT CONSERVATION PLAN TASK FORCE ("Amendment") is made effective this 1st day of September, 2013, by and between the following entities (hereinafter individually referred to as a "Party" and collectively referred to as the "Parties"):

CEMEX CONSTRUCTION MATERIALS, LP ("CEMEX")

CITY OF HIGHLAND ("HIGHLAND")

CITY OF REDLANDS ("REDLANDS")

COUNTY OF SAN BERNARDINO ("SAN BERNARDINO COUNTY")

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT ("SBVWCD" OR "CONSERVATION DISTRICT")

ROBERTSON'S READY MIX, LTD ("ROBERTSON'S")

EAST VALLEY WATER DISTRICT ("EVWD")

REDLANDS MUNICIPAL UTILITIES AND ENGINEERING DEPARTMENT ("RMUED")

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT ("SBCFCD")

UNITED STATES BUREAU OF LAND MANAGEMENT ("BLM")

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT ("VALLEY DISTRICT")

RECITALS

This Amendment is entered into on the basis of the following facts, understandings, and intentions of the Parties:

A. All Parties hereto, except Valley District, entered into that certain "Agreement to Form the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan Task Force" on November 20, 2002 ("Original Agreement"), for the purposes of advancing environmental planning and permitting in connection with the Upper Santa Ana River Wash Land Management Plan ("Wash Plan").

B. Since the time the Original Agreement was entered into, planning for the Wash Plan has advanced in all phases, including with respect to groundwater recharge and other water conservation facilities. In connection with such facilities, Conservation District and Valley District have entered into a series of agreements to allow for joint use

of Conservation District property, and construction of additional facilities as part of an Enhanced Recharge Program with Valley District, to fulfill various of the Wash Plan objectives regarding expanded groundwater recharge and water conservation capabilities.

C. The Original Agreement provided, in paragraph 2 (G), that all Parties acknowledged and agreed that the effectiveness of the Task Force may be improved by the addition of other entities that had interest in the work of the Task Force, and given Valley District's intended role in contributing to expanding groundwater recharge facilities in the Wash Plan area, Valley District is such an entity.

D. At a Task Force meeting held July 16, 2013, the Task Force reviewed cost estimates for the completion of environmental review and permitting activities for the Wash Plan, and the individual members will be going to their respective governing bodies for funding authorization for the completion of such environmental review and permitting activities. In addition, the Task Force has refined its description of covered activities to be included within the "take" and other permitting authorizations proposed to be pursued, such that the Wash Plan process is now at a point where responsible estimates for long-term habitat maintenance and other costs can be generated, and an equitable distribution of such costs over parties sponsoring, or benefitting from, component projects of the overall Wash Plan can be determined.

E. The Parties therefore wish to amend the Original Agreement to add Valley District as a regular member of the Task Force, and to specify their going-forward intentions for additional consultations for deriving an equitable cost-sharing allocation for the costs that may be incurred by the Task Force members for implementation of the Habitat Conservation Plan and other permanent funding requirements that may attend final Wash Plan approval.

NOW, THEREFORE, the Parties do hereby agree as follows:

1. Valley District is, and henceforth shall be, a "Regular Member" of the Task Force under Section 2 (A) of the Original Agreement. Valley District shall pay a one-time fee into the Fund (provided in Section 5 (C) of the Task Force Agreement) of $275,000.00. Such amount shall be utilized by the Conservation District, as Project Manager, to help offset the Conservation District's share of interim and estimated costs of completion of the environmental and permitting documentation for the Wash Plan. The Task Force at its meeting on July 16, 2013 approved estimated costs for planning and consulting services.

2. The Parties agree to meet and confer, in order to rework the contribution levels specified in Exhibit "B-1" to the Original Agreement, for those expenses that will be required of the Task Force members for costs for implementation of the Habitat Conservation Plan and other implementation funding requirements that may attend final Wash Plan approval. As presently contemplated, the basis for the allocation of such implementation costs shall be allocated on a proportionate acreage basis as it relates to the habitat disturbances attributable to the portions of the

component projects of the Wash Plan advanced by, sponsored by, or benefitting Task Force members, with offsetting credit being given to the amount of habitat as acreage being contributed by various Task Force members. The Task Force will refine such costs allocations once the PAR analysis and final permitting costs are more fully determined.

3. Except as specifically amended herein, the Original Agreement remains in full force and effect.

IN WITNESS WHEREOF, the Parties hereto have entered into the Amendment as of the day and year first set forth above.

APPROVED AS TO FORM:

_____
Counsel for CEMEX

CEMEX CONSTRUCTION MATERIALS, LP

_____

APPROVED AS TO FORM:

_____
Counsel for Robertson's Ready Mix, Ltd.

ROBERTSON'S READY MIX, LTD.

_____

UNITED STATES BUREAU OF LAND MANAGEMENT

_____
Field Manager

APPROVED AS TO FORM:

_____
General Counsel

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT

_____
President, Board of Directors

Attest: _____
Secretary of the Board

APPROVED AS TO FORM:

_____
General Counsel

EAST VALLEY WATER DISTRICT

_____
President, Board of Directors

Attest: _____
Secretary of the Board

[SIGNATURES CONTINUED ON FOLLOWING PAGE]

APPROVED AS TO FORM:

_____
City Attorney

REDLANDS MUNICIPAL UTILITIES AND ENGINEERING DEPARTMENT

_____
Mayor

Attest: _____
City Clerk

APPROVED AS TO FORM:

_____
County Counsel

COUNTY OF SAN BERNARDINO

_____
Chairperson, Board of Supervisors

Attest: _____
Clerk of the Board

APPROVED AS TO FORM:

_____
General Counsel

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT

_____
Chairperson, Board of Supervisors

Attest: _____
Clerk of the Board

APPROVED AS TO FORM:

_____
City Attorney

CITY OF REDLANDS

_____
Mayor

Attest: _____
City Clerk

APPROVED AS TO FORM:

_____
City Attorney

CITY OF HIGHLAND

_____
Mayor

Attest: _____
City Clerk

[SIGNATURES CONTINUED ON FOLLOWING PAGE]

APPROVED AS TO FORM:

General Counsel

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

President, Board of Directors

Attest:

Secretary, Board of Directors

AGREEMENT TO FORM THE UPPER SANTA ANA RIVER WASH LAND MANAGEMENT AND HABITAT CONSERVATION PLAN TASK FORCE

THIS AGREEMENT is made effective this 20TH day of NOV, 2002, by and between the following entities (hereinafter individually referred to as a "Party" and collectively referred to as the "Parties"):

CEMEX CONSTRUCTION MATERIALS, LP ("CEMEX")

[CITY OF HIGHLAND ("HIGHLAND")]

CITY OF REDLANDS ("REDLANDS")

COUNTY OF SAN BERNARDINO ("SAN BERNARDINO COUNTY")

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT ("SBVWCD" OR "CONSERVATION DISTRICT")

ROBERTSON'S READY MIX, LTD ("ROBERTSON'S")

EAST VALLEY WATER DISTRICT ("EVWD")

REDLANDS UTILITIES DEPARTMENT ("RUD")

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT ("SBCFCD")

UNITED STATES BUREAU OF LAND MANAGEMENT ("BLM")

RECITALS

This Agreement is entered into on the basis of the following facts, understandings, and intentions of the Parties:

A. Representatives of numerous agencies, including water, mining, flood control, resource management and conservation, and municipalities, formed the Santa Ana River Wash Area Coordinating Planning Activities Committee ("Wash Committee") to address local mining issues and other land functions on the Upper Santa Ana River Wash ("Wash"). A Policy Action Committee ("PAC") was subsequently established, consisting of elected officials from San Bernardino County, Highland, Redlands, and the Conservation District, as well as the Field Manager of the BLM. A Technical Advisory Committee ("TAC") was also formed with representatives from the PAC agencies, and other water, mining, flood control, and resource protection interests.

B. The Wash Committee examined the most appropriate manner in which to use the Wash for the benefit of all landowners without regard to preexisting planning of the Wash or current land ownership. Ultimately, the Wash Committee determined that there should be a balance of land uses to accommodate the needs of mineral extraction, water conservation, habitat protection, and municipal infrastructure

requirements (i.e. utilities, trails, etc.). To achieve land use balance, current land uses must be reassigned to better accommodate mineral extraction, water conservation, and habitat. To effect such change, an exchange of existing land ownership between BLM and the Conservation District, and a transfer of leasehold interests between the mining companies and the Conservation District will be required.

C. The TAC reached a general consensus in early 2000 regarding the designation of specific areas of the Wash for the desired uses. The result of this multi-jurisdictional effort was the creation of a proposed Land Management and Habitat Conservation Plan for the Upper Santa Ana River Wash ("Concept Plan"). The Concept Plan establishes the framework for balancing ongoing and future land activities proposed for the Wash Planning Area ("WPA"), including habitat protection areas and recreational trail alignments. The Concept Plan was reviewed and endorsed by the governing boards and/or officials with approval authority from each of the Parties, and various other agencies involved in the deliberations on the Concept Plan.

D. Each of the Parties have found and determined that it is in their best interests to join together to: manage activities in connection with the necessary refinements, environmental review, and implementation of the Land Management and Habitat Conservation Plan (collectively the "Project"); provide an equitable cost-sharing mechanism for the funding of the Project; and, define the projected schedule and scope of work to execute the Project.

E. The Parties hereto now enter into this Agreement to establish a Task Force, consisting of a representative from each party, to oversee and administer the preparation of plans, environmental review documents, public notices and hearings, and other activities requisite to the formulation and, if adopted, execution of the Project.

F. In entering into this Agreement, the Parties reserve their discretionary authority with regard to the execution of the Project, including but not limited to, any land use and planning authority under state and local law, authority, designated under the Surface and Mining Recovery Act ("SMARA"), and CEQA approval of their own discretionary decisions executing the Project.

TERMS & CONDITIONS

SECTION 1: DESCRIPTION OF PROJECT.

The Project to be undertaken by the Task Force consists of all of the following:

A. Refinement and expansion of the Concept Plan (Exhibit "A") to develop the Component Plans of a "Land Management and Habitat Conservation Plan for the Upper Santa Ana River Wash" ("Plan"), which includes the following:

1. A Mining and Reclamation Plan under the Surface Mining and Reclamation Act ("SMARA") designating the areas as generally depicted in Exhibit "A" to be devoted to sand, gravel, and mineral extraction and the terms and conditions under which such extraction may proceed, which will be provided by CEMEX and

Robertson's to the appropriate municipality, Highland or Redlands, for review and approval;

2. A Water Conservation Plan, which describes the scope, extent, and location of water diversions, conveyance, spreading, and monitoring activities, which will be provided by the Conservation District;

3. A Recreation Plan, which coordinates the planning and development of trails, parks, and public recreation areas, which will be provided by Conservation District, San Bernardino County, and Redlands;

4. An Infrastructure Plan, which describes the location of pipelines, utility corridors, roads, highways, and communication facilities, which will be provided by the Conservation District, EVWD, and Redlands;

5. A Habitat Protection Plan, which will be provided by the Conservation District to identify habitat areas that may be considered to protect threatened and endangered species at such time as other activities within the Wash are presented to the appropriate agency for entitlements, approvals and /or land use permits; and

6. A Flood Control Plan, which describes flood control facilities/activities including detention and retention basins, drains, and storm water conveyance facilities, which will be provided by SBCFCD.

B. Preparation of preliminary documents necessary to conduct an environmental analysis, including the following:

1. A Project Description for the environmental analysis based on the Component Plans described above;

2. Alternative land balancing plans to be studied in the environmental analysis;

3. A plan outline, including actions, required funding, and the administrative or legislative measures needed to implement the Project, which will be known as the Implementation Action Plan; and

4. A draft agreement to execute the Implementation Action Plan, which will be known as the Implementation Agreement.

C. Preparation of an EIR/EIS for implementation of the Plan, including a mitigation monitoring plan, based on the Component Plans in 1.A. above, and the preliminary documents in 1.B. above.

D. Completion of a proposed land exchange between BLM and Conservation District. BLM, working with the Conservation District, shall undertake activities to assess, and if appropriate, implement by way of a Memorandum of Understanding or

other appropriate instrument with the Conservation District, a land exchange. The assessment and potential implementation of the land exchange will analyze whether portions of property currently owned by BLM can feasibly and beneficially be exchanged for portions of property owned by the Conservation District.

E. Preparation of the implementation documents based on the completed EIR/EIS, including the following:

1. A certification of the EIR and record of decision for the EIS;

2. An Implementation Action Plan; and

3. A Habitat Conservation Plan, including a programmatic Section 10a Take Permit.

F. Task Force submit the EIR/EIS, Implementation Action Plan, and Habitat Conservation Plan to the appropriate agencies for their action and, if adopted, subsequent implementation.

SECTION 2: CREATION OF THE TASK FORCE.

There is hereby created a task force that shall be known as the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan Task Force ("Wash Task Force" or "Task Force"). The Task Force shall oversee and direct preparation of the Project and shall be comprised of regular and advisory members as follows:

A. Regular Members.

Each Party who contributes financially to fund the Project in accordance with Exhibit "B" to this Agreement, as may be amended from time to time, or contributes with in-kind services that result in a product for use by the Task Force commensurate with the level of contribution identified in Exhibit "B," shall be deemed a Regular Member of the Task Force. Any dispute regarding whether "in-kind" services contributions by a Party entitles such Party to status as a Regular Member shall be submitted to all then-existing Task Force Regular Members, and will be decided by a majority vote of the Task Force Regular Members. Each Regular Member shall be entitled to appoint two (2) representatives to the Task Force concurrently with the execution of this Agreement. Each Regular Member shall appoint (1) representative to oversee and contribute to the technical/staff aspects of the Task Force's work, and one (1) member of the legislative body, Board of Directors, or other body with ultimate decision making and policy making authority for the Regular Member, who shall be the voting member of the Task Force. Notwithstanding that each Regular Member shall have two (2) representatives to the Task Force, each Regular Member shall have and exercise only one (1) vote. The identity of each of the appointed representatives from each respective Party shall be promptly communicated to the Project Manager. Appointed representatives to the Task Force shall serve at the pleasure of the governing body of the respective appointing Party, and may be removed by them at any time, with or without cause; provided, however, that the Parties acknowledge and agree the continuity of representation on the

Task Force is important to the overall effectiveness of the Task Force, and the Parties further agree to ensure such continuity whenever possible.

B. Advisory Members.

1. Any member of the TAC, which is not a Regular Member of the Task Force, and any other public or governmental agency, may with the approval of a majority of the Regular Members of the Task Force, designate representatives as non-voting advisors to the Task Force ("Advisory Members"). The Task Force will formally recognize these Advisory Members and ensure all materials and products of the Task Force are provided to the Advisory Members. A list of Advisory Members will be maintained by the Project Manager.

2. The California Department of Water Resources (DWR), the California Department of Fish and Game (DFG), and the United States Fish and Wildlife Service (USFWS), County of Orange, and the City of Highland are hereby designated as Advisory Members to the Task Force.

3. Advisory Members may be admitted as Regular Members, with voting privileges, with approval by a majority vote of Regular Members of the Task Force.

C. Function.

1. The Task Force shall oversee and direct the preparation of all of the component elements of the Project.

2. The Task Force shall assist in the selection of a consultant to assist in planning and implementing the Project ("Consultant"). The Consultant selected must be acceptable to the Federal lead agency.

3. The Task Force shall meet periodically for the purpose of reviewing and evaluating the work product of the Task Force and the Consultant.

4. The Task Force shall administer this Agreement, subject to the reserved right of each of the Parties to approve their respective financial appropriations to Task Force budgets.

5. The Task Force shall propose contribution levels for each Party, subject to Section 4.D. herein. The contribution level for each Party shall initially be those set out in Exhibit "B" hereto.

6. The Task Force shall, in consultation with the Consultant, prepare and adopt a project schedule ("Project Schedule"). When completed, the Project Schedule will be circulated among all Regular and Advisory Members, and will be maintained by the Project Manager.

D. Committees.

The Task Force may establish working committees, which shall be designated from a pool of Regular and Advisory members who shall be selected by and serve at the pleasure of the Task Force.

E. Designation of Officers.

The Task Force shall designate and appoint one of its representatives to act as Chair and another of its members to act as Vice-Chair, both of which shall be selected from the pool of Regular Members. The Conservation District shall perform the functions of project administrator, including secretarial and treasurer duties.

F. Meetings

Regular meetings of the Task Force shall be held at the Conservation District offices, or such other place as may be agreed upon by the Task Force. At the first meeting, the Task Force shall provide for the time and place of its regular meetings. Special meetings may be called at the request of the Chair or of a majority of Regular Members to the Task Force. A majority of Regular Members of the Task Force shall constitute a quorum for the purposes of transacting business. Except as otherwise provided herein, all actions of the Task Force shall be passed and adopted upon the affirmative vote of a majority of the quorum of Regular Members. All meetings of the Task Force shall be conducted in accordance with California's Open Meeting Laws. The Project Manager shall keep or cause to be kept, minutes of the meetings of the Task Force, copies of which shall be forwarded to each Task Force representative and to each Party. The Task Force may adopt, from time to time, such additional rules and regulations for the conduct of its affairs as may be required.

G. Additional Parties.

The Parties to this Agreement acknowledge and agree that the effectiveness of the Task Force may be improved by the addition of other entities that have interest in the work of the Task Force. Such entities may join the Task Force upon approval of a majority of the Regular Members of the Task Force, and upon such terms and conditions as are acceptable to such Regular Members, including, but not limited to, cash contributions to past, present, and/or future work of the Task Force.

H. City of Highland as Regular Member.

At the time of execution of this Agreement, the City of Highland has expressed its interest in joining the Task Force as a Regular Member, and the parties to this Agreement contemplate and desire that it do so. Provided City of Highland approves and executes this Agreement within One Hundred Eighty (180) days of the Effective Date, and pays its share of the Task Force Contribution Levels as set forth in Exhibit "B-1," for application to all expenses incurred by the Task Force from the Effective Date and following, City of Highland may join the Task Force, as a Regular Member, without the necessity of an approving vote of the Regular Members. In the event City of

Highland so joins the Task Force pursuant to the terms and conditions of this Section 2 (H), and effective immediately and prospectively from the date it does, various provisions of this Agreement shall be thereupon automatically be amended, all as more specifically set out in Exhibit "D" hereto.

SECTION 3: LEAD AGENCY DESIGNATION

A. Consistent with the First Amendment to the Memorandum of Understanding Regarding Coordinated Planning Activities Pertaining to the Santa Ana River Wash Area dated August 13, 1997, ("MOU") and its designation of the Conservation District as the Permanent Chair of the Policy Action Committee, the Conservation District is hereby designated as the Lead Agency for all non-federal activities associated with the Project under the California Environmental Quality Act ("CEQA").

B. The BLM is hereby designated as the Lead Agency for all federal activities associated with the Project under the National Environmental Policy Act ("NEPA").

SECTION 4: PROJECT MANAGER.

A. The Conservation District shall serve as the Project Manager, at the pleasure of the Task Force. The Project Manager shall act as the primary liaison and contact between the Consultant, the Task Force, and the Parties to the Second Amendment.

B. The duties of the Project Manager shall include the following:

1. Serve as the Lead Agency under CEQA and as assistant to BLM, which is the Lead Agency under NEPA; provided, however, that on issues relating to definition of level of significance for impacts, existence of and mitigation for significant adverse environmental impacts, and formulation of a mitigation monitoring program for those portions of the Project which involve mining activity within the jurisdictional boundaries of Redlands, and which require permits under SMARA, the Project Manager shall accept and incorporate into the EIR/EIS the determinations of Redlands for such aspects of the Project.

2. Administer the cost-sharing formula, which designates the percentage of the total cost of the Project, as approved by each Party to fund the Project;

3. Coordinate communications between the Consultant and the Parties;

4. Provide the Consultant with copies of all earlier studies and EIRs, which may be helpful to the Consultant to complete the Project;

5. Gather and transmit data to the Consultant from the Parties;

6. Provide periodic reports to the Task Force of the progress of the Project;

7. Report to and solicit input from the Task Force regarding policy issues that may arise;

8. Oversee the billing for all aspects of the Project;

9. Receive and pay all appropriate invoices for the Consultant;

10. Review the Consultant's charges and advise the Task Force of any problems associated with the Project;

11. Facilitate meetings of the Task Force and maintain records of the Task Force;

12. The Project Manager shall, through a written Notice to Proceed, cause the Consultant to commence the Project, and shall cause the Consultant to perform all services within the time period(s) established in the Project Schedule, and in conformity with the approved Project Flow Diagram, attached hereto as Exhibit "C"; and,

13. Either approve or deny by way of written response any requests for minor adjustments to the time period(s) specified in the Project Schedule.

C. Administration of Task Force Work.

The Conservation District shall make its personnel available as reasonably necessary to the Task Force to perform the secretarial, clerical, administrative, legal general counsel, and financial management duties requested by the Task Force. The Task Force shall compensate the Conservation District for the Conservation District's actual costs incurred in providing such services to the Task Force, upon presentation of an invoice detailing the services rendered and costs thereof, and approval of the same by the Task Force.

SECTION 5: FUNDING MECHANISM.

A. The current estimated cost for the preparation of plans and environmental review for the Project is $823,258, or $973,258 if the consultant prepares the Implementation Agreement. The Task Force shall periodically approve a contribution amount to be requested of all Regular Members, to be paid to and managed by the Project Manager consistent with the provisions of this Section 4, from which the Project Manager will meet the expenses incurred in implementing the Project. Contributions shall be apportioned among the Parties, as agreed to by the Parties. The initial levels of contribution are identified in Exhibit "B" to this Agreement.

B. The Conservation District as Project Manager shall coordinate Consultant retention, direction, coordination, and oversight in the planning and implementation of

the Project, and shall serve as the agency through which funds are to be conveyed and disbursed for the purpose of completing the Project.

C. The Conservation District shall establish a fund ("Fund") into which it will cause to be deposited all of the contributions received from the Task Force towards the estimated cost of the Project. It is intended that this Fund finance the Project in its entirety. In establishing the Fund, the Conservation District shall assure that all interest earned by the Fund is to be paid into the Fund, and made solely available for the funding of the Project. The Task Force may from time to time propose a cost-sharing formula differing from that attached as Exhibit "B", which designates the percentage of the total cost of the Project each Party will be required to contribute to the Fund. Upon approval by the Task Force of a contribution amount to be requested of the Regular Members, the Project Manager shall submit invoices to each Party requesting payment of their respective contributions, pursuant to the formula attached as Exhibit "B," or as otherwise proposed by the Task Force. Payment of these invoices shall be made to the Conservation District within 30 days of receipt of such invoice. If any Regular Member fails to timely remit payment of its share of the invoices in accordance to Exhibit "B" to this Agreement, the voting rights of such Regular Member shall be suspended until such time as the full amount of the invoice is paid, or the final resolution of any dispute regarding the invoice, as provided below. During such period of suspension, the Party shall enjoy only those rights and privileges as an Advisory Member of the Task Force.

D. Each Party reserves the right to approve its own contribution level to the Project, as well as its ultimate payment authority of invoices issued by the Project Manager, in whole or in part, on a per-invoice basis.

E. The Project Manager shall have authority and control of disbursements from the Fund. The Project Manager shall provide the Task Force with an accounting on at least a quarterly basis showing all disbursements, accrued interest, and other debits and credits to the Fund for the preceding quarter. Any amounts paid to the Project Manager shall not be subject to refund, except as provided herein.

F. Should a dispute arise between the Project Manager and any Party(ies) with respect to either an invoice submitted by the Consultant or any other disbursement from the Fund, the complaining Party(ies) shall notify the Project Manager in writing, specifying the nature of the objections, the reasons therefor, and the action the complaining Party(ies) requests the Project Manager to take in resolution of the dispute. Upon receipt of any such written objection, the Project Manager shall meet or otherwise confer with the complaining Party(ies) in a good faith effort to resolve the dispute. In the event such efforts do not result in resolution of the dispute within ten (10) days of the Project Manager's receipt of the written objection, the Project Manager shall refer the matter to the Task Force, and shall provide it with any and all receipts, invoices, or other documents necessary for the prompt resolution of the dispute. The Task Force shall consider and resolve the matter at its next scheduled meeting, but no later than thirty (30) days following the Project Manager's referral of the dispute to the Task Force. In resolving the dispute, the decision of the majority of the Regular Members of the Task Force shall be final.

G. Upon completion of the Project, or earlier termination of this Agreement, any unexpended Funds shall be returned to the Parties in proportion to their financial contribution.

SECTION 6: OWNERSHIP OF DOCUMENTS.

All work produced in association with the Project (including originals prepared by anyone in connection with, or pertaining to, the work of the Task Force) shall become the property of the Regular Members of the Task Force, and each of them.

SECTION 7: INDEMNIFICATION.

Neither the Project Manager nor any officer or employee thereof shall be responsible to any other Party for any damage or liability occurring by reason of anything done, or omitted to be done, by the Consultant, or in connection with any work, authority or jurisdiction delegated to the Project Manager under this Agreement. All Parties, and each of them, hold the Project Manager harmless from any claim, demand, suit of law or equity, or other proceeding arising from or relating to the Project Manager's performance of its obligations contemplated by this Agreement. Nothing herein shall be read or understood as indemnifying or holding the Conservation District, or any officer or employee thereof, harmless from any claim, demand, suit on law or equity, or other proceeding arising from or relating from the acts or omissions of the Conservation District while acting as a Party to this Agreement.

In addition, each Party agrees to indemnify, defend, and hold harmless each other Party and its officers, employees, agents, and volunteers from any and all claims, actions, losses, damages, and/or liability arising out of its obligations under this Agreement.

In the event any Party is found to be comparatively at fault for any claim, action, or loss, or damage that results from their respective obligations under this Agreement, the Party(s) found to be at fault shall indemnify the other(s) to the extent of its comparative fault.

Federal agencies' obligations under this Agreement shall be to the extent permitted by the Federal Tort Claims Act.

SECTION 8: NOTICES.

All notices required to be provided hereunder, except meeting notices, shall be in writing, and either served personally or sent by United States Mail. Meeting notices may be provided by electronic mail correspondence. For these purposes, the addresses for the Parties and Advisory Members are as follows:

As to Cemex Construction Materials, LP:
Regional Environmental Manager
CEMEX
P.O. Box 4120
Ontario, CA 91761-1607

As to Robertson's Ready Mix:
Robertson's Ready Mix, Ltd.
Attention: Rich Robertson
P.O. Box 33140
Riverside, CA 92519

[As to Highland:
Community Development Director
City of Highland
27215 Base Line
Highland, CA 92346]

As to Redlands:
Community Development Director
City of Redlands
P.O. Box 3005
Redlands, CA 92373

As to SBCFCD:
Director
San Bernardino Co. Flood Control District
825 E. Third Street
San Bernardino, CA 92415-0835

As to Conservation District:
General Manager
San Bernardino Valley Water District
P.O. Box 1839
Redlands, CA 92373-0581

As to USFWS:
Field Supervisor
U.S. Fish & Wildlife Service
2730 Loker Avenue West
Carlsbad, CA 92008

As to County of Orange:
Attn: Mike Wellborn
Planning and Development Services
County of Orange
P.O. Box 4048
Santa Ana, CA 92702-4048

As to EVWD:
General Manager
East Valley Water District
P.O. Box 3427
San Bernardino, CA 92413

As to RUD:
Chief of Water Resources
Redlands Utilities Department
P.O. Box 3005
Redlands, CA 92373

As to San Bernardino County:
Land Use Services Department
Advance Planning Division
County of San Bernardino
385 North Arrowhead Avenue – 3rd Floor
San Bernardino, CA 92415-0182

As to BLM:
Field Manager, Palm Springs-South Coast
Field Office
Bureau of Land Management
P.O. Box 581260
North Palm Springs, CA 92258-1260

As to DFG:
Department of Fish & Game
P.O. Box 1217
Redlands, CA 92373

As to DWR:
Recreation and Environmental Studies
Department of Water Resources
770 Fairmont
Glendale, CA 91203

SECTION 9: ENTIRE AGREEMENT.

This Task Force Agreement contains the entire agreement of the Parties hereto with respect to the matters contained herein, and supersedes all negotiations, prior discussions, and preliminary agreements or understandings, written or oral relating to

the Task Force and Project Manager. No waiver or modification of this Agreement shall be binding unless consented to by all Parties in writing.

SECTION 10: WAIVER.

No waiver of any default shall constitute a waiver of any other default or breach, whether of the same or other covenant or condition. No waiver, benefit, privilege, or service voluntarily given or performed by a Party shall give the other Party any contractual rights by custom, estoppel, or otherwise.

SECTION 11: COOPERATION: FURTHER ACTS.

All parties agree to use reasonable care and diligence to perform their respective obligations under this Agreement. All parties agree to act in good faith to execute all instruments, prepare all documents, and take all actions as may be reasonably necessary, appropriate or convenient to carry out the purposes of this Agreement.

SECTION 12: GOVERNING LAW.

This Agreement shall be governed by and construed under the laws of the State of California. Federal agency participation under this Agreement, however, shall be governed by the applicable federal laws.

SECTION 13: ATTORNEYS' FEES.

In the event the Task Force initiates or defends any litigation or other judicial or administrative proceeding in connection with the Project or this Agreement, retention of counsel to represent the Task Force, if required, shall be by the Project Manager, subject to the approval of the Task Force. The costs of such retention will be invoiced to the members of the Task Force in the same manner, and subject to the same procedures, as all other consultant costs invoiced to the Task Force. In any action or proceeding involving a dispute between the Parties arising out of this Agreement, the prevailing Party shall be entitled to receive from the other Party, reasonable attorneys' fees. The term "attorneys' fees" shall include reasonable costs for investigating the action, conducting discovery, cost of appeal, costs and fees for expert witnesses, and all other normally allowable costs incurred in such litigation, whether or not such litigation is prosecuted to final judgment. Service of process on any Party shall be made in any manner permitted by law and shall be effective whether served inside or outside of California.

Notwithstanding the foregoing, attorneys' fees and costs' recoverable against the United States, however, shall be governed by applicable federal laws.

SECTION 14: NO THIRD PARTY BENEFICIARIES.

There are no intended third party beneficiaries of any right or obligation assumed by the Parties. No member of, or delegate to, Congress or Federal Resident

Commissioner, shall be entitled to any share of this Agreement, or to any benefit that may arise from it.

SECTION 15: CONSTRUCTION: CAPTIONS.

The language of this Agreement shall be construed according to its fair meaning, and not for or against any Party hereto based on authorship. The captions of the various articles and paragraphs are for convenience and ease of reference only, and do not define, limit, augment, or describe the scope, content, or intent of this Agreement.

SECTION 16: SEVERABILITY.

Each provision of this Agreement shall be severable from the whole. If any provision of this Memorandum shall be found contrary to law, it is the intention of all the Parties, and each of them, that the remainder of this Agreement shall continue in full force and effect.

SECTION 17: INCORPORATION OF RECITALS.

The Recitals are incorporated herein and made an operative part of this Agreement.

SECTION 18: AUTHORITY TO ENTER INTO AGREEMENT.

All Parties warrant that they have all requisite power and authority to execute and perform this Agreement. Each person executing this Agreement on behalf of their party warrants that he or she has the legal power, right, and authority to make this Agreement and bind his or her respective Party, and that in so doing, such Party is not thereby in breach of any other contract or agreement.

SECTION 19: COUNTERPARTS.

This Agreement may be signed in counterparts, each of which shall constitute an original.

SECTION 20: EFFECTIVE DATE

The Effective Date of this Agreement shall be latest of the dates set next to the signatures of the parties hereto evidencing signature by all the parties hereto, which latest date shall be inserted into the preamble to this Agreement.

SECTION 21: NO ASSIGNMENT.

The rights and obligations of this Agreement may not be transferred, assigned, or encumbered by any Party hereto without the prior, express, written consent of a majority of the Regular Members of the Task Force.

SECTION 22: DISSOLUTION.

The Task Force may be dissolved upon a 2/3 majority vote of the regular members. Upon such dissolution, the Project Manager is entitled to pay all outstanding invoices, and distribute any remaining money in the Fund among the contributing members pro-rata according to each Party's respective financial contribution.

SECTION 23: TERMINATION.

A. Any Party may voluntarily terminate its participation under the Agreement at any time upon delivery of at least 60 days prior written notice to the Task Force.

B. The Task Force may, upon a 2/3 majority vote, terminate any Party's participation under the Agreement upon that Party's failure to make its pro-rata contribution:

(1) Within 30 days of the date said Party's contribution becomes due; OR

(2) Within 45 days after the Task Force resolves said Party's dispute over the payment of an invoice in favor of payment as set forth in Section 4(F) of this Agreement.

C. Upon a Party's termination from participation under the Agreement, the Project Manager shall return the portion of that Party's pro-rata contribution not expended by the Project Manager after paying invoices for all charges incurred during the period that Party served as a Member of the Task Force.

D. The termination of any member or members of the Task Force shall not affect the remaining Parties' obligations under this Agreement, except for redistribution of contributions described herein. This Agreement shall remain in effect until such time as 2/3 of the regular members vote to dissolve the Task Force as provided by Section 22 of this Agreement.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF, the Parties hereto have entered into this Agreement as of the day and year set forth below, the last of which shall be the effective date of this Agreement.

APPROVED AS TO FORM:

Counsel for CEMEX

CEMEX CONSTRUCTION MATERIALS, LP, by CEMEX, Inc., its General Partner

APPROVED AS TO FORM:

Counsel for Robertson's Ready Mix, Ltd.

ROBERTSON'S READY MIX, LTD

UNITED STATES BUREAU OF LAND MANAGEMENT

Field Manager

APPROVED AS TO FORM:

General Counsel

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT

President, Board of Directors

Attest: _____
Secretary of the Board

APPROVED AS TO FORM:

General Counsel

EAST VALLEY WATER DISTRICT

President, Board of Directors

Attest: _____
Secretary of the Board

APPROVED AS TO FORM:

City Attorney

REDLANDS UTILITIES DEPARTMENT

Mayor

Attest: _____
City Clerk

IN WITNESS WHEREOF, the Parties hereto have entered into this Agreement as of the day and year set forth below, the last of which shall be the effective date of this Agreement.

APPROVED AS TO FORM:

_____
Counsel for CEMEX

CEMEX CONSTRUCTION MATERIALS, INC.:

_____

APPROVED AS TO FORM:

_____
Counsel for Robertson's Ready Mix, Ltd.

ROBERTSON'S READY MIX, LTD

_____

UNITED STATES BUREAU OF LAND MANAGEMENT

_____
Field Manager

APPROVED AS TO FORM:

_____
General Counsel

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT

_____
President, Board of Directors

Attest: _____
Secretary of the Board

APPROVED AS TO FORM:

_____
General Counsel

EAST VALLEY WATER DISTRICT

_____
President, Board of Directors

Attest: _____
Secretary of the Board

APPROVED AS TO FORM:

_____
City Attorney

REDLANDS UTILITIES DEPARTMENT

_____
Mayor

Attest: _____
City Clerk

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APPROVED AS TO FORM:

_____
Counsel for CEMEX

CEMEX CONSTRUCTION MATERIALS, INC.

_____

APPROVED AS TO FORM:

_____
Counsel for Robertson's Ready Mix, Ltd.

ROBERTSON'S READY MIX, LTD

_____

UNITED STATES BUREAU OF LAND MANAGEMENT

_____
Field Manager

APPROVED AS TO FORM:

_____
General Counsel

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT

_____
President, Board of Directors

Attest: _____
Secretary of the Board

APPROVED AS TO FORM:

_____
General Counsel

EAST VALLEY WATER DISTRICT

_____
President, Board of Directors

Attest: _____
Secretary of the Board

APPROVED AS TO FORM:

_____
City Attorney

REDLANDS UTILITIES DEPARTMENT

_____
Mayor

Attest: _____
City Clerk

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APPROVED AS TO FORM:

_____
Counsel for CEMEX

CEMEX CONSTRUCTION MATERIALS, INC.

_____

APPROVED AS TO FORM:

_____
Counsel for Robertson's Ready Mix, Ltd.

ROBERTSON'S READY MIX, LTD

_____

UNITED STATES BUREAU OF LAND MANAGEMENT

_____
Field Manager

APPROVED AS TO FORM:

David B. Cosper
General Counsel

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT

Sterling Woodbury
President, Board of Directors

Attest: Burnell Cawsey
Secretary of the Board

APPROVED AS TO FORM:

_____
General Counsel

EAST VALLEY WATER DISTRICT

_____
President, Board of Directors

Attest: _____
Secretary of the Board

APPROVED AS TO FORM:

_____
City Attorney

REDLANDS UTILITIES DEPARTMENT

_____
Mayor

Attest: _____
City Clerk

IN WITNESS WHEREOF, the Parties hereto have entered into this Agreement as of the day and year set forth below, the last of which shall be the effective date of this Agreement.

APPROVED AS TO FORM:

_____
Counsel for CEMEX

CEMEX CONSTRUCTION MATERIALS, LP

_____

APPROVED AS TO FORM:

_____
Counsel for Robertson's Ready Mix, Ltd.

ROBERTSON'S READY MIX, LTD

_____

UNITED STATES BUREAU OF LAND MANAGEMENT

_____
Field Manager

APPROVED AS TO FORM:

_____
General Counsel

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT

_____
President, Board of Directors

Attest: _____
Secretary of the Board

APPROVED AS TO FORM:

_____
General Counsel

EAST VALLEY WATER DISTRICT

Vice George E."Skip" Wilson
President, Board of Directors

Attest: Robert E. Martin
Secretary of the Board

APPROVED AS TO FORM:

_____
City Attorney

REDLANDS UTILITIES DEPARTMENT

_____
Mayor

Attest: _____
City Clerk

IN WITNESS WHEREOF, the Parties hereto have entered into this Agreement as of the day and year set forth below, the last of which shall be the effective date of this Agreement.

APPROVED AS TO FORM:

_____
Counsel for CEMEX

CEMEX CONSTRUCTION MATERIALS, LP

_____

APPROVED AS TO FORM:

_____
Counsel for Robertson's Ready Mix, Ltd.

ROBERTSON'S READY MIX, LTD

_____

UNITED STATES BUREAU OF LAND MANAGEMENT

_____
Field Manager

APPROVED AS TO FORM:

_____
General Counsel

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT

_____
President, Board of Directors

Attest: _____
Secretary of the Board

APPROVED AS TO FORM:

_____
General Counsel

EAST VALLEY WATER DISTRICT

_____
President, Board of Directors

Attest: _____
Secretary of the Board

APPROVED AS TO FORM:

N/A
_____
City Attorney

REDLANDS UTILITIES DEPARTMENT

_____
Mayor

Attest: _____
City Clerk

APPROVED AS TO FORM:

_____
County Counsel

COUNTY OF SAN BERNARDINO

_____
Chairperson, Board of Supervisors

Attest: _____
Clerk of the Board

APPROVED AS TO FORM:

_____
County Counsel

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT

_____
Chairperson, Board of Supervisors

Attest: _____
Clerk of the Board

APPROVED AS TO FORM:

_____
City Attorney

CITY OF REDLANDS

_____
Mayor

Attest: _____
City Clerk

[APPROVED AS TO FORM:]

[_____]
[City Attorney]

[CITY OF HIGHLAND]

[_____]
Mayor

[Attest: _____]
[City Clerk]

APPROVED AS TO FORM:

_____
County Counsel

COUNTY OF SAN BERNARDINO

_____
Chairperson, Board of Supervisors

Attest: _____
Clerk of the Board

APPROVED AS TO FORM:

_____
General Counsel

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT

_____
Chairperson, Board of Supervisors

Attest: _____
Clerk of the Board

APPROVED AS TO FORM:

N/A
City Attorney

CITY OF REDLANDS

_____
Mayor

Attest: _____
City Clerk

[APPROVED AS TO FORM:]

[_____]
[City Attorney]

[CITY OF HIGHLAND]

[_____]
[Mayor]

[Attest: _____]
[City Clerk]

APPROVED AS TO FORM:

_____
County Counsel

COUNTY OF SAN BERNARDINO

_____
Chairperson, Board of Supervisors

Attest: _____
Clerk of the Board

APPROVED AS TO FORM:

_____
General Counsel

SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT

_____
Chairperson, Board of Supervisors

Attest: _____
Clerk of the Board

APPROVED AS TO FORM:

_____
City Attorney

CITY OF REDLANDS

_____
Mayor

Attest: _____
City Clerk

[APPROVED AS TO FORM:]

[Marguerite P. Battin]
[City Attorney]

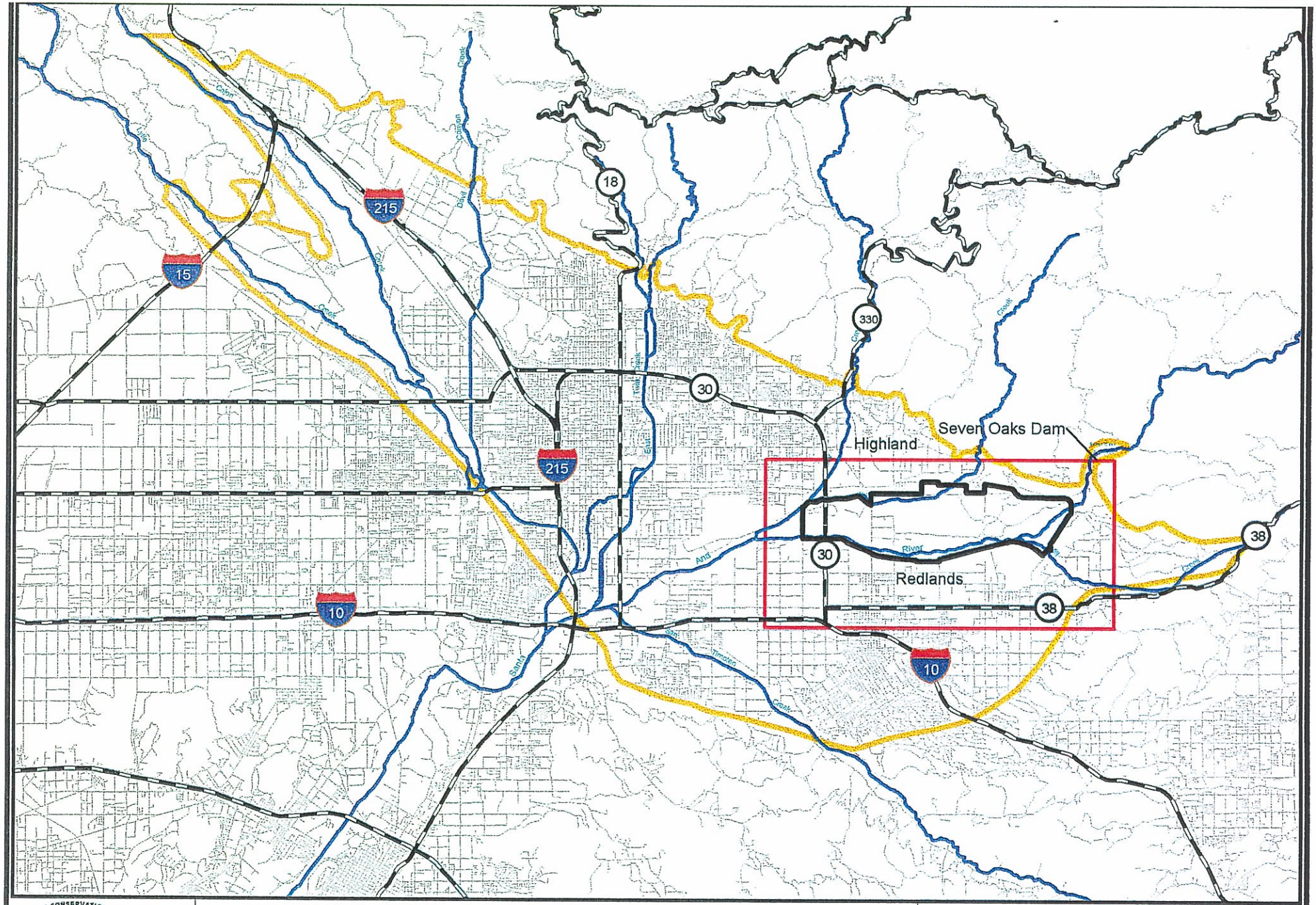
[CITY OF HIGHLAND]

[James E. Penman]
[Mayor]

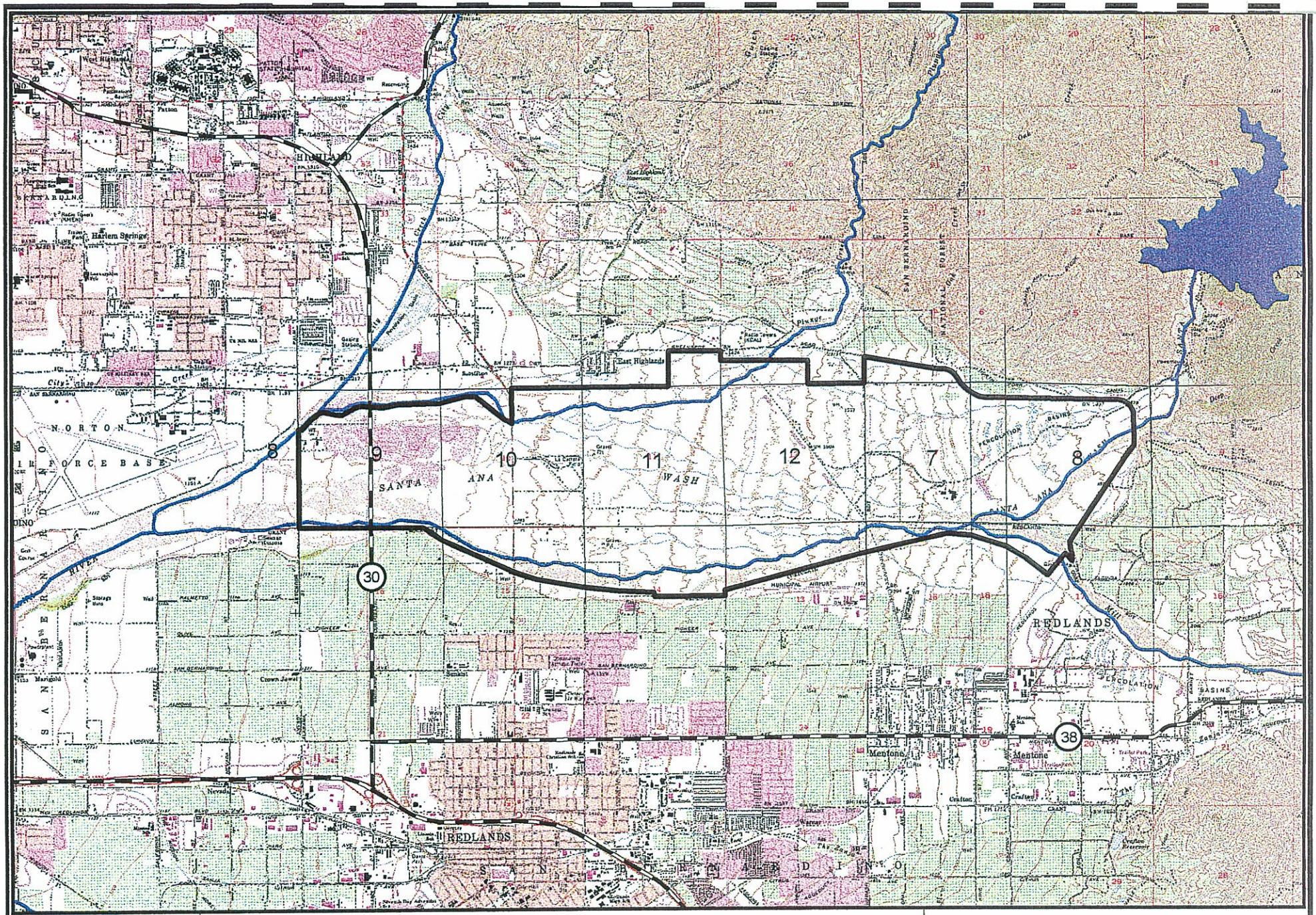
[Attest: Betty Hutchins]
[City Clerk]

EXHIBIT "A": CONCEPT PLAN (Executive Summary)

AREAS TO BE MINED UNDER SMARA, AREAS FOR WATER CONSERVATION, AND AREAS FOR PROTECTION OF HABITAT



Santa Ana Wash Planning Area (Plan B) - Location Map (Fig. 1)



SBV WATER CONSERVATION DISTRICT
OUR NAME IS OUR MISSION

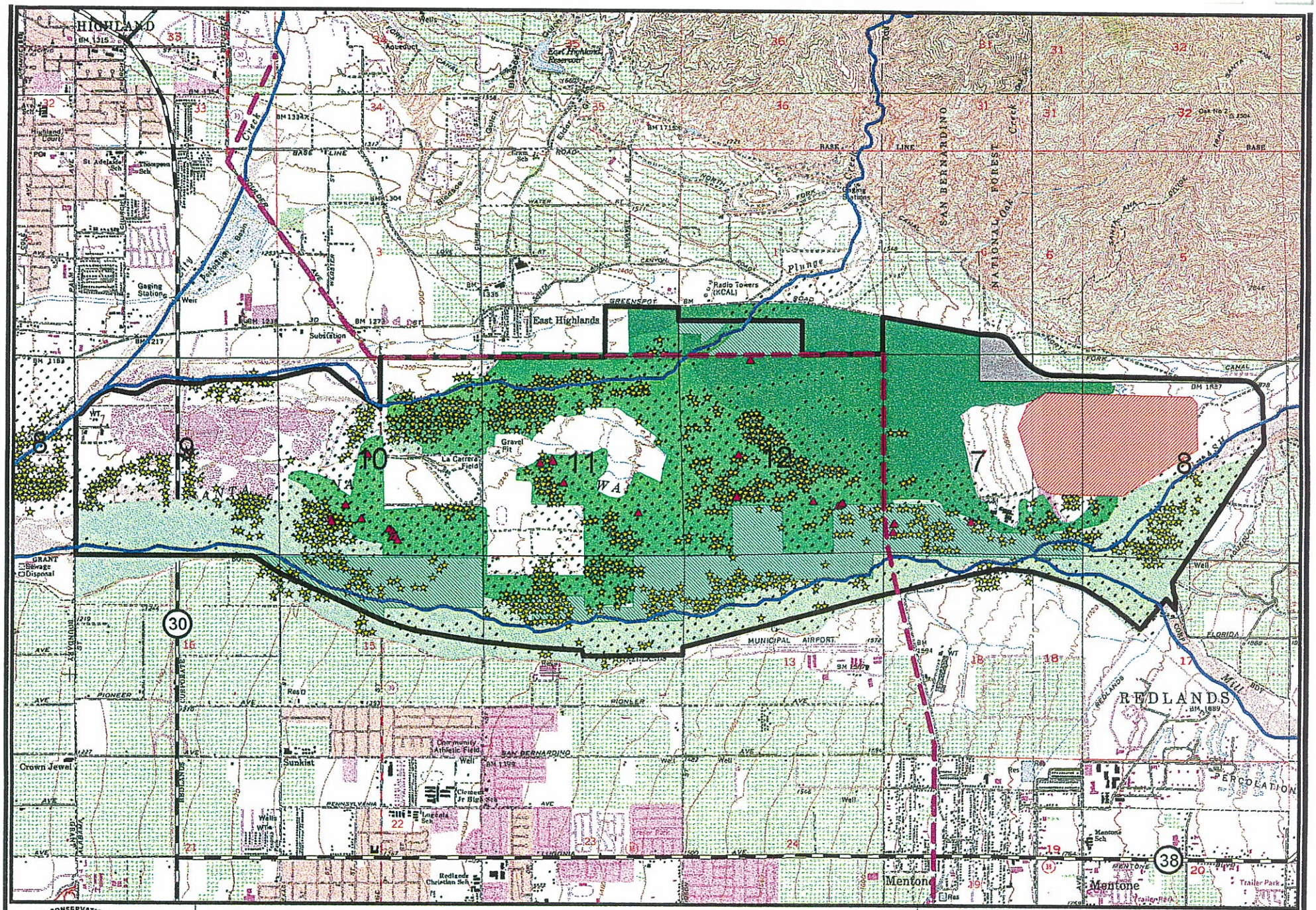
N
W E
S

7-Jul-2009

800 0 800 1600 2400 Feet

Santa Ana Wash Planning Area (Plan B) - Wash Planning Area (Fig. 2)

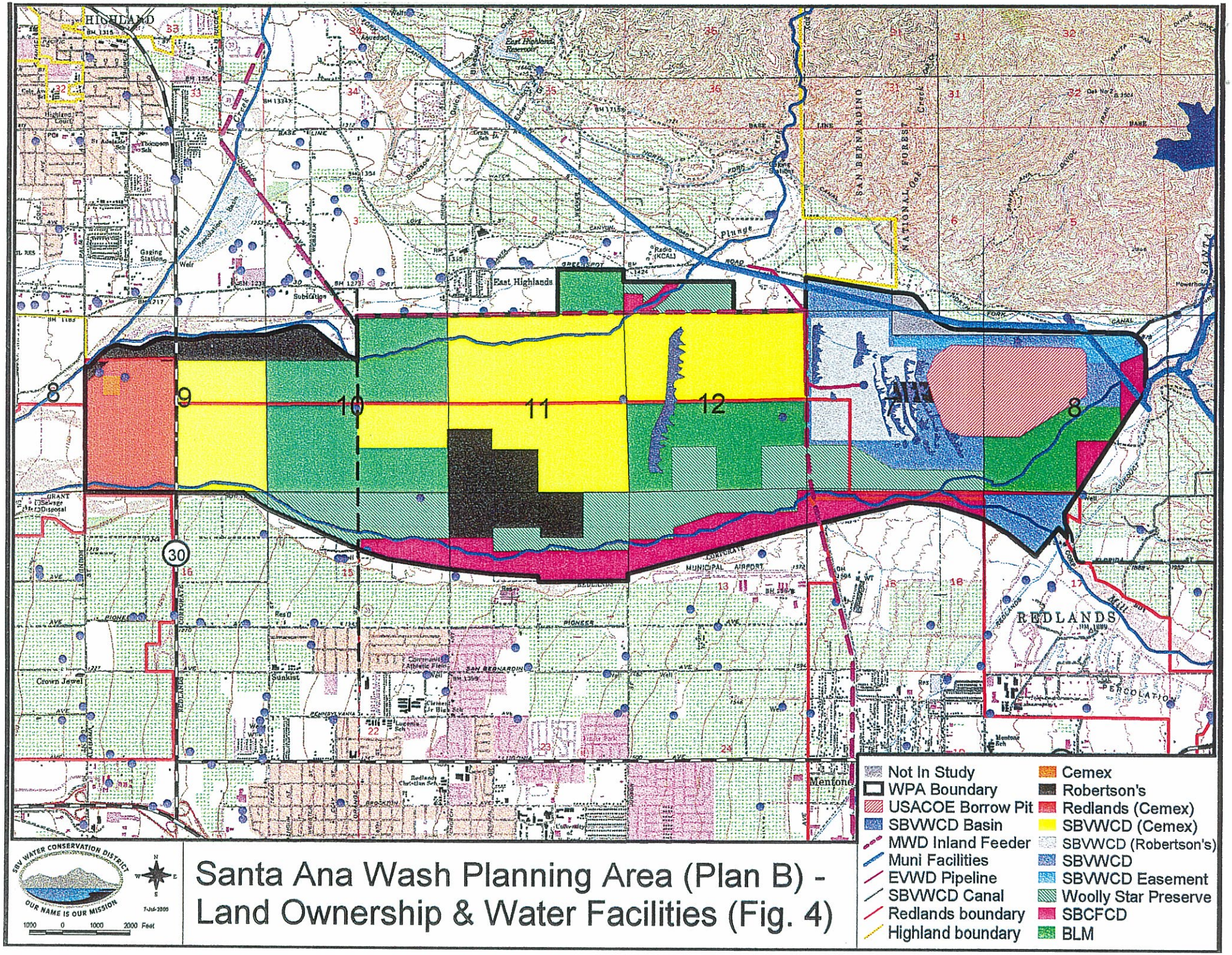
- Highway
- Section Lines
- Rivers/Creeks
- WPA Boundary
- SOD Impoundment



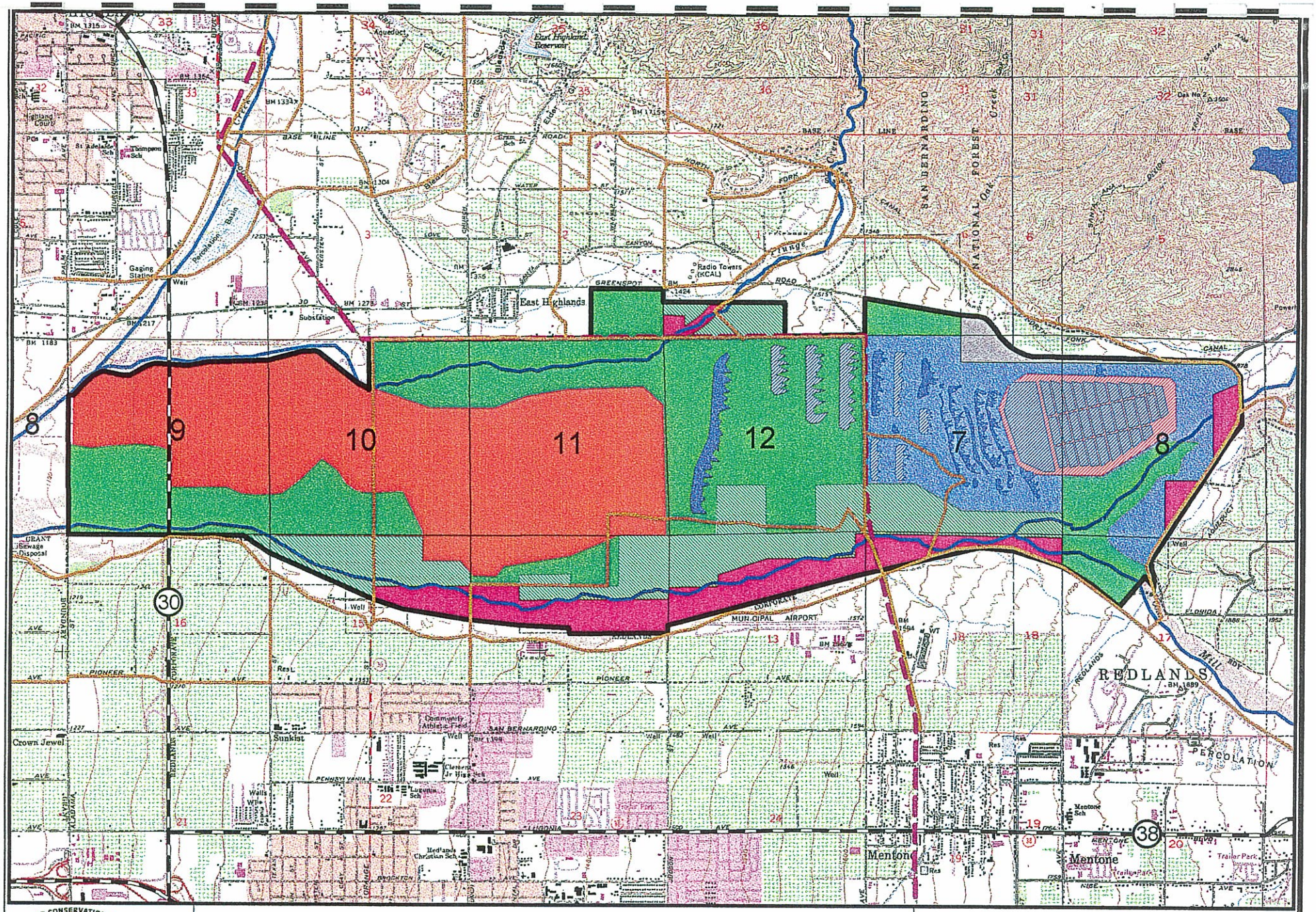
SBV WATER CONSERVATION DISTRICT
OUR NAME IS OUR MISSION
7-Jul-2000
1000 0 1000 2000 Feet

Santa Ana Wash Planning Area (Plan B) - Biological Resources (Fig. 3)

- Pioneer Sage Scrub
- Interm. Sage Scrub
- Mature Sage Scrub
- ▲ Spineflower
- ☆ Woolly Star
- WPA Boundary
- USACOE Borrow Pit
- Woolly Star Preserve
- Poss. K-rat Hab.
- Not In Study



Santa Ana Wash Planning Area (Plan B) - Land Ownership & Water Facilities (Fig. 4)



SBV WATER CONSERVATION DISTRICT
OUR NAME IS OUR MISSION
7-Jul-2000
1000 0 1000 2000 Feet

Santa Ana Wash Planning Area (Plan B) - Land and Habitat Management Plan (Fig. 5)

- Not In Study
- WPA Boundary
- USACOE Borrow Pit
- SBVWCD Basin
- Planned Basin
- Mining
- Flood Control
- Habitat / Water Cons.
- Water Cons. / Habitat
- Woolly Star Preserve

EXHIBIT "B": TASK FORCE CONTRIBUTION LEVELS

Allocation to the Parties of their share of the costs associated with the Project is as set forth below in the following proportions:

AGENCY	RESPONSIBILITY FOR FINANCIAL CONTRIBUTION
CEMEX	24.774
ROBERTSON'S READY MIX	24.774
SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT	24.644
EAST VALLEY WATER DISTRICT	3.226
REDLANDS UTILITIES DEPARTMENT	3.226
COUNTY OF SAN BERNARDINO	6.452
SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT	6.452
CITY OF REDLANDS	6.452

Should the cost to complete financing of the Project exceed the total current estimated charges set forth above, the Task Force will have the responsibility of obtaining any required additional funding from each of the Parties. Any such additional funding shall be assessed to those Parties in the above-mentioned proportions, or as otherwise determined by the Task Force.

Note that in the event the City of Highland joins the Task Force as a Regular Member pursuant to the provisions of Section 2 (H) of this Agreement, the contribution levels set forth here will be superseded by the levels set forth in Exhibit "B-1."

EXHIBIT "B-1": TASK FORCE CONTRIBUTION LEVELS IN THE EVENT CITY OF HIGHLAND JOINS AS A REGULAR MEMBER

Allocation to the Parties of their share of the costs associated with the Project is as set forth below in the following proportions:

AGENCY	RESPONSIBILITY FOR FINANCIAL CONTRIBUTION
CEMEX	23.272
ROBERTSON'S READY MIX	23.272
SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT	23.152
EAST VALLEY WATER DISTRICT	3.030
REDLANDS UTILITIES DEPARTMENT	3.030
COUNTY OF SAN BERNARDINO	6.061
SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT	6.061
CITY OF HIGHLAND	6.061
CITY OF REDLANDS	6.061

Should the cost to complete financing of the Project exceed the total current estimated charges set forth above, the Task Force will have the responsibility of obtaining any required additional funding from each of the Parties. Any such additional funding shall be assessed to those Parties in the above-mentioned proportions, or as otherwise determined by the Task Force.

This schedule of contribution levels shall only become effective if the City of Highland joins the Task Force as a Regular Member pursuant to the provisions of Section 2 (H) of this Agreement.

EXHIBIT "C": PROJECT FLOW DIAGRAM

10/03/01
02/13/02
Special

EXHIBIT "C"

PROPOSED LAND MANAGEMENT & HABITAT CONSERVATION PLAN "PROJECT"

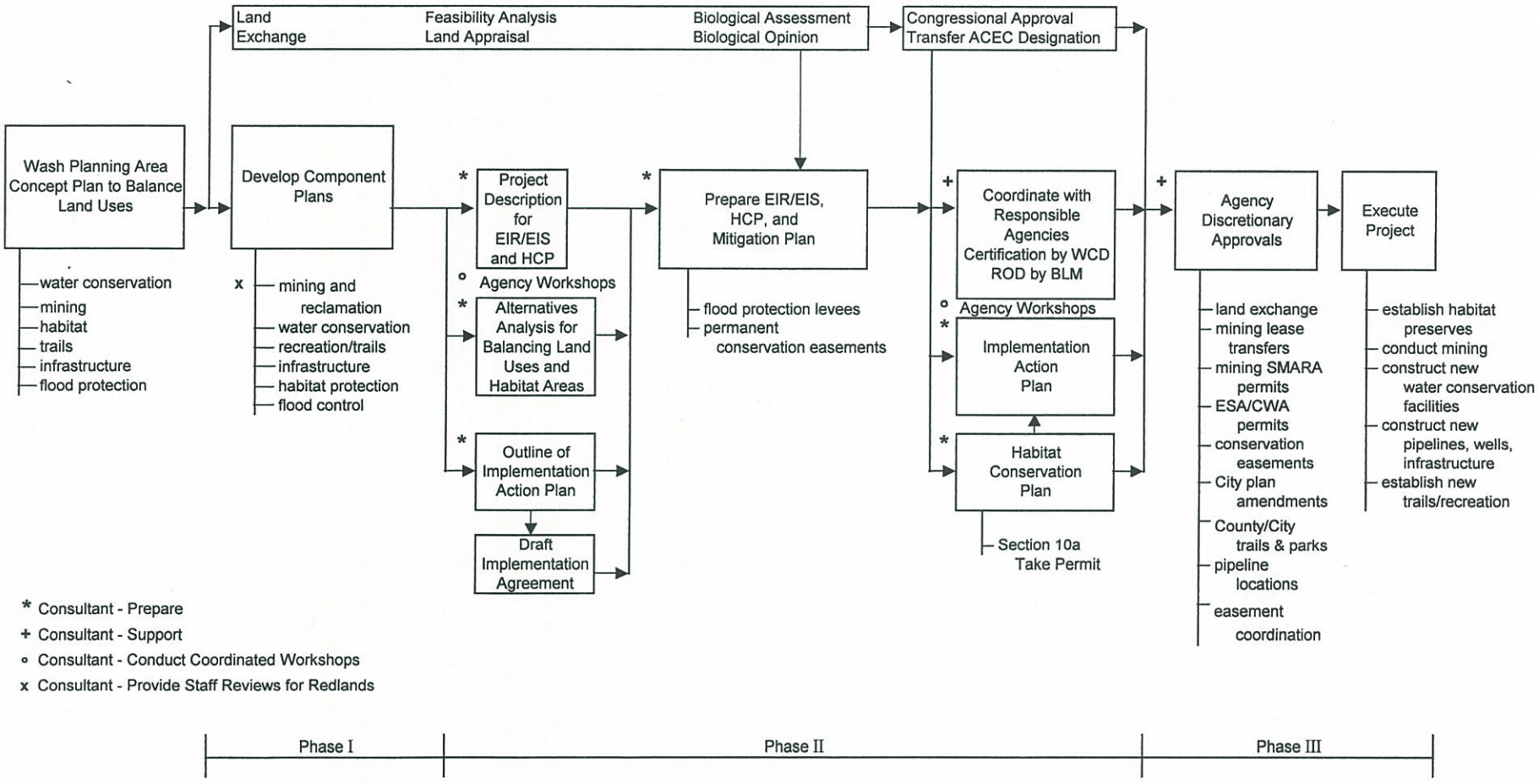


EXHIBIT "C-1": PROJECT FLOW DIAGRAM IN THE EVENT CITY OF HIGHLAND JOINS AS A REGULAR MEMBER

EXHIBIT "C-1"

10/03/01
02/13/02
Special

PROPOSED LAND MANAGEMENT & HABITAT CONSERVATION PLAN "PROJECT"

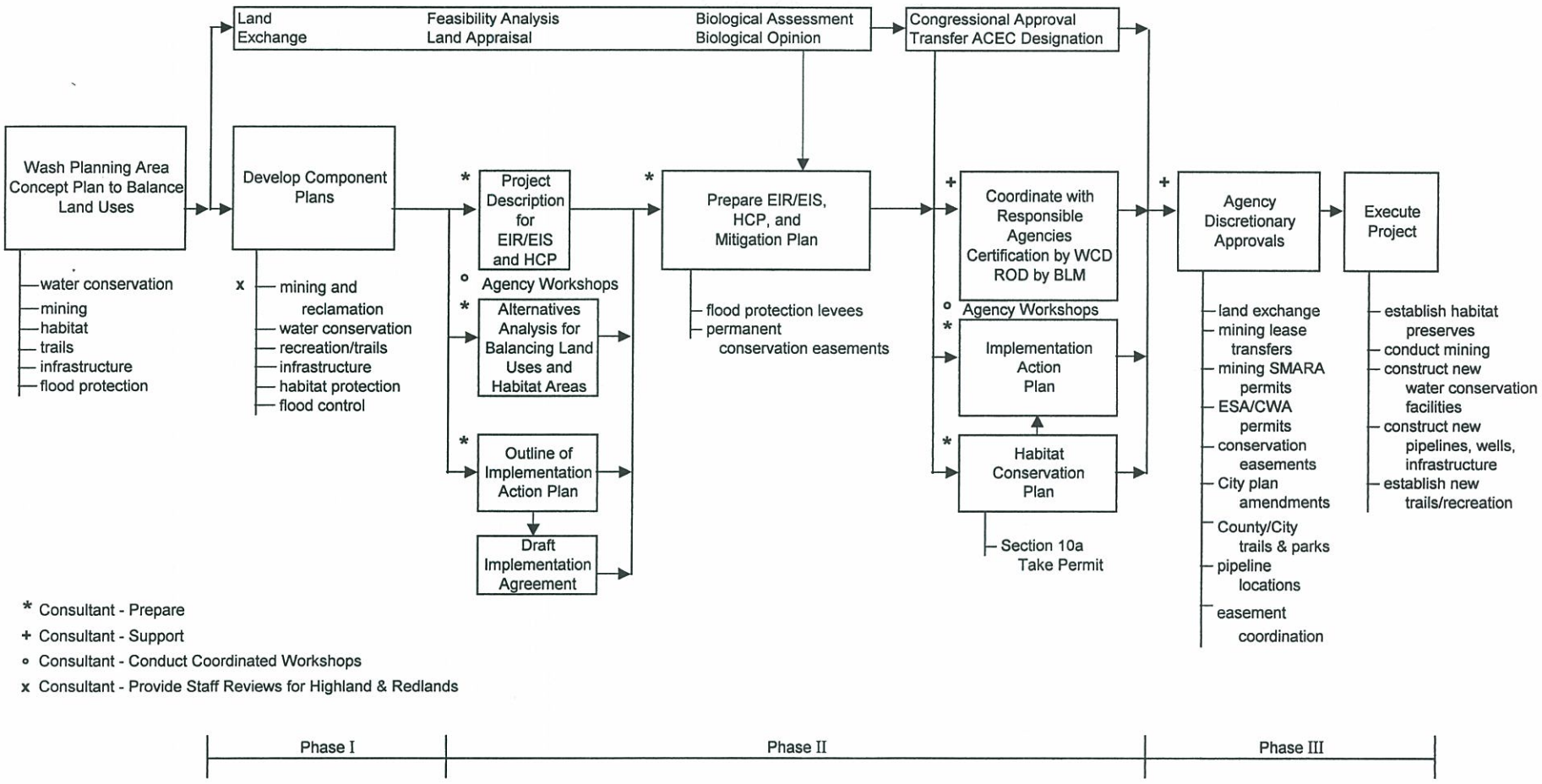


EXHIBIT "D": REVISIONS TO AGREEMENT IN THE EVENT CITY OF HIGHLAND JOINS AS A REGULAR MEMBER

In the event the City of Highland joins the Task Force as a Regular Member pursuant to, and in compliance with, the provisions of Section 2 (H) of this agreement, the parties hereto have agreed to certain modifications of the text of the Task Force Agreement, which will serve as amendments thereto, effective immediately and prospectively upon inclusion of the City of Highland as a Regular Member pursuant to Section 2 (H). These amendments are set out below:

Section 1 (A) 3): A Recreation Plan, which coordinates the planning and development of trails, parks, and public recreation areas, which will be provided by Conservation District, San Bernardino County, Highland, and Redlands.

Section 1 (A)(4): An Infrastructure Plan, which describes the location of pipelines, utility corridors, roads, bridges, highways, and communication facilities, which will be provided by the Conservation District, San Bernardino County, Highland, and Redlands.

Section 1 (F): Task Force submit the EIR/EIS, Implementation Action Plan, and Habitat Conservation Plan to the appropriate agencies for their action and, if adopted, subsequent implementation. The EIR/EIS shall not be certified by the Lead Agency as to those portions of the Project occurring within the jurisdictional boundaries of the City of Highland if, prior to the time the Lead Agency certifies the EIR/EIS, it has been disapproved by the City Council of the City of Highland. The EIR/EIS shall not be certified by the Lead Agency as to those portions of the Project occurring within the jurisdictional boundaries of the City of Redlands if, prior to the time the Lead Agency certifies the EIR/EIS, it has been disapproved by the City Council of the City of Redlands.

Section 2 (B)(2): The California Department of Water Resources (DWR), the California Department of Fish and Game (DFG), the United States Fish and Wildlife Service (USFWS), and County of Orange are hereby designated as Advisory members of the Task Force.

Section 4 (B)(1): Revise Section 4 (B)(1). to read as follows:

Serve as the Lead Agency under CEQA and as assistant to BLM, which is the Lead Agency under NEPA, provided, however, that on issues relating to definition of level of significance for impacts, existence of and mitigation for significant adverse environmental impacts, and formulation of a mitigation monitoring program for those portions of the Project requiring permits under SMARA, the Project Manager shall accept and incorporate into the EIR/EIS the collective determinations of the applicable agencies with SMARA permitting authority for such aspects of the Project, and in the absence of any agreement by such agencies, shall refer determination of such issues to the Task Force;

Exhibit "B": Replace with Exhibit "B-1."

EXHIBIT "D": REVISIONS TO AGREEMENT IN THE EVENT CITY OF HIGHLAND JOINS AS A REGULAR MEMBER (CONTINUED)

Exhibit "C": Replace with Exhibit "C-1."

UPPER SANTA ANA RIVER WASH LAND MANAGEMENT AND HABITAT CONSERVATION PLAN TASK FORCE ("Task Force")

LIST OF TASK FORCE MEMBER AGENCIES

(December 10, 2002)

REGULAR MEMBERS

Member Agency	Governing Member	Technical Member
City of Highland		
City of Redlands		
City of Redlands Municipal Utilities		
County of San Bernardino		
County Flood Control District		
East Valley Water District		
Robertson's Ready Mix, Ltd.		
CEMEX, USA		
U.S. Bureau of Land Management		
Water Conservation District		

ADVISORY MEMBERS

Member Agency	Member
U.S. Army Corps of Engineers	
U. S. Fish & Wildlife Service	
California Dept of Fish & Game	
California Dept of Water Resources	
County of Orange	

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT

1630 West Redlands Boulevard, Suite A
Redlands, CA 92373-8032
(909) 793-2503
Fax: (909) 793-0188

P.O. Box 1839
Redlands, CA 92373-0581
Email: info@sbvwcd.dst.ca.us

December 10, 2002

Jack Woodbury
San Bernardino Valley WCD
31919 Florida Street
Mentone, CA 92346

RE: Agreement to Form the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan Task Force

Dear Mr. Woodbury:

As previously announced, all of the required signatures have been obtained for the Task Force Agreement ("Agreement") referenced above. Attached are the signature pages that you should insert in your copy of the Agreement. On page 1 of the Agreement, you should write in "20th" day of "November" 2002 as the effective day. In accordance with the Agreement, the San Bernardino Valley Water Conservation District ("District") shall be the Task Force Project Manager.

As a reminder, the Agreement was prepared to accommodate the City of Highland because there was a potential delay in their decision to participate. As we now know, the City of Highland agreed to participate several months ago. Therefore, please annotate the appropriate paragraphs of the Agreement to refer to Exhibit "D," "*Revisions to Agreement in the Event City of Highland Joins as a Regular Member*."

Section 2 of the Agreement identifies the criteria for Regular and Advisory Members of the Task Force, and stipulates that each Regular Member will have two representatives: one to oversee and contribute to the technical/staff aspects and one from the governing body. The names of those representatives should be forwarded to the Project Manager at this time. Advisory Members should also submit representative names to the Project Manager at this time. A list of current Regular and Advisory Members is attached.

On December 20, the former Wash Committee Technical Advisory Committee (TAC) will meet for a Pre-final review of the proposed scope of work prior to the Project Manager issuing a Notice to Proceed to LSA Associates, Inc., who will prepare the environmental documentation for the Concept Plan. Following that review, an invoice will be submitted to each Regular member for its share of the consultant's cost, based

BOARD OF DIRECTORS
Bert Marcum, Jr.
Clare Henry Day
Arnold L. Wright
Sterling Woodbury
Cheryl A. Tubbs
Melody Henriques
Manuel Aranda, Jr.
GENERAL MANAGER
D. Burnell Cavender, AICP

on the distribution of costs shown on Exhibit "B-1": *Task Force Contribution Levels in the Event City of Highland Joins as a Regular Member*, of the Agreement, and attached hereto.

The District is looking forward to starting calendar year 2003 by issuing a Notice to Proceed to prepare the environmental documentation. Please note that the first task in the scope of work is to complete the Project Description. Therefore, please review Section 1 of the Agreement as a reminder of the responsibilities of the Task Force and the Regular Members for preparing the "Component Plans." When the Notice to Proceed is issued, we will not want to delay the consultant by not having Component Plans ready for review. It has already been 6 years since we started developing the Concept Plan. As Project Manager, we will do our best to assure the environmental documentation is prepared within the estimated 18 months.

We thank you for your past and continued perseverance and willingness to work toward a coordinated plan that we all know intuitively is the right thing to do. We look forward to continued good working relations among the Task Force members.

Sincerely,

D. Burnell Cavender, AICP
General Manager

Enclosures: Signature Pages (9)
List of Regular and Advisory Members
Exhibit "B-1"

Copy to: David B. Cosgrove, Esq, Rutan & Tucker

PROPOSED

LAND MANAGEMENT AND HABITAT CONSERVATION PLAN FOR THE UPPER SANTA ANA RIVER WASH

EXECUTIVE SUMMARY

PREPARED FOR THE
SANTA ANA RIVER WASH AREA COORDINATED
PLANNING ACTIVITIES COMMITTEE

BY

STAFF OF THE
SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT

APRIL 2001
(Figures Revised December 2001)

PROPOSED LAND MANAGEMENT AND HABITAT CONSERVATION PLAN FOR THE UPPER SANTA ANA RIVER WASH

D. Burnell Cavender, AICP
General Manager
San Bernardino Valley Water Conservation District

Introduction

The land area between the mouth of the Santa Ana River Canyon, down stream of the new Seven Oaks Dam on the east, Interstate 215 (I-215) on the west, the cities of Highland and Redlands to the north and south, respectively, is known locally as the Upper Santa Ana River Wash (Wash) (Fig 1). A part of that Wash, containing approximately 5,200 acres, from the canyon mouth to Alabama Street on the west and bounded by the cities, has been the subject of intense planning the past three years. This area is known as the Wash Planning Area or the "WPA" (Fig 2).

Historically, the Wash was a natural flood plain and alluvial fan. In the past, the flood plain has provided a place to convey frequently devastating flood waters and deposit sediment. The alluvial deposit provides excellent geologic conditions to establish settling basins for percolating surface water to the groundwater basin, providing a significant part of the water supply for the local region. These same geologic conditions provide regionally significant deposits of sand and gravel as classified by the California Department of Conservation, that are used to support the local economy. In recent years, the value of the Wash as habitat for a variety of sensitive, threatened, and endangered species has become more apparent due to the decrease in this type of habitat throughout Southern California (Fig 3). Because the Wash is a unique open space and corridor, the County of San Bernardino (County) and the cities of Highland and Redlands are also planning to establish a series of recreational trails in and around the Wash. These important functions within the Wash, flood control, water conservation, mineral extraction, and wildlife habitat, are often in direct competition for much of the same land. It has been apparent since the early 1980s that a land management plan for the future use of the Wash would be needed to maintain other public services (water supply facilities, transportation and utility corridors, and recreation/trails), provide areas for the extraction of valuable construction materials, and preserve declining sensitive habitats.

In 1993, representatives of numerous agencies, including water, mining, flood control, wildlife and municipal interests, formed a Wash Committee to address local mining issues. Subsequently, the role of the Committee was expanded to address all the land functions in the Wash. The Wash Committee began meeting again in 1997 to determine how to use the WPA to accommodate all the important functions identified above. A Policy Action Committee (PAC) was established consisting of elected officials from the County, cities of Highland and Redlands, and the San Bernardino Valley Water Conservation District (District), and the Field Manager from the U.S. Bureau of Land Management (BLM). A Technical Advisory Committee (TAC) was formed with

representatives of the PAC agencies and other water, mining, flood control, and wildlife interests. The District chairs and provides staff support for the Committees.

The TAC, in concept, wiped the WPA clean of land ownership lines (Fig 4) and began anew to decide how the land could best be used. As a result of extensive workshops during 1998 and 1999, a conceptual Coordinated WPA map has been developed. As expected, the way the land might best be used and the way the land use was planned were not the same, nor does it conform to current land ownership. For example, the TAC found that some land proposed for mining was better suited for joint use by water conservation and wildlife habitat while other areas proposed for habitat preservation could be used better for mining. It became apparent that to make a plan work, land ownership would have to change, in particular, a land transfer or exchange between the BLM and the District, and areas leased by the District for mining.

A general consensus of the TAC was reached in early 2000 on the areas within the WPA designated for the specified land uses, which is the basis of the Land Management and Habitat Conservation Plan (Plan) (Fig 5). As stated, the proposed designations for land use crossed land ownership (3 public and 2 private) and land use authority lines (2 cities and the County). The TAC determined that mining expansion is best addressed by consolidating the future mining activity into one large area adjacent to existing mining operations within the western half of the WPA. This focuses extraction activities on lands currently disturbed by mining and lands with the least long-term wildlife habitat value. Furthermore, the TAC determined that portions of the BLM land designated as Areas of Critical Environmental Concern (ACEC) were either previously disturbed or were fragmented by adjacent mining activities, and thus would be better suited for mining expansion. Some of the most intact, viable wildlife habitat areas are contained within lands that are leased for future mining and currently used for water conservation. The TAC concluded that some of these lands were best suited for joint use as water and habitat conservation rather than mining. For example, the up-gradient side of a percolation basin dike could be wetted and periodically contain water for water-dependent species; whereas, the down-gradient side could generally remain undisturbed, except for maintenance and repair of the percolation basin dike and, therefore, could support other wildlife species common to the WPA.

Refinements in land use boundaries were made and agency and jurisdictional coordination was accomplished. The result of this effort is a proposed Plan that designates areas of the WPA for specific uses. The Plan will allow the existing and future Wash activities and land functions to occur and establish habitat preserves.

It is imperative that the principles that will govern the use, management, and conservation of the WPA be set forth in legally binding documents to which all concerned parties can agree. The PAC believes that there are sufficient lands in the WPA that can be divided equitably among the advocates to accommodate the needs for water conservation and supply facilities, aggregate extraction, and flood protection, while providing land for wildlife habitat and recreation.

It is equally important to note that if this coordinated Plan is not implemented, the consequences could be very grave for each of the primary use groups. Without the Plan, attempts to expand water conservation to meet future demands, develop additional aggregate resources, or effectively protect habitat will likely be held up by legal proceedings. Such action could result in

piecemeal planning, thus impairing the ability to reach an effective compromise. If local land use agencies make decisions regarding mining development in the WPA, without considering a coordinated plan, there could be greater environmental degradation and reduced ability to meet future water supply demands. On the other hand, if local officials make land use decisions that significantly restrict water conservation activities and mining, the reduced availability of water and aggregate resources may impact the economic development of the region. The affect of not implementing this Plan is that none of the groups would be able to accomplish its goals.

Proposed Project Description Summary

The proposed project is a Land Management and Habitat Conservation Plan (Plan) for the Upper Santa Ana River Wash Planning Area. The land area addressed in this Plan is part of the overall alluvial fan and flood plain located along the Santa Ana River one mile downstream from the new Seven Oaks Dam between the cities of Highland on the north and Redlands to the south. The City of San Bernardino, to the northwest, is the largest city in the San Bernardino Valley. The WPA covers approximately 5,200 acres and starts at the canyon mouth at Greenspot Road, extends for some six miles to Alabama Street, and is as much as two miles wide.

The Plan will coordinate and accommodate existing ongoing and anticipated future activities planned to occur in the WPA, establish habitat preserve areas, and provide recreational trails. Each function will occupy designated specific areas within the WPA best suited for that function and will also accommodate the other competing uses for the overall benefit of the WPA. These existing and future activities include the following:

- Water conservation of both native and (when necessary) imported water resources for groundwater basin replenishment to augment public water supplies;
- Flood control, and management of the Seven Oaks Dam releases;
- Aggregate extraction and processing;
- Protection and conservation of sensitive and listed native species and habitat;
- Recreation planning including a portion of the Santa Ana River trail system; and
- Utilities, transportation, and water supply corridors and facilities.

The final approved Plan, its associated actions and permits, and environmental review will provide the necessary information for jurisdictional approvals for the described activities to move forward. The Plan, when implemented will be considered a "Win-Win-Win" for all the water, utility and service functions, mineral resource management, and environmental resource preservation.

As staff for the Wash Committee, the District invites your questions and support for this inter-relational concept plan. You may call me at 909-793-2503, or write to me at P.O. Box 1839, Redlands, CA 92373.

Coordinated Operations Agreement

This Coordinated Operations Agreement ("**Agreement**") is entered into and effective this 9 day of September, 2013 (the "**Effective Date**") by and between the San Bernardino Municipal Water Department (the "**Department**") and San Bernardino Valley Municipal Water District ("**Valley District**"). The Department and Valley District are each sometimes referred to herein as a "**Party**" and are collectively referred to as the "**Parties**."

Recitals

A. The Department owns certain water delivery facilities serving the residents of the City of San Bernardino, including certain groundwater wells, the Encanto pumping station, the 10th Street Pipeline, and the Virginia Street Pipeline, all of which are identified more fully on the map attached hereto as **Exhibit A**, which is incorporated herein by reference ("**Department Facilities**").

B. By agreement dated June 15, 2005, Valley District purchased 61.98% of the capacity in Department's 10th Street Transmission Main and 46.73% of the capacity in Department's Virginia Street Transmission Main.

C. Valley District owns certain water delivery facilities in and through the City of San Bernardino which are identified more fully on the map attached hereto as **Exhibit A**, which is incorporated herein by reference ("**Valley District Facilities**").

D. At Valley District's request, the Department has been operating and making Department deliveries utilizing Valley District's Baseline Feeder Extension South Pipeline.

E. Both the Department and Valley District from time to time have unused capacity in their respective water delivery facilities.

F. The Parties share an interest in using their respective facilities to increase operational flexibility, improve water supply reliability in their respective service areas, encourage the efficient use of capacity within the each Party's water delivery system and provide the public with more reliable water service as efficiently as possible.

G. The Parties wish to enable each other to make use of unused capacity in their respective facilities whenever possible and so wish to provide for the coordinated operation of those facilities.

H. The Parties agree that if either Party uses the other's water delivery facilities to deliver water, that Party using the facilities should be responsible for the increased cost associated with that Party's use.

SBVMWD LEGAL DOCUMENT 2415

I. The Parties wish to continue the spirit of cooperation they enjoy by memorialing in this Agreement their desire to share their respective water production, transmission and distribution facilities.

Agreements

The Parties agree as follows:

1. *Term.* This Agreement shall have an initial term of twenty-five (25) years from its Effective Date and shall automatically renew for subsequent ten-year terms thereafter unless terminated as provided for in paragraph 2 below.

2. *Termination.* This Agreement may be terminated by either Party: (i) at the end of the initial term or any subsequent term, with or without cause, upon written notice provided at least one year prior to the end of the initial or subsequent term; or (ii) for cause upon 90-days' written notice, *provided* that the Parties have, prior to the notice of termination, attempted to resolve the dispute as provided in paragraph 13.cbelow.

3. *Other Agreements.* This agreement is not intended to modify or change any other agreement the Parties may have together.

4. *Facilities Subject to This Agreement.* This Agreement governs the Parties' coordinated operation and use of the Department Facilities and the Valley District Facilities as described in Exhibit A, respectively. The Parties may amend this Agreement to add additional water delivery facilities owned by either Party upon the written consent of the other Party. Neither Party shall unreasonably delay or deny its consent for the addition of facilities owned by the other Party.

5. *Priority.* Save as may be provided by any other written agreement existing as of the Effective Date of this Agreement, each Party shall have priority for the use of the other Party's facilities, as set forth in Exhibit A, over any non-Party to this Agreement. Nothing in this Agreement, however, shall be construed to create a right by either Party to any specific share of the capacity in the other Party's facilities except for that capacity already purchased in Department's facilities by Valley District.

6. *Coordinated Operations.* This Agreement provides for the Parties' coordinated use of unused capacity within their respective water delivery facilities.

a. *Operation of Department Facilities.* The Department shall operate the Department Facilities to serve Valley District as follows:

(1) When Valley District requests a change to the current flow rate in one or more of the Department Facilities, Valley District shall request that change in writing at least 24 hours in advance, except in case of emergency.

(2) If the Valley District request is for flow through facilities in which Valley District has purchased capacity, Department's staff shall make the operational changes needed to provide the requested flow rate to Valley District for the duration requested.

(3) If the Valley District request is for flow through Department facilities in which Valley District does not own capacity and Department, in its sole discretion, determines that there will be unused and available capacity in that Department Facility, the Department's staff shall make the changes needed to provide the requested flow rate to Valley District for the duration requested.

b. *Operation of Valley District's Baseline Feeder Extension South Pipeline.* The Department shall operate the Baseline Feeder Extension South Pipeline on behalf of Valley District as follows:

(1) If the Department wishes to change the flow rate in the Valley District Facilities to make better use of unused and available capacity, the Department will provide Valley District with at least 24 hours' written notice of such change in flow rate. Valley District may, in its sole discretion, veto such modification of flow rates if Valley District believes that the modification in flow rates would not serve the interests of Valley District or its other customers.

(2) Valley District will coordinate deliveries of water with the Department staff operating the pipeline.

(3) The Baseline Feeder Extension South Pipeline presently conveys potable drinking water for the Department. Department agrees to fulfill all monitoring and other requirements associated with operating a potable water line per all applicable state and federal laws.

c. *Operation of other Valley District Facilities.* Valley District shall operate Valley District Facilities to serve the Department as follows:

(1) If the Department wishes to change the flow rate of a Valley District Facility to make better use of unused and available capacity, the Department will provide Valley District with at least 24 hours' written notice of such a change in flow rate. Valley District may, in its sole discretion, veto such modification of flow rates if Valley District believes that the modification in flow rates would not serve the interests of Valley District or its other customers.

(2) If the Department request is for flow through Valley District facilities, Valley District, in its sole discretion, determines that there will be unused and available capacity in that Valley District Facility, the Valley District

staff shall make the changes needed to provide the requested flow rate to the Department for the duration requested.

7. *Establishment of Joint Operations Committee.* The Parties shall establish and participate in a Joint Operations Committee (the "**JOC**") to serve in an advisory capacity to both Parties regarding their coordinated operation of the Department Facilities and the Valley District Facilities. The JOC shall establish which costs for the Department Facilities and the Valley District Facilities are eligible for reimbursement, and shall perform such other functions as determined by the Parties. The JOC shall meet at least twice a year to review the financial and water accounting needed to implement this Agreement.

8. *Maintenance.* Valley District shall be responsible for performing routine maintenance on Valley District Facilities, and Department shall be responsible for performing routine maintenance on Department Facilities. However, each Party shall be reimbursed for any JOC approved maintenance costs associated with the shared use of the facilities as described in Section 9 below.

9. *Eligible Reimbursement Costs.* Each Party will reimburse the other Party for its use of that Party's facilities as follows:

a. *Valley District Facility Replacement Costs.* Since Valley District's facilities were constructed and paid for entirely by Valley District, Valley District shall pay all replacement costs.

b. *Valley District Baseline Feeder Extension South Pipeline.* The Department will continue to provide and pay for all operations costs associated with the Baseline Feeder Extension South Pipeline provided that the Department is the sole user of this facility. At such time that Valley District and/or its partner Western Municipal Water District begin to operate this facility, the Department shall pay its proportional share of the operations costs as calculated in paragraph c, below.

c. *Valley District Operations Costs.* The Department will reimburse Valley District for **Fixed Costs** and **Variable Costs** associated with the Department's use of the Valley District Facilities, as provided in this paragraph. Department's total reimbursement to Valley District shall be the sum of the Fixed Cost and the Variable Cost in each calendar year.

(1) *Fixed Costs.* **Fixed Costs** shall consist of the sum of: (i) sampling costs, and (ii) permit compliance costs incurred by Valley District in the operation of its Facilities. Department shall pay Valley District a portion of total Fixed Costs for the operation of the Valley District Facilities that is equal to the proportion of the total capacity of the Valley District Facilities which is authorized for Department's use in that calendar year.

(2) *Variable Costs.* **Variable Costs** shall consist of the sum of: (a) energy costs associated with the use of the Valley District Facilities; (b) repair costs; and (c) personnel costs for the use of the Valley District Facilities.

Department shall pay Valley District the portion of the total Variable Costs for the operation of the Valley District Facilities that is equal to the proportion of the total capacity of the Valley District Facilities which is authorized for Department's use in that calendar year.

d. *Department Facilities.* Valley District will reimburse Department for **Fixed Costs** and **Variable Costs** associated with Valley District's use of the Department Facilities, as provided in this paragraph. Valley District's total reimbursement to the Department shall be the sum of the Fixed Cost and the Variable Cost in each calendar year.

(1) *Replacement Costs.* For all of the Department facilities in which Valley District has purchased capacity, Valley District shall pay its proportionate share of any replacement costs.

(2) *Fixed Costs.* **Fixed Costs** shall consist of the sum of: (i) sampling costs, and (ii) permit compliance costs incurred by the Department in the operation of the Department Facilities. Valley District shall pay the Department a portion of total Fixed Costs for the operation of the Department Facilities that is equal to the capacity which Valley District has purchased in Department facilities or its proportionate share, based on the capacity that has been authorized for Valley District use in that calendar year.

(3) *Variable Costs.* **Variable Costs** shall consist of the sum of: (a) energy costs associated with the use of the Department Facilities; (b) repair costs and (c) personnel costs for the use of the Department Facilities. Valley District shall pay the Department a portion of the total Variable Costs for the operation of the Department Facilities that is equal to the proportion of the total flows conveyed through the Department Facilities during a calendar year that were conveyed at the request of Valley District in that year.

e. *Fair Compensation.* For the purposes of Water Code Section 1810, both Parties agree that the payment structure set forth in this paragraph 8 constitutes fair compensation for each Party's use of unused capacity in the other Party's facilities.

10. *Invoices.* Each Party shall invoice the other Party for eligible reimbursement costs, as described in paragraph 8 above, annually in arrears on each March 1. Invoices shall include a full cost accounting, and must indicate, in reasonable detail, the cost of each action undertaken to operate and maintain the facilities in question. Invoices shall include all information reasonably necessary for each Party to confirm the other Party's calculation of reimbursement costs. In the event that either Party objects to any costs identified on an invoice, that Party shall pay the undisputed costs and shall invoke the dispute resolution process set forth in paragraph 13.c below for the objectionable costs.

11. *Payment Schedule.* Within 45 days of the date that an invoice is provided to a Party, the Party shall pay the invoicing Party for any costs that are not subject to an objection.

12. *Indemnification.*

a. *Indemnification by Department.* The Department shall indemnify, defend and hold harmless Valley District, its directors, officers, employees and agents from and against all damages, liabilities, claims, actions, demands, costs and expenses (including, but not limited to, costs of investigations, lawsuits and any other proceedings whether in law or in equity, settlement costs, attorneys' fees and costs), and penalties or violations of any kind, which arise out of, result from, or are related to the implementation of this Agreement by Department.

b. *Indemnification by Valley District.* Valley District shall indemnify, defend and hold harmless Department, its directors, officers, employees and agents from and against all damages, liabilities, claims, actions, demands, costs and expenses (including, but not limited to, costs of investigations, lawsuits and any other proceedings whether in law or in equity, settlement costs, attorneys' fees and costs), and penalties or violations of any kind, which arise out of, result from, or are related to the implementation of this Agreement by Valley District.

c. *Indemnification Procedures.* Any Party that is an indemnified party (the "**Indemnified Party**") that has a claim for indemnification against another Party (the "**Indemnifying Party**") under this Agreement, shall promptly notify the Indemnifying Party in writing, *provided, however,* that no delay on the part of the Indemnified Party in notifying the Indemnifying Party shall relieve the Indemnifying Party from any obligation unless (and then solely to the extent) the Indemnifying Party is prejudiced. Further, the Indemnified Party shall promptly notify the Indemnifying Party of the existence of any claim, demand, or other matter to which the indemnification obligations would apply, and shall give the Indemnifying Party a reasonable opportunity to defend the same at its own expense and with counsel of its own selection, *provided* that the Indemnified Party shall at all times also have the right to fully participate in the disputed matter at its own expense. If the Indemnifying Party, within a reasonable time after notice from the Indemnified Party, fails to defend a claim, demand or other matter to which the indemnification obligations would apply, the Indemnified Party shall have the right, but not the obligation, to undertake the defense of, and to compromise or settle (exercising reasonable business judgment), the claim or other matter, on behalf, or for the account, and at the risk, of the Indemnifying Party. If the claim is one that cannot by its nature be defended solely by the Indemnifying Party, then the Indemnified Party shall make available all information and assistance to the Indemnifying Party that the Indemnifying Party may reasonably request.

13. *Administration of Agreement.*

a. *Recordation of Agreement.* Valley District shall, within ten days of the Effective Date of this Agreement, cause this Agreement to be recorded in the Official Records of the County of San Bernardino. Valley District shall provide the Department with a recorded copy of this Agreement promptly upon the receipt of such copy from the County of San Bernardino.

b. *Books and Records.* Each Party shall have access to and the right to examine any of the other Party's pertinent books, documents, papers or other records (including, without limitation, records contained on electronic media) relating to the performance of that Party's obligations pursuant to this Agreement. The Parties shall each retain all such books, documents, papers or other records to facilitate such review. Access to each Party's books and records shall be during normal business hours only. Nothing in this paragraph shall be construed to operate as a waiver of any applicable privileges.

c. *Disputes.* The Parties recognize that there may be disputes regarding the obligations of the Parties or the interpretation of this Agreement. The Parties agree that they may attempt to resolve disputes as follows:

(1) *Statement Describing Alleged Violation of Agreement.* A Party alleging a violation of this Agreement (the "**Initiating Party**") shall provide a written statement describing all facts that it believes constitute a violation of this Agreement to the Party alleged to have violated the terms of this Agreement (the "**Responding Party**").

(2) *Response to Statement of Alleged Violation.* The Responding Party shall have sixty days from the date of the written statement to prepare a written response to the allegation of a violation of this Agreement and serve that response on the Initiating Party or to cure the alleged violation to the reasonable satisfaction of the Initiating Party. The Initiating Party and the Responding Party shall then meet within thirty days of the date of the response to attempt to resolve the dispute amicably.

(3) *Mediation of Dispute.* If the Initiating Party and the Responding Party cannot resolve the dispute within ninety days of the date of the written response, they shall engage a mediator, experienced in water-related disputes, to attempt to resolve the dispute. Each Party shall ensure that it is represented at the mediation by a Commissioner or Director. These representatives of the Initiating Party and the Responding Party may consult with staff and/or technical consultants during the mediation and such staff and/or technical consultants may be present during the mediation. The costs of the mediator shall be divided evenly between the Initiating Party and the Responding Party.

(4) *Reservation of Rights.* Nothing in this paragraph 13.c shall require a Party to comply with the dispute resolution process contained herein and each Party retains and may exercise at any time all legal and equitable rights

and remedies it may have to enforce the terms of this Agreement; provided, that prior to commencing litigation, a Party shall provide at least five calendar days' written notice of its intent to sue to all Parties.

14. *No Changes to Water Rights.* This Agreement is an agreement for the coordinated use of the Department Facilities and the Valley District Facilities only. Nothing in this Agreement shall validate, invalidate or modify, in any way, any rights to water held or claimed by a Party.

15. *Ownership of Department and Valley District Facilities.* Nothing in this Agreement shall be construed so as to change the ownership of such facilities or to provide one Party with a real property interest in the facilities of the other Party

16. *General Provisions.*

a. *Authority.* Each signatory of this Agreement represents that s/he is authorized to execute this Agreement on behalf of the Party for which s/he signs. Each Party represents that it has legal authority to enter into this Agreement and to perform all obligations under this Agreement.

b. *Amendment.* This Agreement may be amended or modified only by a written instrument executed by each of the Parties to this Agreement.

c. *Jurisdiction and Venue.* This Agreement shall be governed by and construed in accordance with the laws of the State of California, except for its conflicts of law rules. Any suit, action, or proceeding brought under the scope of this Agreement shall be brought and maintained to the extent allowed by law in the County of San Bernardino, California.

d. *Headings.* The paragraph headings used in this Agreement are intended for convenience only and shall not be used in interpreting this Agreement or in determining any of the rights or obligations of the Parties to this Agreement.

e. *Construction and Interpretation.* This Agreement has been arrived at through negotiations and each Party has had a full and fair opportunity to revise the terms of this Agreement. As a result, the normal rule of construction that any ambiguities are to be resolved against the drafting Party shall not apply in the construction or interpretation of this Agreement.

f. *Entire Agreement.* This Agreement constitutes the entire agreement of the Parties with respect to the subject matter of this Agreement and supersedes any prior oral or written agreement, understanding, or representation relating to the subject matter of this Agreement.

g. *Partial Invalidity.* If, after the date of execution of this Agreement, any provision of this Agreement is held to be illegal, invalid, or unenforceable under present or future laws effective during the term of this Agreement, such provision shall be

fully severable. However, in lieu thereof, there shall be added a provision as similar in terms to such illegal, invalid or unenforceable provision as may be possible and be legal, valid and enforceable.

h. *Successors and Assigns.* This Agreement shall be binding on and inure to the benefit of the successors and assigns of the respective Parties to this Agreement. No Party may assign its interests in or obligations under this Agreement without the written consent of the other Parties, which consent shall not be unreasonably withheld or delayed.

i. *Waivers.* Waiver of any breach or default hereunder shall not constitute a continuing waiver or a waiver of any subsequent breach either of the same or of another provision of this Agreement and forbearance to enforce one or more of the remedies provided in this Agreement shall not be deemed to be a waiver of that remedy.

j. *Attorneys' Fees and Costs.* The prevailing Party in any litigation or other action to enforce or interpret this Agreement shall be entitled to reasonable attorneys' fees, expert witnesses' fees, costs of suit, and other and necessary disbursements in addition to any other relief deemed appropriate by a court of competent jurisdiction.

k. *Necessary Actions.* Each Party agrees to execute and deliver additional documents and instruments and to take any additional actions as may be reasonably required to carry out the purposes of this Agreement.

l. *Compliance with Law.* In performing their respective obligations under this Agreement, the Parties shall comply with and conform to all applicable laws, rules, regulations and ordinances.

m. *Third Party Beneficiaries.* This Agreement shall not create any right or interest in any non-Party or in any member of the public as a third party beneficiary.

n. *Counterparts.* This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original, but all of which together shall constitute but one and the same instrument.

o. *Notices.* All notices, requests, demands or other communications required or permitted under this Agreement shall be in writing unless provided otherwise in this Agreement and shall be deemed to have been duly given and received on: (i) the date of service if served personally, by facsimile transmission or by electronic mail on the Party to whom notice is to be given at the address(es) provided below, (ii) on the first day after mailing, if mailed by Federal Express, U.S. Express Mail, or other similar overnight courier service, postage prepaid, and addressed as provided below, or (iii) on the third day after mailing if mailed to the Party to whom notice is to be given by first class mail, registered or certified, postage prepaid, addressed as follows:

CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT

City of San Bernardino Municipal Water Department
300 N. D Street, 5th Floor
San Bernardino California 92418
(909) 384-5141
Attention: General Manager

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT:

San Bernardino Valley Municipal Water District
380 E. Vanderbilt Way
San Bernardino, CA
(909) 387-9200
Attn: General Manager

A Party may change its address for notice by providing thirty days' advance written notice of such change to the other Party.

---------- SIGNATURES ON FOLLOWING PAGE ----------

CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT

By: Stacey Aldstadt
Stacey Aldstadt
General Manager

Dated: Sept. August 9, 2013.

Approved as to form only:

By:
Andrew M. Hitchings
Somach Simmons & Dunn

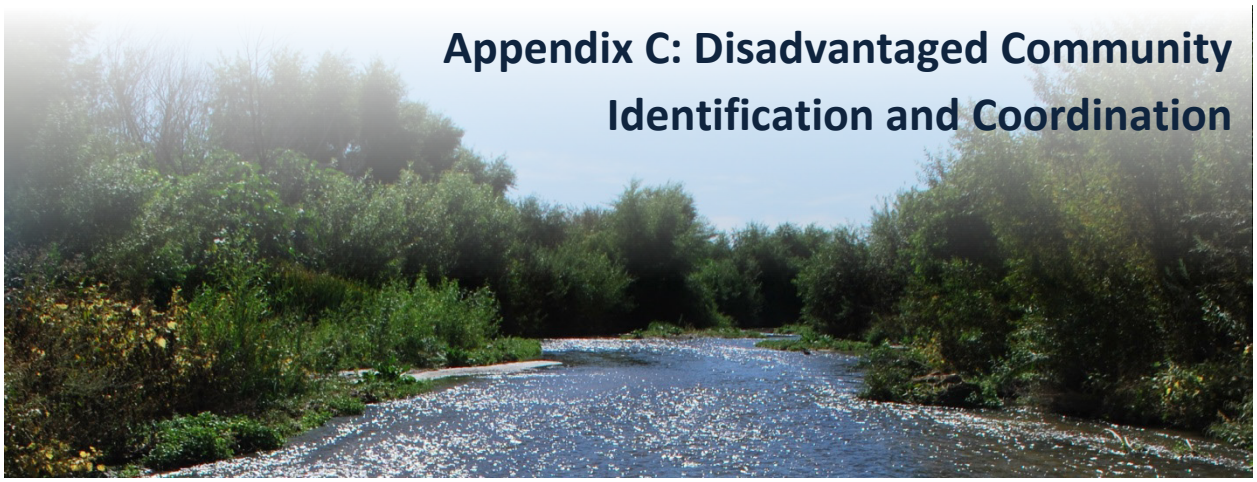
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

By: Douglas D. Headrick
Douglas Headrick
General Manager

Dated: Aug. 20, 2013.

Approved as to form only:

By:
David R.E. Aladjem
Downey Brand LLP



Appendix C: Disadvantaged Community Identification and Coordination

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Disadvantaged Community Identification and Coordination

An economically disadvantaged community (DAC) is defined by the State as a community with a median annual household income of 80 percent or less than the State median annual household income. In 2010, the State's annual median family income was $61,632. Figure 1 shows the economically disadvantaged communities in the Region.

DAC and severely disadvantaged community (SDAC) areas were identified and characterized by MHI for assessment. Census Bureau data was downloaded from the U.S. Department of Commerce, United States Census Bureau website[1]. It was extracted for use in this analysis using the 2010 American Community Survey; a comprehensive data set for the 5-year period of 2006-2010. For California the statewide MHI was $76,278.00. This MHI data by tract was used for mapping and characterization. In accordance with DWR guidance, the 2012 IRWM Guidelines[2] list if household income was below 80% of the MHI for California or $48,706(DWR) $46,285(SBVWCD), the community was considered a DAC. Additionally, if household income was below $33,325.00, the tract is mapped and shown as SDAC based on CDPH guidance website[3]. Population and other demographic data were used from the same source.

In order to more easily work with the many DAC and SDAC areas the tracts were aggregated into geographic area clusters. These clusters will allow better description and clarity as further work is completed. A total of nine clusters were identified and displayed in Figure 2. Each cluster is shows the MHI range from lowest to highest tract in the cluster area as well as the MHI for the cluster as a whole. Table 3 shows these values and the approximate population of the DAC and SDAC located within it. Table 4 shows the cities and water districts which cover all or part of the cluster and included a DAC or SDAC tract. It should be noted that some water districts and cities that lie within the cluster are not mentioned because they do not contain any DAC or SDAC tracts. Also, the approximate populations are only for the areas that contain DAC and SDAC tracts.

Identified DAC and SDAC Areas

For the entire upper watershed area of interest or IRWM boundary, the population in 2010 was approximately 1,051,094. Median Household Income (MHI) was $60,944.57 according to the American Community Survey, 5-yr California data set.

Within the IRWM area boundary three major areas were identified, West, East and Mountain communities. Each Cities or census designated place is shown in one of the three major areas for geographic classifications as indicated in Table 1.

[1] U.S. Department of Commerce, United States Census Bureau. http://www.census.gov/geo/maps-data/data/tiger-data.html

[2] California Department of Water Resources. 2012 Proposition 84 and 1E IRWM Guidelines. 2012 IRWM Guidelines. http://www.water.ca.gov/irwm/grants/guidelines.cfm

[3] California Department of Public Health. http://www.cdph.ca.gov/Pages/Default.aspx

Table 1: Geographic Classification by City

West	East	Mountains
• San Bernardino • Rialto • Riverside • Grand Terrance • Loma Linda • Highland • Rubidoux • Sunny Slope • Moreno Valley	• Redlands • Yucaipa • Calimesa • Cherry Valley • Beaumont	• Big Bear Lake • Big Bear • Crestline

Likewise the IRWM area includes the following water related agencies characterized by the same geographic classification, and are shown in Table 2.

Table 2: Geographic Classification by Water Agency

West	East	Mountains
• San Bernardino Valley Municipal Water District • West Valley Water District • San Bernardino City • Rialto City • Loma Linda City • East Valley Water District • Colton City • Western Municipal Water District • Rubidoux Community Services District • Riverside City • Jurupa Community Services District • Eastern Municipal Water District	• Redlands City • Yucaipa Valley Water District • South Mesa Water District • San Gorgonio Pass Water Agency • Beaumont Cherry Valley Water District • San Bernardino Valley Water Conservation District • San Bernardino Valley Municipal Water District • Western Heights Water Company	• Big Bear Lake City • Big Bear City Community Services District

As illustrated in Figure 1, a central area for DAC and SDAC occurs in the management area. This central area occurs between the east side of the City of San Bernardino and west side of City of Highland. This geographic area is identified as cluster area 1. From this central area the DAC and SDAC are somewhat scattered and other clusters are identified in the valley area outward towards Colton, Fontana and Riverside. In order to describe the areas they were assigned to clusters as illustrated below on Figure 2.

Figure 1: Water Providers and DAC Locations

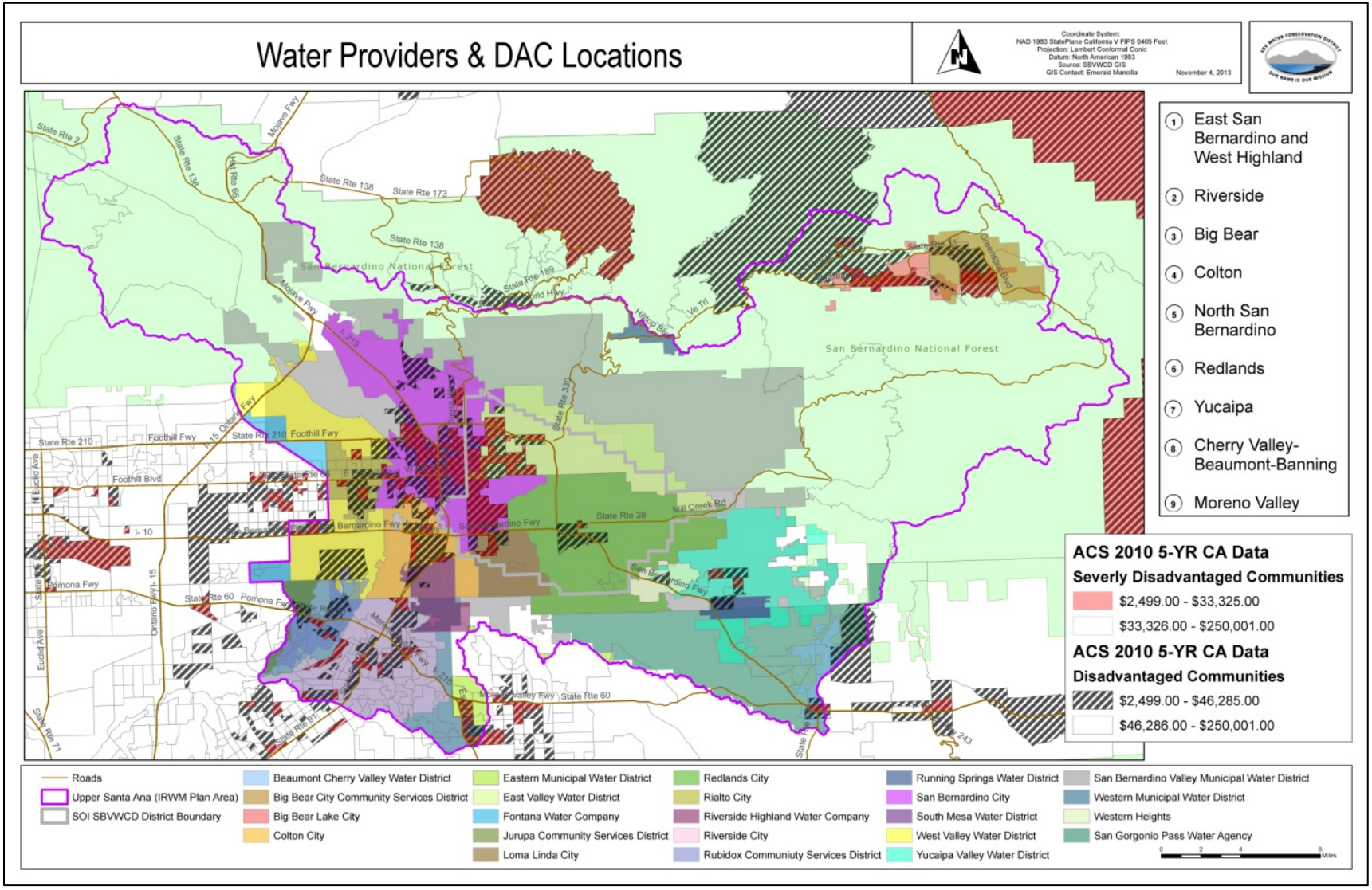
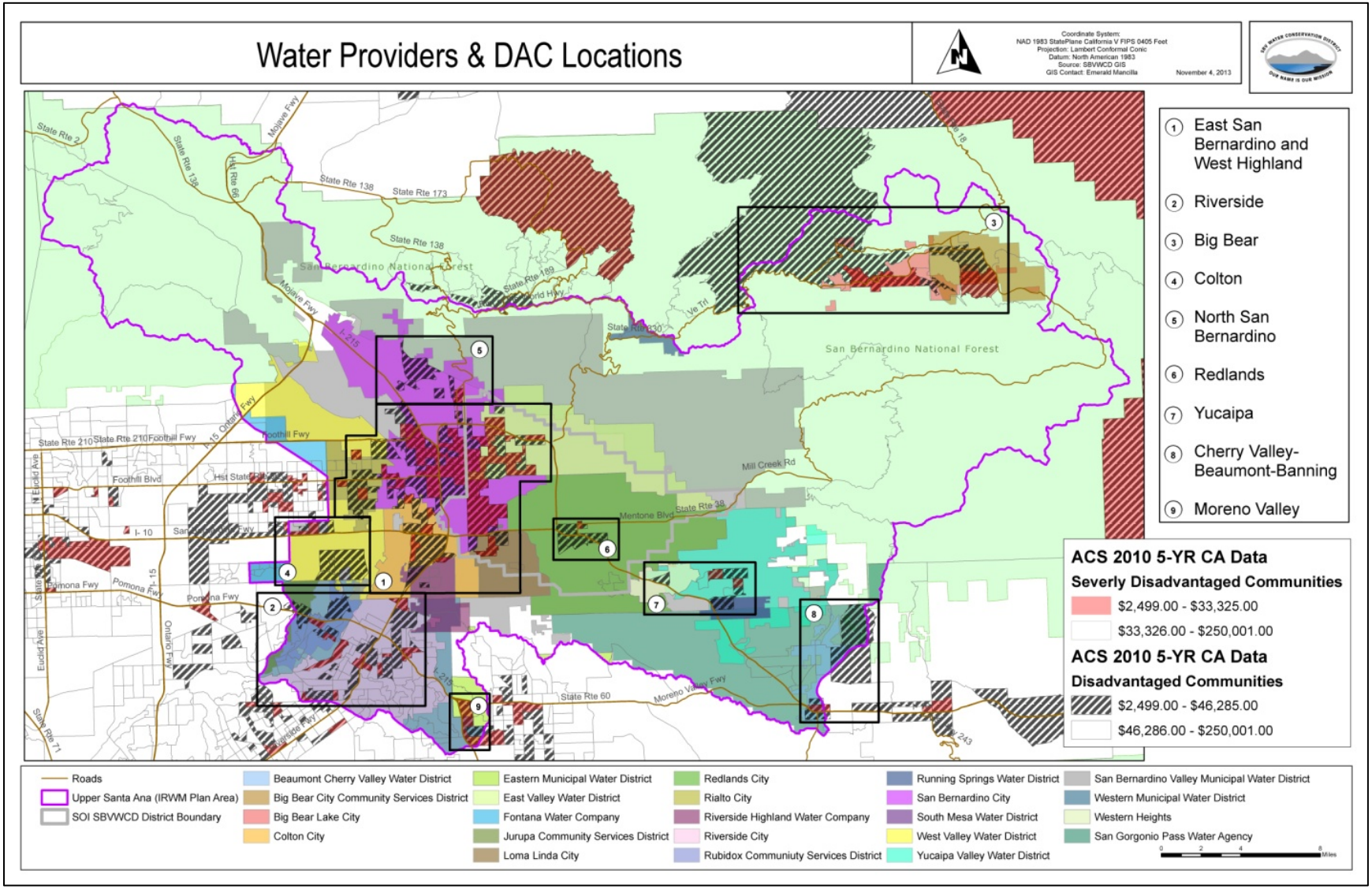


Figure 2: DAC Cluster Areas



East

- Cluster six contains two water districts and one city. The MHI is $33,432.00 and the approximate population is 11,334. There are seven DAC and one SDAC.
- Cluster seven contains four water districts and two cities. The MHI is $37,124.00 and the approximate population is 9,683. There are six DAC and two SDAC.
- Cluster eight contains two water districts and three cities. The MHI is $37,257.00 and the approximate population is 6,342. There are three DAC and one SDAC.

West

- Cluster one deals with eight water districts and six cities. This cluster out of the nine has the most DAC and SDAC. In total there are fifty five DAC and sixty six SDAC. The cluster area has an approximate population of 187,226 and median household income (MHI) of $30,814.00.
- Cluster two deals with four water districts and three cities. The MHI is $33,649.00 and median population is 53,136. It contains twenty five DAC and 13 SDAC.
- Cluster four contains two water districts and three cities. The MHI is $41,056.00 and approximate population is 14,841. There are 5 DAC and one SDAC.
- Cluster five contains two water districts and one city. The MHI is $39,347.00 and the approximate population is 29,725. There are five DAC and two SDAC.
- Cluster nine contains two water districts and three cities. The MHI is $32,439.00 and the approximate population is 5,253. There are two DAC and two SDAC.

Mountains

- Cluster three contains two water districts and two cities. The MHI is $31,898 and the approximate population is 9,183. There are six DAC and six SDAC.

In the USARW Region, more than 325,000 residents in 208 census tracts are considered as disadvantaged. Of the 208 tracts 45% are considered severely disadvantaged. However, the vast majority receive water supplies that meet all state and federal standards for water quality from the utility which serves the area they live in. The water agencies listed in Table 4 are participating in the update and serve the listed communities.

Table 3: Summary of Collected DAC-related Data

Cluster #	Water Districts**	Cities-County	Range of MHI (Low-High) MHI	Approximate Population	Total DAC	Total SDAC	IRWM Category
1	• West Valley Water District • San Bernardino City • Riverside Highland Water Company • Rialto City • Loma Linda City • East Valley Water District • Colton City • San Bernardino Valley Municipal Water District	• San Bernardino • Rialto • Colton • Grand Terrace • Loma Linda • Highland	($7,411-$45,750) $30,814.00	187,226	55	66	West
2	• Rubidoux Community Services District • Riverside City • Jurupa Community Services District • Western Municipal Water District	• Sunny Slope • Rubidoux • Riverside	($6,544-$46,231) $33,649.00	53,136	25	13	West
3	• Big Bear Lake City • Big Bear Community Services District	• Big Bear Lake • Big Bear	($18,553-$43,173) $31,898.00	9,183	6	6	Mountains
4	• West Valley Water District • San Bernardino Valley Municipal Water District	• Fontana • Bloomington • Rialto	($31,827-$45,749) $41,056.00	14,841	5	1	West
5	• San Bernardino City • San Bernardino Valley Municipal Water District	• San Bernardino City	($26,775-$46,159) $39,347.00	29,725	5	2	West
6	• Redlands City • San Bernardino Valley Municipal Water District	• Redlands	($27,188-$44,155) $33,432.00	11,334	7	1	East
7	• Yucaipa Valley Water District • South Mesa Water District • San Bernardino Valley Municipal Water District • Western Heights Water Company	• Yucaipa • Calimesa	($29,186-$44,179) $37,124.00	9,683	6	2	East
8	• Beaumont Cherry Valley Water District • San Gorgonio Pass Water Agency	• Cherry Valley • Beaumont • Banning • Calimesa	($27,031-$45,485) $37,257.00	6,342	3	1	East
9	• Eastern Municipal Water District • Western Municipal Water District	• Riverside • Moreno Valley • March AFB	($20,477-$43,984) $32,439.00	5,253	2	2	West

*Cities/County, Range of MHI, and Population details were not determined by cluster. Instead, they were determined based on the DAC/SDAC areas within each cluster.
**Valley District and Western MWD overlie most DAC areas, and Valley District overlies much of the Eastern Valley DAC areas.

Table 4: Water Districts and Cities/Counties Served

Water Districts	Cities/County
San Bernardino Valley Municipal Water District	• San Bernardino • Colton • Grand Terrace • Loma Linda • Highland • Fontana • Bloomington • Rialto • Redlands • Yucaipa
West Valley Water District	• Riverside, Co • San Bernardino, Co • Colton • Fontana • Rialto
San Bernardino City	• San Bernardino
Riverside Highland Water Company	• Colton • Grand Terrace • Riverside
Rialto City	• Rialto
Loma Linda City	• Loma Linda
East Valley Water District	• Highland
Colton City	• Colton
Western Municipal Water District	• Sunny Slope • Rubidoux • Riverside
Rubidoux Community Services District	• Rubidoux
Riverside City	• Riverside
Jurupa Community Services District	• Jurupa
Big Bear Lake City	• Big Bear City
Big Bear Community Services District	• Big Bear
Redlands City	• Redlands
Yucaipa Valley Water District	• Yucaipa • Calimesa
South Mesa Water District	• Calimesa
Western Heights Water Company	• Yucaipa
San Gorgonio Pass Water Agency	• Cherry Valley • Beaumont • Banning
Beaumont Cherry Valley Water District	• Beaumont • Cherry Valley
Eastern Municipal Water District	• Riverside

DAC Outreach Coordination

Distributed Approach and Organizations

The IRWM update group identified that DAC identification and outreach would be performed in two separate efforts for the update. The group through volunteers would prepare the section and preliminary analysis. Following a preliminary identification, organization and assessment described in section 2, the group would coordinate with participating entities for their outreach and results.

Coordination

On September 23, 2013 the IRWM update group met and discussed initial findings research and characterization. From this research determined that it was most feasible to have the local districts and agencies coordinate outreach for their areas. Because some of the efforts have been ongoing before the update and new efforts are planned, when results are obtained agencies will report them to the group for incorporation into the IRWM update on an ongoing basis until publication.

Inquiry and Outreach Results

Of the entities identified in Section 2.4 the three water agencies have reported their results in DAC communities. West Valley Water District (WVWD), Yucaipa Valley Water District (YVWD) and San Bernardino Valley Water Conservation District (SBVWCD) have characterized DAC and or SDAC areas in the boundaries.

West Valley Water District

West Valley Water District provided needs and project related to outreach they routinely do with the DAC areas in their District.

Yucaipa Valley Water District

Yucaipa Valley Water District provided needs and project related to outreach they routinely do with the DAC areas in their District.

San Bernardino Municipal Water Department

The San Bernardino Municipal Water Department provides feedback on the programs they use to serve the largest DAC areas in the region. The water and wastewater services are provided to DAC, SDAC and non-disadvantaged areas alike.

San Bernardino Valley Water Conservation District

San Bernardino Valley Water Conservation District identified Disadvantaged Unincorporated Communities in response to a sphere of interest and municipal service review in accordance with SB-244 and San Bernardino County Local Agency Formation Commission (LAFCO) guidance. LAFCO uses the same MHI level as the DWR guidance; however they focus on areas that are not in incorporated cities, because incorporated cities have powers and authorities to serve DAC communities in addition to those from any special district. The analysis indicates that in the IRWM Planning Region, more than 325,000 residents in 208 census tracts are considered disadvantaged. Of the 208 tracts 45% are considered severely disadvantaged. However, the vast majority receive water supplies that meet all state and federal standards for water quality from the utility which serves the area they live in. The water conservation and groundwater recharge services are provided to DAC, SDAC and non-disadvantaged areas alike.

Meetings and Documentation

Because coverage of DAC issues, separate from regular water or waste water service provision is a new element to planning most agencies indicated they will be incorporating this into their future efforts and will provide meeting and other documentation in the future. In most areas, the DAC

areas are served contiguous portions of the city or district for water supply, water quality and wastewater. City departments and districts have meetings with community representatives and customers in DAC and SDAC areas.

Recommendations

The IRWM group recommends the city departments and districts that have not already done so, undertake some organized outreach to DAC and SDAC areas in their jurisdiction, keep records of the interaction, needs and project ideas for future IRWM plan updates.

A large number of tracts in the Upper Santa Ana River watershed are classified as disadvantaged or severely disadvantaged based on the US Bureau of Census American Community Survey Median Household Income guidance. Nine cluster areas were identified in the three geographic regions of the plan. Cluster one is the largest by area and population. In the planning area, more than 325,000 residents in 208 census tracts are considered as disadvantaged. Of the 208 tracts 45% are considered severely disadvantaged. However, the vast majority receive water supplies that meet all state and federal standards for water quality from the utility which serves the area they live in. Areas with the largest concentrations of DAC and severely disadvantaged community (SDAC) residents have developed programs to assist the DAC members in paying their water related bills while still ensuring their water and wastewater service are meeting all applicable state and federal regulations. In these areas affordability can be a challenge which providers have special programs to assist residents and special grants may be available to households near the poverty level.

Water management strategies evaluated and considered for the IRWM Plan are designed to improve water supply reliability and water quality for these communities in the Region. The disadvantaged communities are dispersed throughout the Plan Area, and are served water by different water purveyors. The location of disadvantaged communities relative to project locations determines the range and extent of benefit a given project provides to an individual disadvantaged community.

For example, the larger, regional projects provide water supply reliability and/or water quality benefits to a water provider's service area or the Plan Area in total. While these projects do not specifically target disadvantaged communities, the benefits of the project may extend to one or more disadvantaged communities.

In addition there are individual projects located within the disadvantaged communities that directly benefit those areas by improving water supply reliability and/or water quality to the targeted disadvantaged community.

DAC Needs and Projects

While most participating water entities working on update of the IRWM Plan have initiated some effort to work with DAC or SDAC areas in their jurisdiction, two have provided detailed needs and potential projects responsive to the needs in their DACs.

Yucaipa Valley Water District

Yucaipa Valley Water District has disadvantaged community (DAC) sectors within its service area, shown as cluster 7 on Figure2.2. One DAC community is located in the western portion of the District boundary known as the Dunlap area. Yucaipa Valley Water District provides sewer service to a portion of this area and the water retailer is Western Heights Water Company. The additional DAC areas which are centrally located in the City of Yucaipa are within the Yucaipa Valley Water District and South Mesa Water District service area for water and sewer service.

YVWD – Septic System to Sewer Conversion

The most beneficial disadvantaged community project within the Yucaipa Valley Water District service area is the conversion of septic systems to sewer. Discontinuation of the use of septic tanks will improve the groundwater quality in the Yucaipa Basin. Connection to the sewer system will prevent groundwater contamination and replace failing septic systems. This conversion would benefit the lower DAC community known as Dunlap.

YVWD – Water Use Efficiency - Direct Installation

The DAC community centrally located in Yucaipa would consist of direct installation services of water efficient devices reducing cost impacts. Replacing older inefficient water devices becomes an effective way to control wasteful water practices and reduce costs. Direct installation offers a turnkey approach with a seamless process. Customers can achieve instant savings while water districts record additional water savings to meet the requirements of the Water Conservation Act of 2009 SBx 7-7.

West Valley Water District

West Valley Water District's (WVWD) service area boundary includes portions of the Cities of Rialto, Colton, Fontana and unincorporated areas of San Bernardino and Riverside County. There are several DACs within this area Identified in cluster 1 and 4 on Figure 2.2. The largest being the community of Bloomington. WVWD is currently completing construction of a state-of-the-art treatment plant that uses green technology to remove perchlorate from the water at a fraction of the cost of other methods, making this water available to local DACs .

Bloomington is an unincorporated area located in San Bernardino County with an estimated population of 23,900. Bloomington was originally developed as part of the land holdings and formed as a township of the Semi-Tropic Land and Water Company which was formed in 1887. Bloomington is a rural DAC area that consists of older homes and larger lots that residents use to raise horses. WVWD is the main water supplier for this area, which is in DAC cluster 4.

The Bloomington Municipal Advisory Commission (MAC) is a Council made up of 5 members of the community that are appointed by the County Supervisor for that area. The MAC has been around for over 20 years and meets on a monthly basis to discuss issues, concerns and events that are taking place. Currently, two of West Valley Water District's Board members also serve as Council members on the MAC. At each of the meetings, Board members announce their involvement with the Water District so the residents at this time can voice concerns or questions they may have. The MAC promotes its meetings by announcing them in the local paper, through social media and letters are sent to residents from the County. From time to time when there is an important issue involving the District the General Manager and Assistant General Manager will attend these meetings and make presentations to the community. Also in the spring of 2013 the District started a newsletter specifically for the residents of Bloomington to enhance the District's communication with these customers.

Current WVWD Projects to assist the DAC area

In order to provide customers with a reliable water supply, the District embarked on a multi-year project in the Bloomington area to replace aging infrastructure. This project includes the construction of new waterlines, fire hydrants and water services. Construction on the first phase of this project is already underway.

Need and Project for Bloomington DAC Area

Residential Audit and Direct Install Services Project - Residents of this area have expressed the need for access to residential water conservation products that they cannot afford. In DACs and

especially this community homeowners and landlords cannot afford to replace old water inefficient fixtures. The district proposed a project supporting a program of direct install services for DAC water conservation. This program would target the DAC communities and the residents that are consuming water above a conservation threshold. This program would review water usage history and perform water audits for residential properties. An audit report identifying water saving opportunities and installation of equipment including faucet aerators, showerheads, high efficiency toilets, smart controllers and rotary irrigation nozzles will be installed in accordance with the audit report. The District would provide community outreach events and efforts to promote the program services and answer any questions.

City of San Bernardino Municipal Water Department

By far the largest area by population and tracts is cluster one. A large portion of cluster one is within the City of San Bernardino. The City of San Bernardino Municipal Water Department (SBMWD) has a long history of interaction with the DAC communities in their service area. In response they provide a number of special services residents and businesses in their service area. These services do not specifically apply to any IRWM Grant funded programs. However these model programs are include for information and because of these services the DAC and SDACs served by SBMWD do not have water supply and/or water quality issues and the same level of service applies to all. Many of these DAC related services are described below:

Extended Notice

SBMWD provides special water bill payment services for its customers especially disadvantaged customers. The programs meet or exceed the minimum legal requirements in regards to all residential customers, (including disadvantaged customers), and the delinquency process. By law the SBMWD is required to provide customers with three notifications prior to delinquency action, which may include interruption of water service. The notices are: 1. the original bill, 2. a reminder notice, and 3. a final shut-off notice. In addition, SBMWD provides a second reminder notice contained within the following month's bill.

Account Extensions

SBMWD offers all customers (including disadvantaged customers) the opportunity for a minimum of six account extensions per year. An account extension occurs when a customer requests and is granted protection from any delinquency action, including interruption of water service, with no money down for up to a month, giving them time to pay their bill.

Payment Plans

SBVMWD offer customers (including disadvantaged customers) the option of a payment plan, which is a long term payment arrangement. The customer normally starts a payment plan with a down payment, and the account balance is amortized over a one year or less, but can be extended to two years. The customer pays their current bill plus a fixed portion of their past bill in arrears. Under this arrangement the customer is not charged interest and is protected from any delinquency action for as long as they stay current on the payment plan.

Customer Assistance Program

The Customer Assistance Program (CAP) is provided to disadvantaged residential customers who are at or below the county poverty income threshold with a sixty dollar ($60.00) annual reduction in their water bill. This is done by giving a five dollar ($5.00) rebate on their monthly water bill to assist them in affording water and wastewater service.

Special Notification

The Third Party Notification service is available and supports DAC households, the elderly and disabled. Customers can request SBVMWD automatically send duplicate delinquency notices to a family member or caretaker whenever the account first becomes delinquent, well in advance of a potential interruption of water service.

Medical Alert Notification

The Medical Alert Notification system supports customers who have provided acceptable documentation that loss of water would be life threatening and water is not shut off in the normal delinquency process.

Multilingual Services

A significant portion of low income customers of the District speak only Spanish all critical customer functions, customer service counter, call center, cashiering, and field service staff have Spanish bi-lingual employees who can assist customers on the phone, in person and in the field.

Due to continuous interaction with DAC residents no specific needs or documents is developed for outreach or needs. No specific projects were identified by the SBMWD, however these model programs may be useful in other areas which server large DAC and SDAC communities.

Potential Projects Summary

DAC Water Conservation efforts and projects are proposed for Yucaipa and West Valley Districts DAC areas as a way to reduce water waste and reduce cost to the DAC's they serve. This approach has been viable in other areas and as individually or combined regional project. YVWD identified DAC need for septic to sewer conversion to both improve long term water quality as well as increase compliance with ordinances for connection.

Other Grant Opportunities

The IRWM update group also reviewed water costs and household income. Several grant entities offer additional grant availability for areas where water costs more than set percentages of MHI. The California Department of Public Health offers special DAC grant options when 1.5% of MHI is expended for water. Significant areas of the valley meet this criterion. The US Environmental Protection Agency has programs for areas where 2.5% of MHI is expended for water. The World Health Organization and California Water Plan identify critical water affordability, an indicator of assistance at 3% and 2% respectively. Figure 4-1 shows significant areas qualify by income and average water rate for these income based water supply grant programs. Some areas shown in Figure 4-1 have incomes below the poverty line for the average household size for the area.

Appendix D: 2012 DWR IRWM Plan Standards Form



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INTRODUCTION

IRWM planning regions must have an IRWM Plan that has been reviewed and deemed consistent with the 2012 IRWM Plan Standards by DWR for eligibility to receiving Round 3 Proposition 84 funding. This 2012 IRWM Plan Standards Review Form for DWR staff use provides a consistent means in determining whether the 2012 IRWM Guidelines are being addressed in the IRWM Plan. It is part of the Plan Review Process that will begin prior to Round 3 solicitation. The form is similar to a grant application review form in that there is a checklist for each of the 16 Plan Standards and narrative evaluations where required. However, the evaluation is pass/fail; there is no numeric scoring. Each Plan Standard is either sufficient or not based on its associated requirements. Each Standard consists of between one and fourteen requirements. A Yes or No is automatically calculated in each Plan Standard header based on the individual requirement evaluations. In general, a passing score of "C" (i.e. 70% of the requirements for a given Plan Standard) is required for a Standard to pass. Standards with only one or 2 requirements will need one or both of those requirements to pass. Standards with 3 requirements will need at least 2 of the requirements to pass. Standards with 4 or 5 requirements will need at least 3 to pass. Some plan elements are legislated requirements. Such plan elements must be met in order to be considered consistent with plan standards. A summary of the sufficiency of each Standard is automatically calculated on the Standards Summary worksheet. A "No" evaluation indicates that a Standard was not met due to insufficient requirements comprising the Standard. The evaluation for each Plan Standard and any associated insufficiencies is automatically compiled on the Standards Summary page. Additional reviewer comments may be added at the bottom of each standards work sheet.

Note: This review form is meant to be a tool used in conjunction with the 2012 IRWM Guidelines document to assist in the evaluation of IRWM plans. It is not designed to be a substitute for the Guidelines document itself. Reviewers must use the Guidelines in determining plan consistency.

DEFINITION OF TABLE HEADINGS

IRWM Plan Standard: As named in the November 2012 IRWM Prop 84 and 1E Guidelines.

Overall Standard Sufficient: This field is either "YES" or "NO" and is automatically calculated based on the "Sufficient" column described below. If all fields are "y", the overall standard is deemed sufficient. Any entry other than a "y" in the Sufficient column (i.e. "n", ?, not sure, more detail needed, etc.) results in a NO.

Plan Standard Requirements Which Must Be Addressed **Fields with an asterisk * are required by legislation to be included in an IRWM Plan.**

Requirement	Requirements are taken directly from the November 2012 Guidelines.
Included	Is the Guideline Requirement included in the IRWM Plan? The options are: y = yes, requirement is included in the IRWMP; or n = no, requirement is not included in the IRWMP. If only y or n then presence/absence of the requirement is sufficient for evaluation. If there is a "q" (qualitative) then add a brief narrative, similar to a Grant Application Review public evaluation or supporting information.
Plan Standard Source	
2012 IRWM Grant Program Guidelines Source Page(s)	Page(s) in the Guidelines (November 2012) which pertain to the Requirement.
Legislative Support and/or Other Citations	The CWC or other regulations that pertain to the Requirement, **if applicable**. This is for reference purposes. The cell links to a weblink of the regulatory code.
Evidence of Sufficiency	
Location of Standard in Grantee IRWM Plan	The page(s) or sections in the IRWM Plan where information on the Requirement can be found. This can be specific paragraphs or entire chapters for more general requirements.
Brief Qualitative Evaluation Narrative	Supporting information for the Requirement if a "q" is in the Included column. This can be just a few sentences or a paragraph and can be taken directly from the IRWM Plan. Comments or supporting information may be entered regardless of whether required.
Sufficient	Is the Guidelines requirement sufficiently represented in the IRWM Plan (y/n).

2012 IRWM Plan Standards Review Form

Regional Acceptance Process Planning Region: Not
Regional Water Management Group: Basin Technical Advisory Committee
IRWM Plan Title: Upper Santa Ana River Watershed Integrated Regional Water Management Plan Update
DWR Reviewer:

PLAN IS SUFFICIENT

IRWM Plan Standard	Overall Standard Sufficient	Requirement(s) Insufficient
Governance	Yes	
Region Description	Yes	
Objectives	Yes	
Resource Management Strategies	Yes	
Integration *	Yes	
Project Review Process	Yes	
Impact and Benefit	Yes	
Plan Performance and Monitoring	Yes	
Data Management	Yes	
Finance	Yes	
Technical Analysis	Yes	
Relation to Local Water Planning	Yes	
Relation to Local Land Use Planning	Yes	
Stakeholder Involvement	Yes	
Coordination	Yes	
Climate Change	Yes	

* If not included as an individual section use Governance, Project Review Process, and Data Management Standards per November 2012 Guidelines, p. 44.

Additional Comments:

IRWM Plan Standard: Governance						Overall Standard Sufficient	Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Regulatory and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Evaluation Narrative**	**y/n**
Document a governance structure to ensure updates to the IRWM Plan							
The name of the RWMG responsible for implementation of the IRWMP	**y/n**		**18/35**	CWC §10539	Sections 1.1, 1.4.1		
A description of the IRWM governance structure	**y/n**		**19/36**		Section 1.4		
A description of how the chosen form of governance **addresses** and **ensures**:							
Public outreach and involvement processes	**y/n/q**		**19/36-37**	§10540, §10541	Section 1.4, Appendix D		
Effective decision making	**y/n/q**		**19/37**		Section 1.4.2		
Balanced access and opportunity for participation in the IRWM process	**y/n/q**		**19/37**		Sections 1.4.1, 1.4.2		
Effective communication – both internal and external to the IRWM region	**y/n/q**		**19/37-38**		Section 1.4.3		
Long term implementation of the IRWM Plan	**y/n/q**		**19/38**		Sections 1.4.1, 1.4.2		
Coordination with neighboring IRWM efforts and State and federal agencies	**y/n/q**		**19/38**		Sections 1.4.3, 1.5		
The collaborative process(es) used to establish plan objectives	**y/n/q**		**19/38**		Sections 1.4.2, Section 4.2.2		
How interim changes and formal changes to the IRWM Plan will be performed	**y/n/q**		**19/38**		Section 7.1.3		
Updating or amending the IRWM Plan	**y/n/q**		**19/38**		Section 7.1.3		
Publish NOI to prepare/update the plan; adopt the plan in a public meeting	**y/n/q**		**35**	CWC §10543	Section 1.3		

IRWM Plan Standard: Region Description						Overall Standard Sufficient	Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Legislative Support and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Evaluation Narrative**	**y/n**
If applicable, describe and explain how the plan will help reduce dependence on the Delta supply regionally	**y/n**	**y**	**20**	--	Sections 4.3.1, 7.1.6		
Describe watersheds and water systems	**y/n**	**y**	**19/39**	PRC §75026.(b)(1) and CWP Update 2009	Section 2.1,		
Describe internal boundaries	**y/n**	**y**	**19/39**	--	Throughout Chapter 2		
Describe water supplies and demands for minimum 20 year planning horizon	**y/n**	**y**	**19/39**	--	Throughout Chapter 3		
Describe water quality conditions	**y/n**	**y**	**19/40**	--	Sections 2.4.4, 2.5		
Describe social and cultural makeup, including specific information on DACs and tribal communities in the region and their water challenges.	**y/n/q**	**y**	**19/40**	--	Section 2.8		
Describe major water related objectives and conflicts *	**y/n/q**	**y**	**19/40**	§10541. (e)(3)	Sections 1.2, 2.4, 2.5, 4.2.1		
Explain how IRWM regional boundary was determined and why region is an appropriate area for IRWM planning.	**y/n/q**	**y**	**19/40**	--	Sections 1.1, 1.2		
Describe neighboring and/or overlapping IRWM efforts	**y/n**	**y**	**19/40**	--	Section 1.5		
Explain how opportunities are maximized (e.g. people at the table, natural features, infrastructure) for integration of water management activities	**y/n**	**y**	**38**	--	Sections 1.4, 1.5		

* Requirement must be addressed.

IRWM Plan Standard: Objectives						Overall Standard Sufficient	Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Legislative Support and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Qualitative Narrative**	**y/n**
Through the objectives or other areas of the plan, the 7 items on pg 41 of GL are addressed.*	**y/n**	y	**20/40 - 41**	§10540.(c)	Throughout Chapter 3		
Describe the collaborative process and tools used to establish objectives: - How the objectives were developed - What information was considered (i.e., water management or local land use plans, etc.) - What groups were involved in the process - How the final decision was made and accepted by the IRWM effort	**y/n**	y	**20/41**	--	Section 4.2, 4.3		
Identify quantitative or qualitative metrics and measureable objectives: Objectives must be measurable - there must be some metric the IRWM region can use to determine if the objective is being met as the IRWM Plan is implemented. Neither quantitative nor qualitative metrics are considered inherently better. *	**y/n/q**	y	**20/41 - 42**	10541.(e)	Section 8.1		
Explain how objectives are prioritized or reason why the objectives are not prioritized	**y/n/q**	y	**20/42-43**	--	Section 4.3.5		
Reference specific overall goals for the region: RWMGs may choose to use goals as an additional layer for organizing and prioritizing objectives, or they may choose to not use the term at all.	**y/n**	y	**43**	--	Section 4.3		

* Requirement must be addressed.

IRWM Plan Standard: Resource Management Strategies (RMS)					Overall Standard Sufficient		Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Legislative Support and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Evaluation Narrative**	**y/n**
Identify RMS incorporated in the IRWM Plan: Consider all California Water Plan (CWP) RMS criteria (29) listed in Table 3 from the CWP Update 2009 *	**y/n**		**20/43**	CWP Update 2009 Volume II; 10541(e)(1)	Section 5.1		
Consideration of climate change effects on the IRWM region must be factored into RMS	**y/n**		**20/43**	--	Section 5.1		
Address which RMS will be implemented in achieving IRWM Plan Objectives	**y/n**		**44**	--	Section 5.1		

* Requirement must be addressed.

IRWM Plan Standard: Integration						Overall Standard Sufficient	Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Legislative Support and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Evaluation Narrative**	**y/n**
Contains structure and processes for developing and fostering integration [1]: - Stakeholder/institutional - Resource - Project implementation	**y/n/q**	**y**	**20/44 - 45**	§10540.(g); §10541.(h)(2)	Stakeholder/Institutional: Section 1.4 Resource/Project Implementation: Section 5.3		

1. If not included as an individual section use Governance, Project Review Process, and Data Management Standards per November 2012 Guidelines, p. 44.

IRWM Plan Standard: Project Review Process						Overall Standard Sufficient	Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Regulatory and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Evaluation Narrative**	**y/n**
Process for projects included in IRWM plan must address 3 components: - procedures for submitting projects - procedures for reviewing projects - procedures for communicating lists of selected projects	**y/n**	y	**20/45**		Throughout Chapter 6		
Does the project review process in the plan incorporate the following factors:							
How a project contributes to plan objectives	**y/n**	y	**20**		Section 6.2		
How a project is related to Resource Management Strategies identified in the plan.	**y/n**	y	**20**		Section 6.2		
The technical feasibility of a project.	**y/n**	y	**20**		Section 6.2, 6.3		
A projects specific benefits to a DAC water issue.	**y/n**	y	**20**	§75028.(a)	Section 6.2, 6.3		
Environmental Justice considerations.	**y/n**	y	**20**		Section 6.2, 6.3		
Project costs and financing	**y/n**	y	**20**		Section 6.2, 6.3		
Address economic feasibility	**y/n**	y	**21**		Section 6.2, 6.3		
Project status	**y/n**	y	**21**		Section 6.2, 6.3		
Strategic implementation of plan and project merit	**y/n**	y	**21/48**		Section 6.2, 6.3		
Project's contribution to climate change adaptation	**y/n**	y	**21**		Section 6.2, 6.3		
Contribution of project in reducing GHGs compared to project alternatives	**y/n**	y	**21**		Section 6.2, 6.3		
Status of the Project Proponent's IRWM plan adoption	**y/n**	y	**21**		Section 6.2		
Project's contribution to reducing dependence on Delta supply (for IRWM regions receiving water from the Delta).	**y/n**	y	**21**		Section 6.2, 6.3 (incorporated as a part of objectives)		

IRWM Plan Standard: Impact and Benefit						Overall Standard Sufficient	Yes
Requirement	Included		Plan Standard Source		Evidence of Sufficiency		Sufficient
From IRWM Guidelines	y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.		2012 IRWM Grant Program Guidelines Source Page(s)	Legislative Support and/or Other Citations	Location of Standard in Grantee IRWM Plan	Brief Evaluation Narrative	y/n
Discuss potential impacts and benefits of plan implementation within IRWM region, between regions, with DAC/EJ concerns and Native American Tribal communities	y/n		21	--	Section 7.4		
State when a more detailed project-specific impact and benefit analysis will occur (prior to any implementation activity)	y/n		49	--	Section 7.4		
Review and update the impacts and benefits section of the plan as part of the normal plan management activities	y/n		50	--	Section 8.3		

IRWM Plan Standard: Plan Performance and Monitoring						Overall Standard Sufficient	Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Legislative Support and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Evaluation Narrative**	**y/n**
Contain performance measures and monitoring methods to ensure that IRWM objectives are met *	**y/n**		**21/53**	PRC §75026.(a)	Section 8.1		
Contain a methodology that the RWMG will use to oversee and evaluate implementation of projects.	**y/n**		**21/53**		Section 8.1		

* Requirement must be addressed.

IRWM Plan Standard: Data Management						Overall Standard Sufficient	Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Regulatory and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Evaluation Narrative**	**y/n**
Describe data needs within the IRWM region	**y/n**		**54**	--	Section 8.2.1		
Describe typical data collection techniques	**y/n**		**54**	--	Section 8.2.1, Appendix K		
Describe stakeholder contributions of data to a data management system	**y/n**		**54**	--	Section 8.2.1		
Describe the entity responsible for maintaining data in the data management system	**y/n**		**54**	--	Section 8.2.2		
Describe the QA/QC measures for data	**y/n**		**54**	--	Sections 8.2.1, 8.2.2, Appendix K		
Explain how data collected will be transferred or shared between members of the RWMG and other interested parties throughout the IRWM region, including local, State, and federal agencies *	**y/n**		**54**	--	Sections 8.2.1, 8.2.2, Appendix K		
Explain how the Data Management System supports the RWMG's efforts to share collected data	**y/n**		**54**	--	Sections 8.2.1, 8.2.2, Appendix K		
Outline how data saved in the data management system will be distributed and remain compatible with State databases including CEDEN, Water Data Library (WDL), CASGEM, California Environmental Information Catalog (CEIC), and the California Environmental Resources Evaluation System (CERES).	**y/n**		**54**	--	Sections 8.2.1, 8.2.2, Appendix K		

* Requirement must be addressed.

IRWM Plan Standard: Finance						Overall Standard Sufficient	Yes
Requirement	Included		Plan Standard Source		Evidence of Sufficiency		Sufficient
From IRWM Guidelines	y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.		2012 IRWM Grant Program Guidelines Source Page(s)	Legislative Support and/or Other Citations	Location of Standard in Grantee IRWM Plan	Brief Evaluation Narrative	y/n
Include a programmatic level (i.e. general) plan for implementation and financing of identified projects and programs* including the following:	y/n	y	21	§10541.(e)(8)	Section 7.2		
List known, as well as, possible funding sources, programs, and grant opportunities for the development and ongoing funding of the IRWM Plan.	y/n		21		Section 7.2.1		
List the funding mechanisms, including water enterprise funds, rate structures, and private financing options, for projects that implement the IRWM Plan.	y/n		21		Section 7.2.1		
An explanation of the certainty and longevity of known or potential funding for the IRWM Plan and projects that implement the Plan.	y/n		21		Section 7.2.2		
An explanation of how operation and maintenance (O&M) costs for projects that implement the IRWM Plan would be covered and the certainty of operation and maintenance funding.	y/n		21		Section 7.2.2		

* Requirement must be addressed.

IRWM Plan Standard: Technical Analysis						Overall Standard Sufficient	Yes
Requirement	Included		Plan Standard Source		Evidence of Sufficiency		Sufficient
From IRWM Guidelines	y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.		2012 IRWM Grant Program Guidelines Source Page(s)	Legislative Support and/or Other Citations	Location of Standard in Grantee IRWM Plan	Brief Evaluation Narrative	y/n
Document the data and technical analyses that were used in the development of the plan *	y/n		22	--	Section 1.3.3		

* Requirement must be addressed.

IRWM Plan Standard: Relation to Local Water Planning						Overall Standard Sufficient	Yes
Requirement	Included		Plan Standard Source		Evidence of Sufficiency		Sufficient
From IRWM Guidelines	y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.		2012 IRWM Grant Program Guidelines Source Page(s)	Legislative Support and/or Other Citations	Location of Standard in Grantee IRWM Plan	Brief Evaluation Narrative	y/n
Identify a list of local water plans used in the IRWM plan	y/n		22	§10540.(b)	Section 1.3.3		
Discuss how the plan relates to these other planning documents and programs	y/n		22		Section 1.3.3		
Describe the dynamics between the IRWM plan and other planning documents	y/n		22		Section 1.3.3, 7.1.5		
Describe how the RWMG will coordinate its water mgmt planning activities	y/n		58		Section 7.1.5		

IRWM Plan Standard: Relation to Local Land Use Planning						Overall Standard Sufficient	Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Legislative Support and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Evaluation Narrative**	**y/n**
Document current relationship between local land use planning, regional water issues, and water management objectives	**y/n**	y	**22/59 - 62**	--	Section 1.3.3		
Document future plans to further a collaborative, proactive relationship between land use planners and water managers	**y/n**	y	**22/59 - 62**	--	Section 7.1.5		

IRWM Plan Standard: Stakeholder Involvement						Overall Standard Sufficient	Yes
Requirement	Included		Plan Standard Source		Evidence of Sufficiency		Sufficient
From IRWM Guidelines	y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.		2012 IRWM Grant Program Guidelines Source Page(s)	Legislative Support and/or Other Citations	Location of Standard in Grantee IRWM Plan	Brief Evaluation Narrative	y/n
Contain a public process that provides outreach and opportunity to participate in the IRWM plan *	y/n	y	22/63	§10541.(g)			
Identify process to involve and facilitate stakeholders during development and implementation of plan regardless of ability to pay; include barriers to involvement *	y/n	y	64	§10541.(h) (2)	Sections 1.3.2, 1.4		
Discuss involvement of DACs and tribal communities in the IRWM planning effort	y/n	y	23	--	Section 1.4, Appendix D		
Describe decision-making process and roles that stakeholders can occupy	y/n	y	23	--	Sections 1.3.2, 1.4.1		
Discuss how stakeholders are necessary to address objectives and RMS	y/n	y	23	--	Section 1.4.3		
Discuss how a collaborative process will engage a balance in interest groups	y/n	y	23	--	Section 1.4		

* Requirement must be addressed.

IRWM Plan Standard: Coordination						Overall Standard Sufficient	Yes
Requirement	Included		Plan Standard Source		Evidence of Sufficiency		Sufficient
From IRWM Guidelines	y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.		2012 IRWM Grant Program Guidelines Source Page(s)	Legislative Support and/or Other Citations	Location of Standard in Grantee IRWM Plan	Brief Evaluation Narrative	y/n
Identify the process to coordinate water management projects and activities of participating local agencies and stakeholders to avoid conflicts and take advantage of efficiencies *	**y/n**	y	**23/65**	§10541.(e)(13)	Section 1.4		
Identify neighboring IRWM efforts and ways to cooperate or coordinate, and a discussion of any ongoing water management conflicts with adjacent IRWM efforts	**y/n**	y	**23/65**	--	Section 1.5		
Identify areas where a state agency or other agencies may be able to assist in communication or cooperation, or implementation of IRWM Plan components, processes, and projects, or where State or federal regulatory decisions are required before implementing the projects.	**y/n**	y	**23**	--	Sections 1.4, 1.5		

* Requirement must be addressed.

IRWM Plan Standard: Climate Change						Overall Standard Sufficient	Yes
Requirement	**Included**		**Plan Standard Source**		**Evidence of Sufficiency**		**Sufficient**
From IRWM Guidelines	**y/n - Present/Not Present in the IRWMP. If y/n/q qualitative evaluation needed.**		**2012 IRWM Grant Program Guidelines Source Page(s)**	**Legislative Support and/or Other Citations**	**Location of Standard in Grantee IRWM Plan**	**Brief Evaluation Narrative**	**y/n**
Evaluate IRWM region's vulnerabilities to climate change and potential adaptation responses based on vulnerabilities assessment in the DWR Climate Change Handbook for Regional Water Planning *	**y/n**	y	**23/66 - 73**	Climate Change Handbook vulnerability assessment: http://www.water.ca.gov/climatechange/CCHandbook.cfm; November 2012 Guidelines Legislative and Policy Context, p. 66 §10541.(e)(11)	Section 2.10, Section 4.2.1		
Provide a process that considers GHG emissions when choosing between project alternatives *	**y/n**	y	**23/68**		Sections 6.1.2, 6.1.3		
Include a list of prioritized vulnerabilities based on the vulnerability assessment and the IRWM's decision making process.	**y/n**	y	**23/66 - 73**		Section 4.2.1		
Contain a plan, program, or methodology for further data gathering and analysis of prioritized vulnerabilities	**y/n**	y	**23/66 - 73**		Sections 8.1, 8.3		
Include climate change as part of the project review process	**y/n**	y	**23/68**		Sections 6.1.2, 6.1.3		

* Requirement must be addressed.

Regulatory Citation	Link	Notes
IRWM Prop 84 and 1E Guidelines	http://www.water.ca.gov/irwm/grants/docs/Guidelines/GL_2012_FINAL.pdf	DWR November 2012 Guidelines - Final
CWC §10539	http://www.leginfo.ca.gov/cgi-bin/displaycode?section=wat&group=10001-11000&file=10532-10539	
CWC §10540, §10541	http://www.leginfo.ca.gov/cgi-bin/displaycode?section=wat&group=10001-11000&file=10540-10543	
CWC §10543	http://www.leginfo.ca.gov/cgi-bin/displaycode?section=wat&group=10001-11000&file=10540-10543	
PRC §75026, §75028, CWP Update 2009, and California Watershed Portal	http://www.leginfo.ca.gov/cgi-bin/displaycode?section=prc&group=75001-76000&file=75020-75029.5	The Department of Water Resources shall give preference to proposals that satisfy the criteria specified in PRC §75026.(b)(1). §75028.(a) - the department shall defer to approved local project selection, and review projects only for consistency with the purposes of Section 75026.
	http://www.waterplan.water.ca.gov/cwpu2009/index.cfm	2009 California Water Plan Volumes I and II
	http://www.conservation.ca.gov/dlrp/watershedportal/Pages/Index.aspx	California Watershed Portal
§10541. (e)(3)	http://www.leginfo.ca.gov/cgi-bin/displaycode?section=wat&group=10001-11000&file=10540-10543	

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Appendix E: Greenhouse Gas Emissions Calculator



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Greenhouse Gas Emissions Calculator

The Greenhouse Gas Emissions Calculator was developed as part of a Basin Study of the Santa Ana River in a partnership between the Santa Ana Watershed Project Authority and The United States Department of the Interior Bureau of Reclamation. It has been used here to calculate the annual metric tons of carbon dioxide equivalent in the Upper Santa Anna River watershed produced by water agencies, including both suppliers and that providing water treatment. The spreadsheet is reliant on the population over a sixty year period, but additional regionally specific information such as the per capita water usage, the percentage of the sources of water, and the average daily flow to potable water treatment plants over a sixty year period can be added for a more accurate description of the region. Additional regionally specific information may also be added for greater accuracy.

Default data for population projections for Southern California are provided in the calculator, but population growth may also be inputted as projected population, decadal growth rate, or annual growth rate. Population data for the current, 1990, 2000, and 2010 years are the only data that are necessary to run the model. Table 1 is the calculated population levels for the Upper Santa Ana River Water IRWM Plan area. These values were used consistently throughout the model.

Table 1: Population Data

Year	Population
1990	713,269
2000	938,989
2010	1,130,102
Current	1,175,306

Per capita water usage, in gallons per capita per day (gaped), has a default level for Southern California set at 209 gallons per capita per day. Ideally per capita water usage should be entered for the current, 1990, 2000, and 2010 years in gallons per capita per day if available, but these values are not necessary to run the model. Projected per capita water usage can be entered if available, or a decadal or annual growth rate, to view the effects of water usage on greenhouse gas emissions. A water district average of 294 gpcd weighted by population served was used as the current per capita water usage.

Table 2: Per Capita Water Usage

Agency	Baseline Water Use (gpcd)
East Valley Water District	342
City of Loma Linda	255
City of Redlands	365
City of San Bernardino	249
West Valley Water District	316
Yucaipa Valley Water District	291
City of Colton	241
Weighted Average	**294**

Water supply percentage values for the amount of groundwater, State Water, Project water, Colorado River water, and self-supplied water should be provided. Default values for Southern California are given, but more accurate percentages should be applied if available. Self-supplied

water is any water that is not imported and is only treated and distributed (recycled and surface water). If it is placed into the ground water supply, it is considered groundwater, to prevent from under or over calculation of energy usage for treatment.

Table 3: Water Supply Portfolio for the Upper Santa Ana River Wash

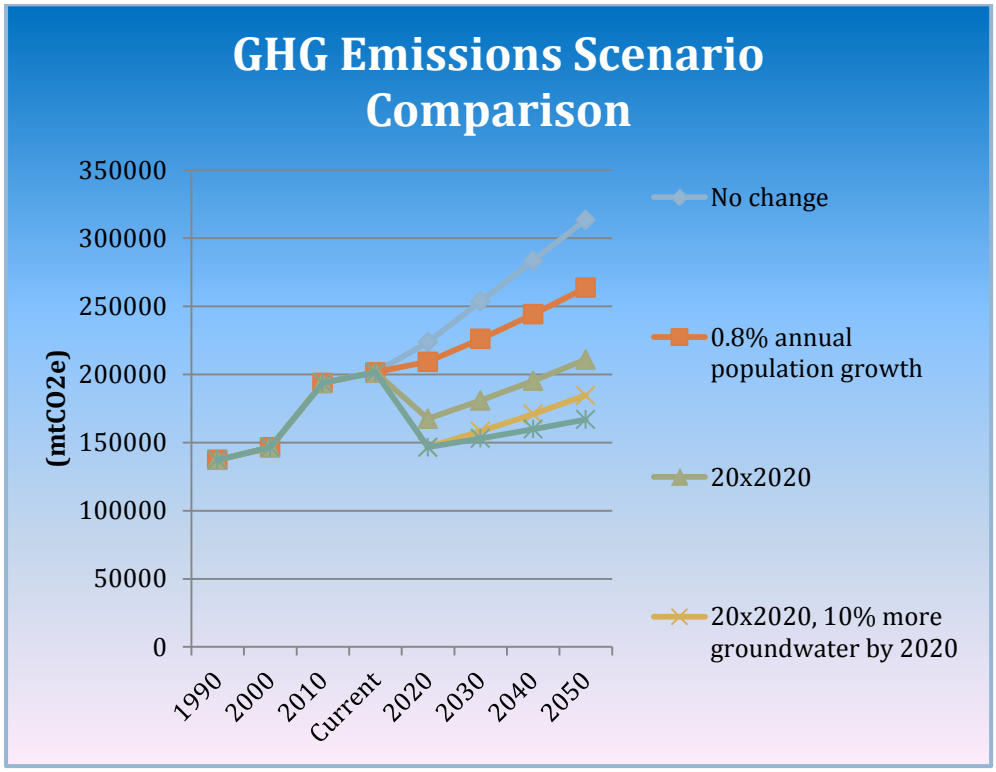
Type of Water	Percentage
Groundwater	57%
State Water Project	24%
Colorado River	0%
Self-Supplied	19%

Potable water treatment data should be entered if available for current, 1990, 2000, and 2010 in million gallons per day (MGD). Default data is provided at 20 MGD if specific data is not available. If projected data, decadal growth, or annual growth of potable water treatment is available, it can be used to adjust scenarios. The default data was used to run the model.

Additional specific information, such as monthly or annual State Water Project data for 1990-2011, monthly or annual Colorado River water data for 1990-2011, monthly or annual potable water treatment flow data and energy data for 1990-2011 for each agency, and monthly or annual groundwater flow data and energy data for 1990 to 2011 can also be applied for greater accuracy. State water project monthly deliveries for the time frame were applied to the calculations.

Scenarios can be created and then exported for comparison. These scenarios can be used to show which of the above characteristics has the greatest effect on emissions levels. Below is an example of a scenario comparison that is relevant to the Upper Santa Ana River Watershed. It is important to note that when using the State Water Project as a default baseline for comparison that comparison is made based on current energy use. Changes in operational efficiency are not included; however it is likely that energy use to wheel water in California will decrease in the future. The model does not also include assumptions showing an increase in renewable energy used to wheel and treat water in the future.

Figure 1: Scenario Comparison



The first scenario demonstrates the trend of greenhouse gas emissions without any conservation efforts by using Southern California population projections provided by the model. If no reduction changes are made, the amount of carbon dioxide equivalent will more than double over the sixty year period based on given assumptions.

The second scenario uses and 0.8% annual growth rate for population instead of the provided Southern California projections. This growth rate is the projected growth rate for San Bernardino County and therefore is a more accurate representation of population growth for the region. This population growth is slower than Southern California population projections and therefore has a slower increasing rate for greenhouse gas emissions. This population growth will be used in the rest of the scenarios.

The 20x2020 conservation plan effort is shown in the third scenario, where the per capita usage for the area will be reduced by twenty percent by the year 2020. This method of conservation will decrease the amount of greenhouse gas emission by approximately 34,000 mtCO2e between the current year and 2020.

The fourth scenario continues the 20x2020 goals as well as increases the amount of groundwater in the region by ten percent by 2020. This increase in ground water will help to cover the increasing water supply demands caused by a growing population.

The fifth scenario continues the trends of the fourth scenario, but decreases the per capita usage by another ten percent between the years 2020 and 2050. This further per capita decrease in usage helps to lower the emissions level to 30,000 mtCO2e more than the 1990 level in 2050. This is a relatively decent number knowing that the population is expected to grow by approximately 48% between 1990 and 2050.

Decreasing the per capita usage has the greatest effect on greenhouse gas emissions. The 20x2020 plan decreased the greenhouse gas emissions by more than 40,000 metric tons of carbon dioxide from the expected value for 2020 without conservation. If a continued decrease in per capita usage were possible the greenhouse gas emissions in the region would drastically decrease.

Another effective method to decrease greenhouse gas emission would be to incorporate more groundwater resources through storm and rain water capture and recycled water. These methods decrease the necessity of State Water Project water, which may become less reliable in future years.

If ground water levels are not monitored and maintained, the volume of available local water could be insufficient to supply the increasing population. The above scenario maintains that 57% of the total water supply will be supplied by groundwater even as the population increases. This assumes that proportionally more groundwater would be used to keep up with the increased population levels water usage.

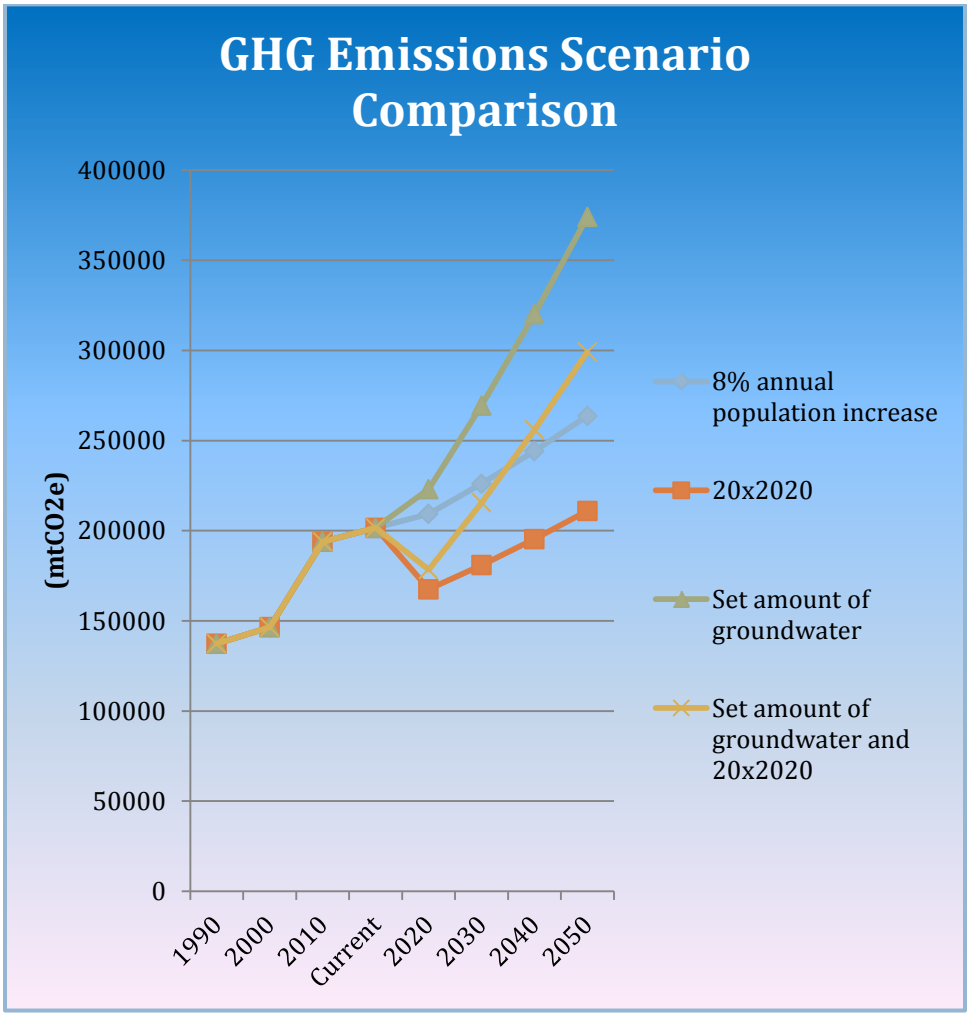
Below is a scenario that assumes that only a finite amount of water is available as groundwater in the region each year and therefore only a set number of people can receive water from groundwater each year. The increasing population levels may have to depend on increased provisions of State Water Project water if increasing levels of groundwater and self-supplied water are not available. It is assumed that only the current amount of groundwater will be available in future years. Table 4 gives shifting percentage values that were used to drive the model to demonstrate the need for an increased amount of water provided by the State Water Project.

Table 4: Projected Water Supply Levels

Reliance on State Water			
Year	% groundwater	% self-supplied water	% state water
Current	57.0%	19.0%	24.0%
2020	54.9%	18.3%	26.8%
2030	50.8%	16.9%	32.2%
2040	47.1%	15.7%	37.3%
2050	43.6%	14.5%	41.9%

If groundwater and self-supplied water levels decrease as population increases, reliance on State Water Project water will increase resulting in higher GHG emissions as seen below.

Figure 2: Reliance on State Water



The first scenario shows the model being run with only the 0.8% annual population growth as a factor. It still assumes that as the population increases the water supplies will all grow to meet the population demands without changing the percentage values. The second scenario also maintains the water supplies at the same percentage values, but shows the effects of the 20x2020 decrease in per capita usage. Both of these scenarios are seen in Figure 1 as well.

The third scenario introduces the idea that the amount of groundwater supplies will not increase as the population increases. It stipulates that only 669,924 people in the region can be supplied with ground water each year, as that is the current level. In order to make up for the gap in the increasing population, and assuming that self-supplied water will not increase, the amount of State Water Project water will have to increase to meet the demands of the increased population. Table 4 gives the percentage values that were used to run the third scenario, showing the proportional decrease in the percentage of groundwater and self-supplied water each year, and therefore the increase in State Water Project Water.

The increasing amount of necessary State Water Project water drives up the greenhouse gas emissions.. This water is transported approximately 200 miles to the region where it is treated and dispersed to the population. The transportation drastically increases the greenhouse gas emissions

levels. In contrast, locally supplied water has a lower impact on greenhouse gas emission because long distance transportation is not required.

The fourth scenario shows the increased reliance on State Water Project water and the required compliance with 20x2020. This scenario shows that the decrease of 20x2020 can have an impact in the short term, but ultimately the increased reliance on State water drives up the emission levels.

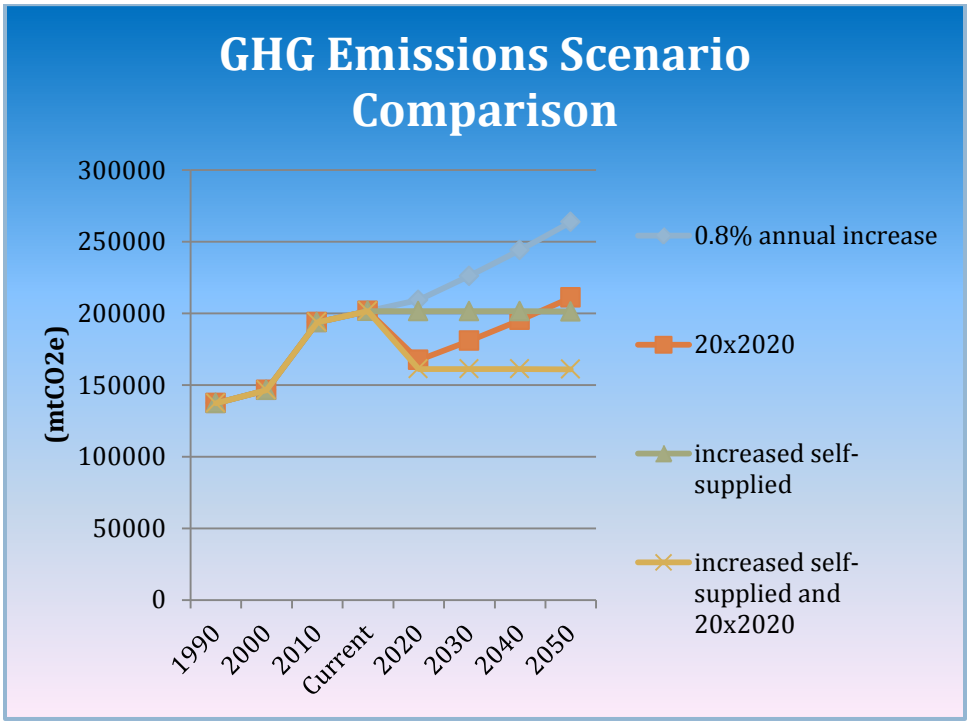
Increasing the amount of self-supplied water either through increased storm water capture or increased recycled water could greatly decrease the greenhouse gas emissions. The amount of groundwater and self-supplied water are set to finite annual levels in a similar fashion as shown above. Table 5 gives the water supply percentage values used to drive the model to provide set quantities of groundwater and State Water Project water.

Table 5: Projected Water Supply Levels

Increased Self-Supplied Water			
Year	% groundwater	% state water	% self-supplied water
Current	57.0%	24.0%	19.0%
2020	54.9%	23.1%	22.0%
2030	50.8%	21.4%	27.8%
2040	47.1%	19.8%	33.1%
2050	43.6%	18.3%	38.1%

Figure 3 demonstrates that increasing the amount of self-supplied water to meet the demands of the population growth greatly decreases the amount of greenhouse gas emissions.

Figure 3: Increase Self-Supplied Water



The first scenario shows the model being run with only the 0.8% annual population growth as a factor. It still assumes that as the population increases the water supply will grow to meet the population demands without changing the percentage values. The second scenario also maintains the water supply at the same percentage values, but shows the effects of the 20x2020 decrease in per capita usage.

The third scenario shows the implementation of the increased amount of self-supplied water to meet the demands of the increasing population. The set amount of groundwater and State Water Project water forces the emissions to a relatively uniform level as the amount of water transported or pulled up is at a constant quantity. The fourth scenario shows the increase in self-supplied water along with 20x2020. This scenario lowers the emissions levels even further and keeps those levels at a consistently decreased level.

In general, an increased amount of self-supplied water will decrease the amount of greenhouse gas emissions due to the fact that no intermediate activity is required before it can be treated and distributed. In contrast, groundwater must be extracted and state water must be transported before treatment and distribution. . However, it is the transportation process that causes the highest emissions compared to any other activity in the water distribution system.

Rather than adopting a single mitigation method, an integrative approach using all methods would be the most effective in achieving the lowest levels of carbon dioxide equivalent. However, despite their positive outcomes some of these methods would be impractical to implement in the short term. Increasing self-supplied water involves more storm water capture and increased usage of recycled water which may become more difficult as weather patterns change. Increasing the amount of available water requires more groundwater recharge. Ultimately the greatest short term effect is conservation. Conservation efforts lower the total demand for water and thereby decrease the emissions levels.

The GHGE calculator does not account for any technological advances that may occur over the 60 year period as these changes are not predictable. These advances could potentially increase the efficiency of pumps, energy, and the water system as a whole.

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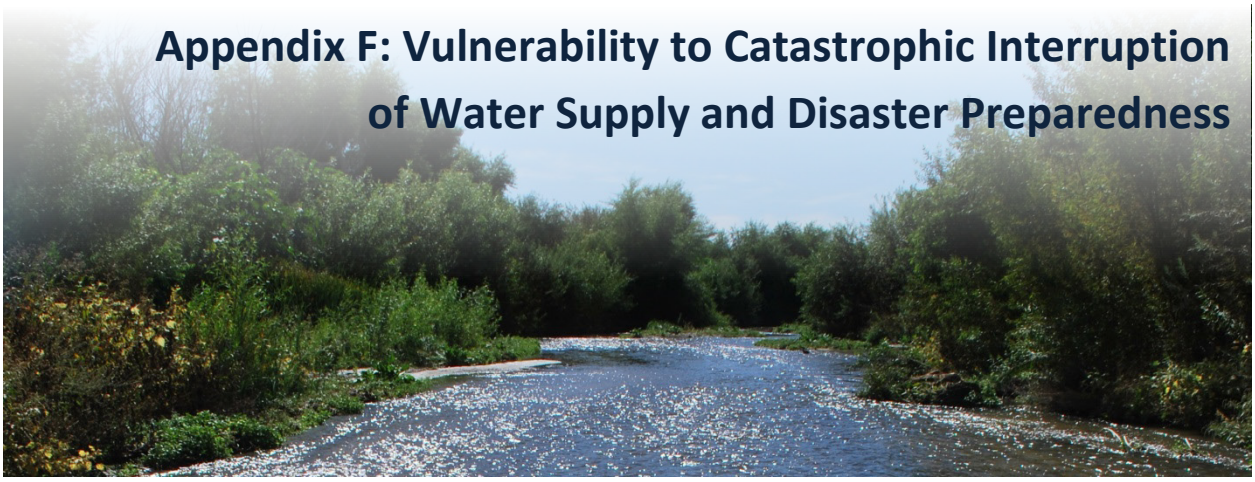
Appendix F: Vulnerability to Catastrophic Interruption of Water Supply and Disaster Preparedness



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Attachment 1 – Earthquake Literature Search

1 Background

This appendix addresses vulnerability of the region's water supply system to catastrophic events that may interrupt the water supply system in the Upper Santa Ana IRWM Plan Region (region). California Water Code Section 10632 (c) requires that Urban Water Management Plans address catastrophic supply interruptions. While not the only cause for catastrophic water supply interruption, the postulated Magnitude 8+ Earthquake certainly will be the predominant example in the region. Since a large magnitude earthquake is generally considered the most significant event for the region, we will concentrate on earthquake effects as our primary water supply interruption, knowing that other events would be treated similarly. Literature to be reviewed includes post-earthquake surveys of water system damage, earthquake planning reports, purveyor's Urban Water Management Plans and available reports prepared by the Department of Water Resources. We have concentrated the following discussions with a magnitude 8+ earthquake. Other catastrophic interruptions caused by regional power failure, terrorist attack, or other man-made or natural catastrophic event could cause similar conditions and issues to water supply systems in the region. For purposes of this report, a major earthquake is defined as an earthquake on the San Andreas Fault (SAF) on the order of 8.0.[1]

The work conducted for this appendix is intended to be the first step and is at the conceptual level. Additional detailed work should be conducted in the future to further evaluate options to effectively address water supply system vulnerabilities. This appendix includes the discussion of the following:

- An earthquake literature search of major earthquake events and what has been learned from such events.
- Evaluation of Catastrophic interruption of the regional facilities
- Vulnerabilities of region's water supply system to SWP supply interruption.
- Vulnerably of local purveyors' system to an earthquake .
- Summary of Finding and Recommendations including Water Shortage Contingency Plan

[1] The California Division of Mines and Geology has prepared two "Planning Scenarios" for major earthquakes in southern California. The first was a Magnitude 8.3 Earthquake on the San Andreas Fault (California, 1982). The second was a magnitude 7 earthquake on the San Bernardino Valley segment of the San Jacinto Fault (California, 1993).

- Options to reduce the impacts in case of catastrophic water supply system failure.
- Water Shortage contingency planning.

The region is located in a seismically active area of Southern California. Four major fault zones are found in the region, including the San Jacinto Fault, the Chino-Corona segment of the Elsinore Fault, the Cucamonga Fault, and the San Andreas Fault (SAF). Numerous other minor faults associated with these larger fault structures may also present substantial hazards.

The SAF is a right-lateral strike-slip fault that runs approximately 800 miles through western and southern California. The fault marks a transform boundary between the Pacific Tectonic Plate and the North American Tectonic Plate.

In Southern California, the SAF runs along the southern base of the San Bernardino Mountains, crosses through Cajon Pass, and continues northwest along the northern base of the San Gabriel Mountains. Historical records indicate that massive earthquakes have occurred in the central section of the SAF in 1857 and in the northern section in 1906 (the San Francisco Earthquake). In 1857, an estimated magnitude 8+ earthquake occurred on the San Andreas Fault rupturing the ground for 200 to 275 miles, from near Cholame to Cajon Pass and possibly as far south as San Gorgonio Pass. The recurrence interval for a magnitude 8 earthquake along the total length of the fault is estimated to be between 50 and 200 years. It has been 147 years since the 1857 rupture. A study completed by Yuri Fialko (2005) suggests that the SAF in Southern California has been stressed to a level sufficient for an earthquake of magnitude 7.0 or greater.

A detailed earthquake-related literature search was conducted to prepare this report. The literature search included review of the following events and reports:

- Loma Prieta Earthquake of October 17, 1989
- Northridge Earthquake of January 17, 1994
- Santa Clara Valley Water District Water Infrastructure Reliability Project
- San Simeon Earthquake of December 22, 2003
- Denali Earthquake of November 3, 2002
- City of San Diego Water Supply Study
- City of Vancouver Regional Water Distribution System Study
- San Fernando Earthquake of 1971
- Kobe (Japan) Earthquake of January 17, 1995
- California Division of Mines and Geology Planning Scenarios

Attachment A summarized this literature search.

2 Evaluation of a Catastrophic Interruption to Regional Facilities

The California Aqueduct has been designed to "break" at the Devil Canyon Powerplant in a large earthquake.

Some of Valley District's pipelines cross the San Andreas Fault. This section evaluates the impact of a catastrophic interruption on Valley District's regional facilities used to convey SWP water supplies and specific actions that may be taken to minimize the impact on water deliveries.

2.1 Facility Evaluation

The individual facilities that were examined in this analysis are as follows:

- Foothill Pipeline
- Santa Ana River Connector (SARC) Pipeline
- Greenspot Pump Station
- Morton Canyon Connector
- Greenspot Pipeline
- Tate Pump Station
- Crafton Hills Pump Station
- Crafton Hills Reservoir
- Crafton Hills Pipeline, portion of EBX
- Yucaipa Pipeline
- Bryant Street Pipeline
- Lytle Pipeline
- Baseline Feeder System

Given a loss of each of the above facilities, the examination will include:

- How the water supply needs of the affected service area could be met.
- To what degree local groundwater and/or surface water can replace the loss of the SWP
- What projects would be required to mitigate the loss of the facility.

- What projects could be implemented to mitigate the impact of catastrophic failures of these facilities.

Figure AF-1 shows the location of Valley District's major facilities relative to fault lines.

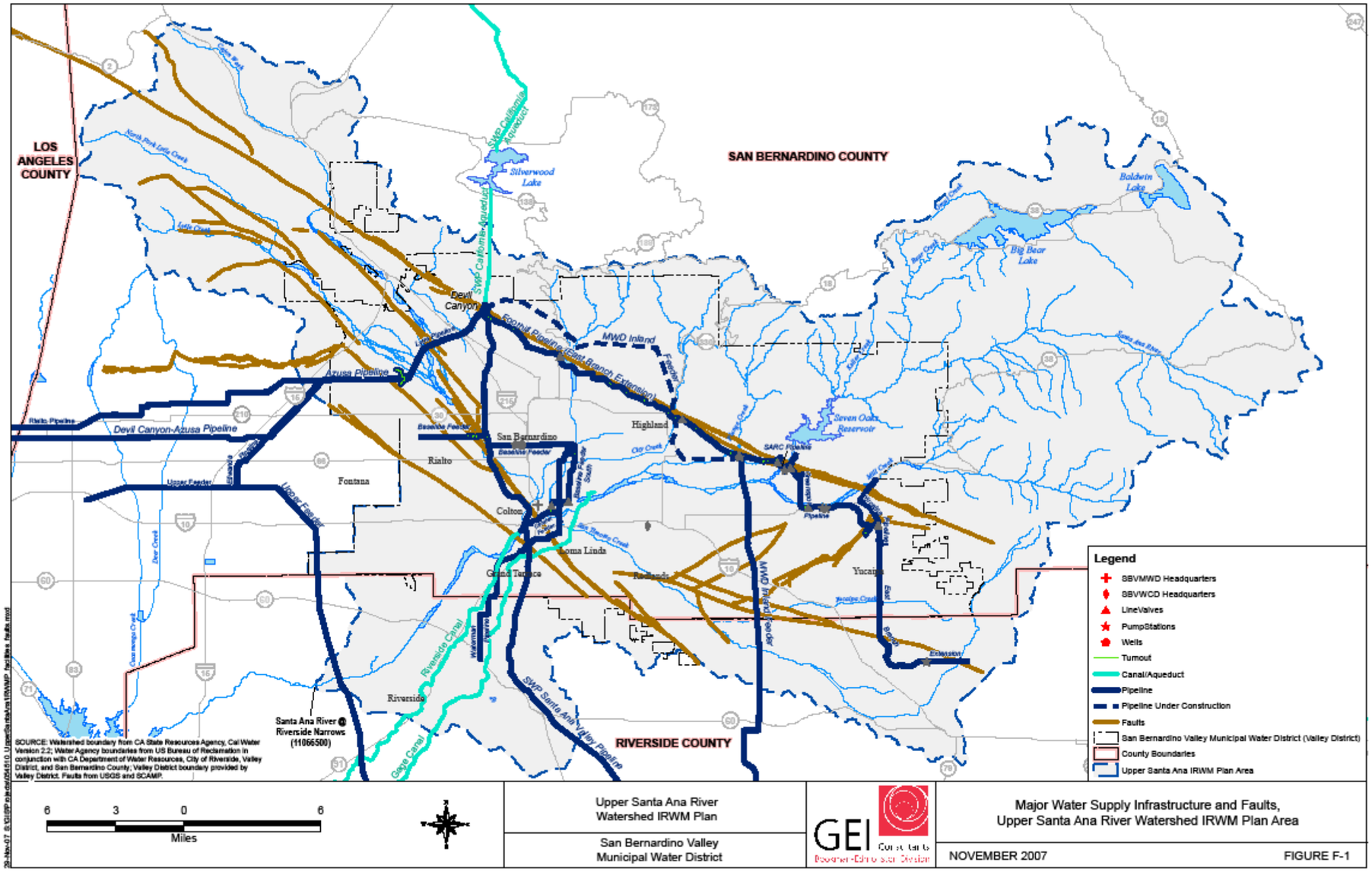
In general, Valley District direct deliveries are to surface water treatment plants that were built to treat local surface water and SWP water. Local surface water, collected and conveyed by the purveyor's own system is the least costly and highest quality. Valley District's SWP deliveries supplement these supplies.

Valley District also makes direct deliveries for irrigation. These deliveries are assumed to be able to be suspended during severe events and will not be investigated further.

Table AF-1 shows the Valley District conveyance facilities and the surface water treatment plants that receive deliveries of imported and surface water from those facilities. This table shows how interruption in each of the Valley District facilities may impact water deliveries for the local purveyors. Valley District's conveyance system is used to implement the Santa Ana-Mill Creek Cooperative Water Project and effect deliveries of local surface water and exchanges of local surface water and SWP water. Furthermore, these facilities could be used to convey local surface water from the Santa Ana River and/or Mill Creek in the east to delivery points in the west along the Lytle Creek Pipeline. In the past, Valley District has demonstrated this capability by delivering local surface water from the Santa Ana River to Devil Canyon where it was transferred to Metropolitan Water District of Southern California and conveyed to the Weymouth Water Filtration Plant.

It should also be mentioned that the California Division of Mine and Geology planning scenario for a major earthquake on the San Jacinto Fault concludes that the Santa Ana Valley (a SWP facility) Pipeline will also be damaged extensively as the fault and pipeline cross several times. Since Valley District does not have any current delivery points along this pipeline, it is not considered in this analysis.

Figure F-1
Water Supply Infrastructure and Faults



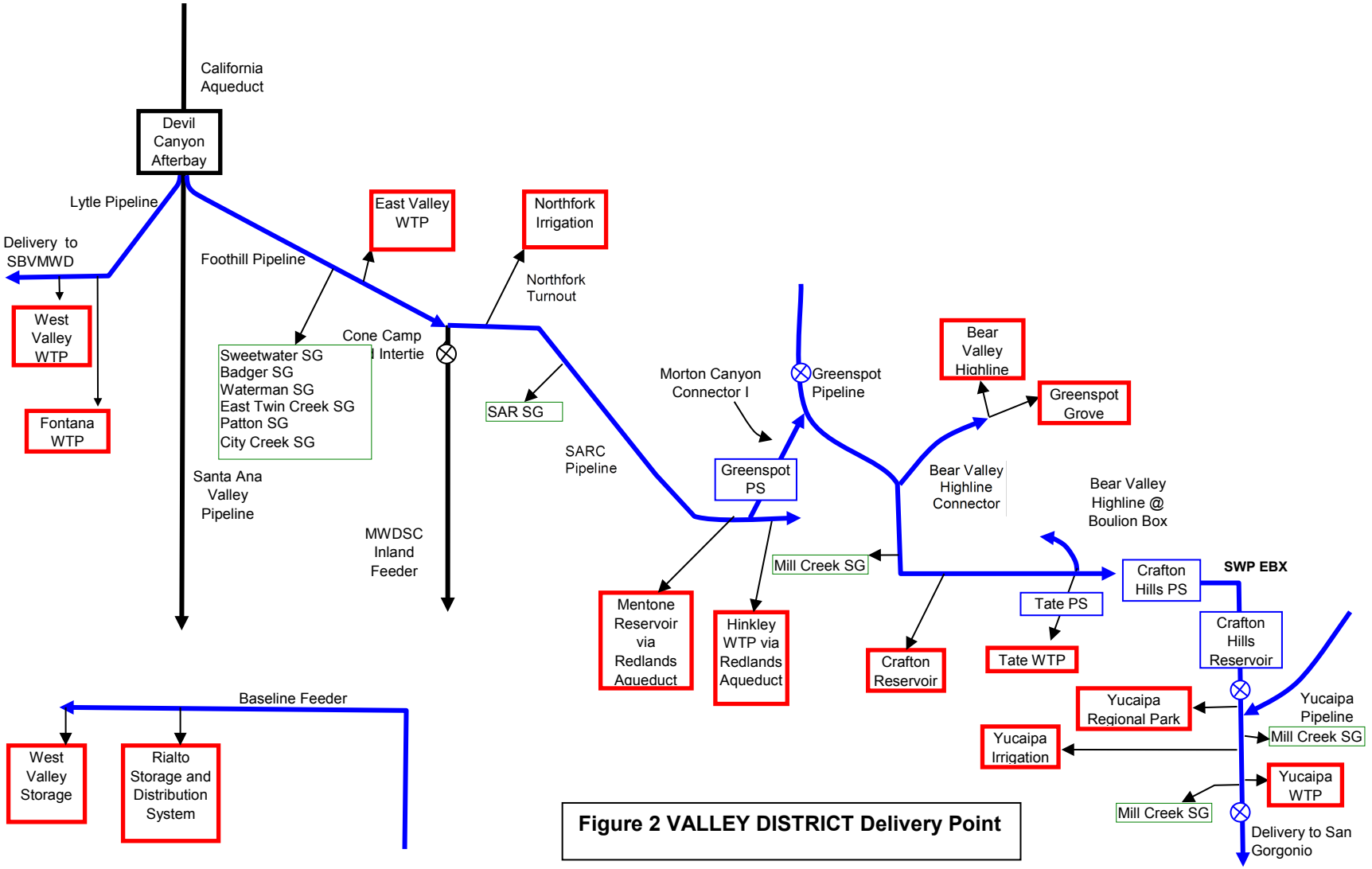


Figure 2 VALLEY DISTRICT Delivery Point

NOTE: Arrows indicate the primary flow direction. In some cases, water can also flow in the opposite direction, in an emergency, for short durations.

Table AF-1
Valley District Facilities Used to Deliver Water to Retail Agencies

Agency	Foothill Pipeline	SARC Pipeline	Morton Canyon Connector	Green-spot Pipeline	Green-spot Pump Station	Devil Canyon - Azusa	Tate Pump Station	Crafton Hills PS	Crafton Hills Reservoir	EBX[1] Reach 1 Pipeline	EBX Reach 2 Pipeline	Yucaipa Pipeline	Baseline Feeder
San Bernardino Municipal Water Department	✓	✓[2]	✓[2]	✓[2]	- -	- -	- -	- -	- -	- -	- -	- -	- -
East Valley Water District	✓	✓[2]	✓[2]	✓[2]	- -	- -	- -	- -	- -	- -	- -	- -	- -
City of Redlands – Hinckley	✓	✓	✓[3]	✓[3]	✓[3]	- -	- -	- -	- -	- -	- -	- -	- -
City of Redlands – Tate	✓	✓	✓	✓	✓	- -	✓	- -	- -	- -	- -	- -	- -
Bear Valley MWC - In lieu obligation and irrigation	✓	✓	✓	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Yucaipa Valley Water District	✓	✓	✓	✓	✓	- -	- -	✓	✓	✓	✓	✓	- -
Fontana Water Company	✓[2]	✓[2]	✓[2]	✓[2]	- -	✓	- -	- -	- -	- -	- -	- -	- -
West Valley Water District	✓[2]	✓[2]	✓[2]	✓[2]	- -	✓	- -	- -	- -	- -	- -	- -	✓
City of Rialto (SWP thru WVWD)	✓[2]	✓[2]	✓[2]	✓[2]	- -	✓	- -	- -	- -	- -	- -	- -	✓

Notes:

[1]EBX: East Branch Extension of the California Aqueduct

[2] Used only in an emergency condition to deliver Santa Ana River and/or Mill Creek water in a westerly direction.

[3] Could be used to receive a water delivery from Bear Valley Mutual Water Company

Valley District's conveyance system is used to implement the Santa Ana-Mill Creek Cooperative Water Project and effect deliveries of local surface water and exchanges of local surface water and State Project water.

The Devil Canyon - Azusa Pipeline is owned by San Gabriel Valley Municipal Water District. Valley District owns 50% of the conveyance capacity of the pipeline from Devil Canyon to the Lytle Creek area and uses this capacity to convey water to West Valley, Rialto, and Fontana. It could also be used in an emergency to convey local surface water.

The Baseline Feeder is used to convey groundwater to Rialto and West Valley. The groundwater is produced by the City of San Bernardino on behalf of Valley District and by Rialto for Rialto.

Valley District deliveries to San Bernardino Municipal Water Department are for recharge. Changes in recharge impact well hydrographs in six to seven months.

2.2 Findings and Recommendations

Table AF-1 summarizes the Valley District facilities which purveyors utilize. This table also includes Valley District facilities that could be used to make other deliveries in an emergency situation. Table AF-1 shows that all purveyors listed could be impacted by interruption in the Foothill Pipeline, SARC Pipeline and Morton Canyon Connector. Therefore, these four pipelines are the most vulnerable Valley District facilities in the case of a major earthquake along the San Andreas Fault. Specific recommendations to manage the catastrophic interruption are discussed below.

2.2.1 Alternative Local Supplies

2.2.1.1 Interties between Purveyors

Table AF-2 lists interconnections between purveyors. These interties could be used to balance supplies between purveyors. An interconnection between the City of San Bernardino and East Valley is currently being used to facilitate blending. This use is anticipated to end in the near future.

Table AF-2 – System Interties between Purveyors

Transfer	Direction	Capacity (MGD)	Remarks/data source
City of San Bernardino/East Valley	Either	4	Three interties. One currently used to facilitate blending.
City of San Bernardino/Riverside	To San Bernardino	2	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/West Valley	Either	3	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/Loma Linda	Either	5	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/Colton	To Colton	3	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/Rialto	Either	3.6	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/ Riverside Highland	To Riverside/ Highland	3	(San Bernardino UWMP, Pg 2-10)
Fontana/Cucamonga Valley	Either	3.6	Fontana UWMP (2500 gpm)
West Valley/Fontana	Either		West Valley UWMP.
West Valley/Rialto	Either		West Valley UWMP.
West Valley/Colton			West Valley UWMP.
Redlands/Loma Linda	To Loma Linda		Greg Gage
Rialto[1]/Marygold	To Marygold		Rialto has historically conveyed 1,500 afy of groundwater to Marigold. The agreement under which this was accomplished is expiring.

Sources: San Bernardino Municipal Water Department 2005 UWMP; Jack Nelson, Yucaipa Valley; Ron Buchenwald, East Valley; Greg Gage, Valley District, West Valley 2005 UWMP.

[1] Rialto has several connections with other systems, including four connections with West Valley Water District, and connections with City of San Bernardino, Fontana Water Company, and Riverside Highland Water Company.

Based on the limited sources of data, this list may be incomplete.

2.2.1.2 Use of Big Bear Lake

Big Bear Lake has a capacity of over 70,000 acre-feet. The goal of Big Bear Lake Municipal Water District is stabilization of the level of Big Bear Lake by managing the amount of water released to the downstream water rights holder. That is, water is kept stored in the lake at all times for recreational use. Bear Valley Mutual Water Company (Mutual) has rights to a large portion of the lake. Through an agreement with Big Bear Municipal Water District (Big Bear), Valley District provides SWP water to Mutual instead of water being released from the lake. However, in an emergency situation, it may be possible for water to be released from the lake for a short duration. A legal framework could be established to make this water available in case of a catastrophe that prevented Valley District from making its deliveries under the agreement with Big Bear.

2.2.2 Increased Groundwater Production Capacity and Reliability

In general, the groundwater basin is presently able to meet peak demands using wells without Valley District facilities. If the catastrophe is an earthquake, the most likely impact on groundwater production capacity will be damage to the electrical system of the well or to the electricity supplier's system, and backup power supplies at key production wells will be necessary

Thus, depending on the system of each purveyor, increasing the purveyor's groundwater production capacity and the reliability of that capacity may improve the area's ability to operate after a catastrophic failure.

2.2.3 Alternative Conveyance of Surface Water

2.2.3.1 Alternatives to Foothill Pipeline System

As stated earlier, Foothill Pipeline together with Santa Ana River Connector Pipeline are the most vulnerable facilities if a major earthquake were to occur along the San Andreas Fault and the most critical during a catastrophic interruption. The following systems could provide some alternative conveyance of surface water should portions of the Foothill Pipeline System fail:

- Metropolitan's Inland Feeder can provide redundancy of the Foothill Pipeline to the intertie at Opal Avenue. The Inland Feeder could also be used to pump water from Diamond Valley Lake north to the intertie with the Valley District Foothill Pipeline. The conveyance capacity of the Inland Feeder operating from Diamond Valley Lake to the north is reported to be 250 cfs.

- The proposed conjunctive use project would include facilities that could convey stored groundwater from the San Bernardino Basin Area to purveyors as a substitute for imported water.

2.2.4 Additional Surface Storage

If the ability to import SWP water is lost or the region is faced with major interruption of regional and local facilities due to a catastrophic event, it is important to have ample local surface storage to meet immediate water demands. While there may be significant water stored below ground, the ability to extract and deliver this water may also be disrupted by a catastrophic event. The following suggestions could further prepare the Region for such an emergency:

- Inventory surface water storage facilities throughout the region and determine the amount of existing storage capacity compared to need to satisfy emergency water

demands. The Valley District should conduct an evaluation of feasible storage needs for the Region.

- Select appropriate delivery methods for the waters (i.e., trucking or alternative or backup pipelines).
- Rank agencies by their current amount of surface water storage and their operating storage amounts to determine which areas of the Region are in need of additional surface storage. (How far would people have to walk or drive to get to water? Which cities or communities are most at risk for water shortages?)
- Investigate adding additional local surface water storage facilities that could supply water to the entire Region in the event of an emergency. (North and South Lake projects and conservation pool behind Seven Oaks Dam.)

3 Vulnerability of Region's Water Supply System to SWP Supply Interruption

The scenario considered by this document is a large earthquake along the San Andreas Fault severing the State Water Project (SWP) California Aqueduct just above Devil Canyon power plant. In addition to the threat of earthquake, a disruption on the SWP could be caused by levee failure in the Sacramento-San Joaquin Delta or by other disruptions in transmissions facilities. These two disasters would have an impact on the delivery of SWP water into the region. This chapter will investigate the effects of an interruption of the SWP system on Valley District's customers.

3.1 Valley District SWP Deliveries

Deliveries of SWP water to Valley District have averaged approximately 15,000 acre-feet per year (1999-2003 Western-San Bernardino watermaster records). San Gorgonian Pass Water Agency is also receiving SWP water that would be affected by interruption of SWP deliveries. These direct deliveries are projected to increase to 34,000 acre-feet per year by 2030 based on the UWMP projections within the Region. Historically, direct deliveries have peaked during summer months with the greatest deliveries in July, August, and September. In the event that State Water Project deliveries are severely reduced, more demand will be placed on local groundwater supplies. For example, in a one-month shutdown, additional demands on groundwater within the Valley District service area would be 3,000 to 6,000 acre-feet (current to future demands, shut down in the summer); in a six-month shutdown, additional groundwater demands would be 10,000 to 30,000 acre-feet (current to future demands, shut down in May to September); and in a 12-month shutdown, additional demands on groundwater would be 15,000 to 34,000 acre-feet (current to future demands).

3.2 Overview of Known Earthquake Vulnerabilities of State Water Project

Publications available from the Department of Water Resources address the institutional requirements of responding to an emergency.

3.2.1 California Division of Mines and Geology Planning Scenarios

The California Division of Mine and Geology planning scenario for a major earthquake on the San Jacinto Fault concludes that the Santa Ana Valley Pipeline of the SWP will be damaged extensively as the fault and pipeline cross several times.

The planning scenario for a magnitude 8.3 earthquake north of the San Bernardino area and on the San Andreas Fault concludes that though all of the SWP facilities of the California Aqueduct are designed to resist the effects of a great earthquake comparable to the scenario event, widespread damage to the aqueduct will inevitably occur. For planning purposes, a minimum of three months will be required to accomplish those repairs necessary to restore water deliveries to southern California. Severe damage to the East Branch where it crosses the San Andres Fault at Barrel Springs is expected. No major damage to aqueduct facilities between Lake Silverwood and the Devil Canyon Power Plant is expected (this scenario assumes that surface fault rupture would terminate some 25 km northwest of Devil Canyon). The Santa Ana Valley Pipeline would be subjected to intense shaking and possible ground failure.

3.2.2 Seismic Risk Analysis for California State Water Project – Reach C

The objective of this study (Shah, 1976) was to develop a seismic hazard map for the east branch of the SWP. The study concluded that with respect to the pumping and power plants, the hazard or probability of exceeding the design load level employed for the substructures and superstructures during the next 50 years was very small (on the order of 5 percent). For the switchyards, however, the probability of exceeding their design load level during the next 50 years is large (on the order of 30 to 60 percent).

The following recommendations were made as a result of the above study.

- "The risk of damage or destruction to the pumping and power plant substructures and superstructures is minimal during the next 50 to 100 years, and therefore no action is required. However, for the mechanical and electrical equipment within these plants it is recommended that a thorough survey be made to evaluate their ability to resist seismic loads."

- "All switchgear equipment should be modified so as to resist a minimum peak ground acceleration of 0.3 g. This load level corresponds to a return period of approximately 200 years or more along [the East Branch]."

- "Since the ground shaking along the Santa Ana Valley pipeline is relatively high, in excess of 0.5 g for a 1000 year return period), an investigation should be made to determine the advisability of providing a cut-off facility for this portion of the [East Branch]."

- "Because of the large risk potential, a central operations and maintenance center with facilities and capabilities for dealing with earthquake induced damage should be set up for the region south of the Devil Canyon Power Plant."

3.3 Finding and Recommendations

Valley District currently requires the agencies it serves to have a back-up water supply in case the State Water Project (SWP) supply is not available. Assuming the back-up supply is groundwater produced from the San Bernardino Basin Area (SBBA), 15,000 additional acre-feet per year of groundwater production would be needed if the earthquake happened in the near future, and potentially 34,000 acre-feet of additional groundwater production if the earthquake happened around 2030.

The average instantaneous pumping rate for the 199 wells (with data available) of the major water purveyors in the SBBA is approximately 1,438 gpm. Based on well production rates at 70 percent of their instantaneous pumping rate, annual production would be about 323,100 acre-feet. For the remaining wells without instantaneous pumping rate data, the total maximum annual production between 2001 and 2005 was about 60,800 acre-feet. This yields a total maximum annual groundwater production capability of 383,900 acre-feet. The projected actual groundwater pumping for the Baseline Run 1 ranged from between 193,200 acre-feet in 2010 to 289,100 acre-feet in 2034, with an annual average of 248,900 acre-feet per year for the period 2006-2044. Thus, the additional groundwater production that could be used if the state aqueduct was severed is approximately 95,000 acre-feet (383,935 – 289,105) which is greater than the estimated 2030 need of 34,000 acre-feet. The 95,000 acre-feet represents approximately 9 percent of the 1,000,000 acre-feet of usable storage in the SBBA.

In the event of a SWP shutdown, there is sufficient groundwater storage, production facilities and transmission facilities to likely provide short-term water deliveries to customers in the Valley District service area. To prepare for such an outage, SWP and local supplies should be stored in the local groundwater basins, whenever available.

3.3.1 Pipeline Redundancy

Pipeline redundancy in the region is important if interruption occurs in the region along the Foothill Pipeline. On a regional-scale, projects like the Baseline Feeder, the proposed conjunctive use project and the MWDSC Inland Feeder provide additional options of conveyance in an emergency situation.

Although a loss of SWP water for a short period of time can be overcome, the SWP is critical to long-term management of the groundwater basin. The following suggestions are intended to help further prepare the Region for a shutdown of the State Water Project.

3.3.2 Recharge with SWP Water when it is Available

The SBBA is essentially an underground storage reservoir that contributes to the water reliability of the Region during periods of drought. By recharging water from the SWP when it is available, the Region can prepare in advance for drought or disruptions in the SWP

system. This is a primary management strategy of the San Bernardino Valley Regional Urban Water Management Plan and the Upper Santa Ana River Watershed Integrated Regional Water Management Plan.

3.3.3 Surface Storage in the Region

Additional surface storage in the region can help provide water supplies during a catastrophic failure of the California Aqueduct.

3.3.4 Exchange and Banking Program Utilizing Santa Ana River Water

In years when water available from the Santa Ana River exceeds the capacity of local treatment plants and spreading grounds, the excess amount could physically be delivered to the Inland Feeder and into Metropolitan's water system in exchange for SWP water from Metropolitan. This banked water could be recovered and delivered to the region if a catastrophe occurs along the California Aqueduct.

4 Vulnerabilities of Local Purveyors Water Supply System to an Earthquake in the Region

A catastrophic 8.0 earthquake near San Bernardino could lead to pipeline rupture, loss of electricity, and well failure, substantially reducing water supplies available in the Region. The quality of both surface and groundwater supplies could also be affected by the failure of existing wastewater treatment facilities. Figure AF-1 shows the San Andreas Fault trace through the Valley District service area with a five mile fault buffer zone. In the case of a 7.8 earthquake, anything within five miles of the fault is likely to be damaged or destroyed (Caltech meeting, July 31, 2007). In addition, regional infrastructure within this zone includes the SWP CA Aqueduct coming from Lake Silverwood to Devil Canyon, regional water facilities owned by Valley District (Foothill Pipeline, Greenspot Pipeline, Lytle Canyon Pipeline, and the East Branch Extension), and Metropolitan's Inland Feeder will be impacted. Prudent preparation for a catastrophic earthquake would suggest planning for no water deliveries from the SWP.

4.1 Overview of Known Earthquake Vulnerabilities of Purveyor's Systems

This section has been prepared based on review of Urban Water Management Plans of agencies receiving direct deliveries from Valley District. California Water Code Section 10632 (c) requires that Urban Water Management Plans address catastrophic supply interruptions.

4.1.1 San Bernardino Municipal Water Department

San Bernardino Municipal Water Department's Supplemental Emergency Plan is designed for implementation during emergency water shortages that could occur as a result of earthquake, flood, fire, or other catastrophes. SBMWD maintains portable backup power supply and diesel- and/or natural gas-driven wells at critical locations within the distribution system to provide domestic water for emergency purposes during sustained power outages. Additionally, they have entered into a Mutual Aid Agreement with surrounding water agencies.

4.1.2 East Valley Water District

East Valley has in place back-up power supplies at critical locations within the distribution system. The District maintains portable pumps that can be used to transfer water between zones, but cannot be used for production. East Valley's storage capacity of 25.5 million gallons would provide a potable supply for customers' non-irrigation uses (assumes

implementation of Water Shortage Contingency Plan) for an estimated two to three days. A Mutual Aid Agreement with surrounding water agencies is also in place for the provision of water supply and/or manpower.

East Valley has an agreement with Arrowhead Drinking Water Company to deliver potable water tanks to selected sites within the District's service area. The trucks will be manned by District personnel to distribute water to customers for drinking purposes.

Were surface water deliveries to East Valley disrupted, East Valley has adequate groundwater production capacity to meet peak day. This presumes that East Valley's facilities remained intact.

4.1.3 West Valley Water District

Extended multi-week supply shortages due to natural disasters or accidents that damage all West Valley water sources are unlikely. The District's 23 storage reservoirs hold 65.6 million gallons, which is sufficient water to meet the health and safety requirements of 50 gallons per day per capita for the 60,121 customers for 21 days. This assumes zero non-residential use. Under emergency power outages or catastrophic earthquake conditions, the existing storage is expected to provide a minimum supply of 3.5 days of average day demand or 1.7 days under maximum summer demand.

The District is planning to construct an additional 12.5 million gallons of storage within the next few years for a total of 78.11 million gallons, which would give the District 4.2 days of average day demand. The District also has interconnections with three other agencies for emergency supplies.

The District has portable back-up generators that can be used in the event of an area-wide power outage. These generators can be located on both wells and booster stations to continue water production. These generators will be located in the northern part of the distribution system. Water can then be boosted to higher zones or gravity fed to the lower zones. In addition to the portable generators, the District is constructing back-up generators at the Zone 5 and 6 booster stations.

West Valley's groundwater production capacity is approximately 80 percent of peak day demand. It obtains water from two Valley District facilities, the Lytle Pipeline and the Baseline Feeder. These facilities are required to meet peak day demand.

4.1.4 Yucaipa Valley Water District

Yucaipa Valley's Major Disaster Plan and Alerting Procedures deal with non-drought-related water shortages, including those that might result from earthquakes. It outlines the responsibilities of the District's designated emergency response personnel, alerting

procedures, alternate headquarters, communications, transportation, and relationships with regional and state emergency response officials.

To the extent well capacity exists, the Yucaipa basin can be temporarily exercised beyond its long-term safe yield in response to shortages.

It is East Valley's intent to maintain groundwater production facilities adequate to meet peak day demand without use of surface water.

4.1.5 City of Redlands

The Redlands UWMP notes that the Redlands Municipal Utilities Department has an emergency plan that supplements the Citywide Emergency Plan. It notes that in case of an earthquake, required actions are to "coordinate the resources necessary for repair of water infrastructure," and to "utilize vendor lists to identify available water haulers, temporary water lines, piping, heavy equipment, etc."

Redlands does not have adequate capacity to meet peak day demand without use of surface water. Redlands obtains surface water from Mill Creek and SWP wheeled by SBVWMD. During a typical summer, Mill Creek is the main source during early summer, but this supply is substantially reduced by late summer. SWP water is the dominate source in late summer. Depending on the supply of Mill Creek water, Redlands may not be able to meet peak day demands without SWP water.

4.1.6 Fontana Water Company

Fontana is dependent on imported surface water to meet demands. Presently, the water is all delivered via the Lytle Pipeline. It is possible that in the future, some of the imported water will be conveyed by Metropolitan's Foothill Feeder (also known as the Rialto Pipeline). These two lines are parallel, however, and it is reasonable to presume that the same event that damages one will damage the other.

4.1.7 City of Rialto

Rialto's UWMP notes that the city's storage reservoirs can meet the health and safety requirements of 50 gallons per day per capita for 11 days. This assumes no non-residential use. The City is retrofitting key well sites to enable the City to bring in portable generators for use during a power outage.

Rialto obtains water from two Valley District facilities, the Lytle Pipeline and the Baseline Feeder. It is believed that both these facilities are required to meet peak day demand.

4.2 Findings and Recommendations

- The purveyors in the region will primarily rely on groundwater during catastrophic events. Therefore, they must ensure they have reliable and adequate backup power supplies at critical locations within the distribution system as well as key production wells. The backup power supplies should be tested periodically to ensure proper operations during emergencies.

- Local purveyors should examine their current storage and interties capacities and plan for additional storage and interties to ensure adequate water supply is available for health and safety during catastrophic events.

5 Summary of Findings and Recommendations

5.1 Findings

These findings have been developed from a search of literature reporting the impacts of major earthquakes and limited work by water purveyors. More detailed, site-specific analyses are needed to better quantify and identify impacts from major earthquakes or other catastrophic outages.

- **Reliability of Groundwater Wells.** Review of post-earthquake lifeline performance reports reveals little discussion of groundwater well failure. However, loss of commercial power, damage to electrical equipment and aboveground appurtenances, or damage to the distribution system may effectively put the well out of service. Liquefaction, especially in areas where there is high groundwater levels between depths of 5 to 50 feet, may cause ground settlement and interfere with continued well operation.

  No discussion of the performance of well head treatment systems during earthquakes was found. This may be due to the limited amount of well head treatment in place during prior earthquakes. As well head treatment typically includes purchased equipment installed in a field location, there is significant opportunity for lapses in the seismic design.

  The groundwater basin and the groundwater production wells are a reliable part of the water supply system for the San Bernardino area.

- **Reliability of Pipelines**. Pipelines are generally the most fragile part of a water system. Generally, damage is a function of displacement rather than shaking. Empirical algorithms have been developed to predict seismic reliability of pipelines.
- **Reliability of Pump Stations**. Past earthquakes indicate that the structural and mechanical elements of a pump station are highly resistant to earthquake damage. The most likely failures are to the electrical equipment and loss of commercial power.
- **Reliability of Surface Water Treatment Facilities**. The major elements of a surface water treatment system are typically concrete structures that are very resistant to damage. However, these facilities include a large variety of mechanical equipment, much of it long and light weight that is subject to damage not only from the direct force of an earthquake, but also to the wave action created by the earthquake. Similar to a pump station, power supply and electrical equipment are fragile.

- **Reliability of the State Water Project**. While little specific information was found on anticipated damage to the SWP, the high susceptibility of the Santa Ana Valley Pipeline is recognized. A major vulnerability of the SWP is the Sacramento-San Joaquin Delta. The SWP does have a Business Resumption Plan and an Emergency Operations Plan.
- **Length of Outages.** The Loma Prieta earthquake affected a large number of separate systems. The San Jose Water Company serves most of San Jose and all of Los Gatos. Los Gatos was hard hit and half of the water customers lost water service. In San Francisco, the worst hit area was the Marina District. Fires and liquefaction both affected the district. East Bay Municipal Water District serves 1.1 million customers and suffered $3.7 million in damage. Damage included a break in a 60-inch raw water line.

  After the Northridge earthquake, the Los Angeles Aqueducts No. 1 and 2 were in and out of service for temporary and permanent repairs over several months, these facilities were not critical at that time. Alternate supplies were available and drought conditions limited supply to these aqueducts.

  Table AF-3 shows the length of outages for water operation during the Loma Prieta and Northridge earthquakes.

  Valley District's Emergency Operations Plan includes estimates for repair of Valley District facilities. Electrical and pipe repairs are estimated to take 35 to 77 days. Pump repairs are estimated to take 168 to 273 days.

  Tables AF-4 and AF-5 summarize the degree to which purveyors depend on Valley District facilities for deliveries over a period of days to one year. These tables presume normal operations by the purveyor with the exception that non-potable deliveries (West Valley and Yucaipa) are suspended.

Table AF-3 – Length of Outages for Water Operation during Loma Prieta and Northridge Earthquakes

Earthquake	Purveyors	Time to Restore Water Operation
Loma Prieta	San Jose WC	36 hrs/98%
	San Francisco	6 days/most areas
	East Bay MWD	3 days/normal operation
Northridge	City of L.A.	12-65 days

Table AF-4 – Percent of Present (P) and Future (F) Peak Day, Potable Demand conveyed by SBVWMD facilities when no local surface water is available. Assumes imported water used prior to local groundwater

Purveyor	Foothill Pipeline	SARC Pipeline	Greenspot Pump Station	Morton Canyon Connector	Greenspot Pipeline	Tate Pump Station	Crafton Hills PS	Crafton Hills Reservoir	Crafton Hills Pipeline	Bryant Street Pipeline	Yucaipa Pipeline	Lytle Pipeline	Baseline Feeder
San Bernardino Municipal Water Dept	0	0		0	0								
East Valley Water District	12 (P) 24 (F)	12 (P) 24 (F)		12 (P) 24 (F)	0								
Redlands	36 (P) 41 (F)	36 (P) 41 (F)	24 (P) 25 (F)	51 (P) 35 (F)	24 (P) 25 (F)	24 (P) 25 (F)							
Yucaipa Valley Water District	24(P) 49 (F)	24(P) 49 (F)	24(P) 49 (F)	24(P) 49 (F)	24(P) 49 (F)		24(P) 49 (F)	24(P) 49 (F)	24(P) 49 (F)	24(P) 49 (F)	0		
Fontana Water Company	0	0		0	0							unknown	
West Valley Water District	0	0		0	0							23 (P) 36 (F)	12(P) 27 (F)
City of Rialto	0	0		0	0							7 (P) 6 (F)	unknown

Notes:
San Bernardino Municipal Water Department figure does not include deliveries of surface water for wells under the influence of surface water as it takes six to seven months for the hydrographs of these wells to respond. If these deliveries were included, they would be 14% of peak day demand.
Does not include deliveries for irrigation or indirect deliveries.
Gray shading indicates a conveyance facility that cannot under any circumstances be used to convey water to the agency.

Table AF-5 – Groundwater and Local Surface Water Production Capacity as percent of peak day demand

Purveyor	Percentage	Remarks
San Bernardino Municipal Water Department	113%	
East Valley Water District	104%	
Redlands	≈ 75 to 85%	Assumes late summer when local surface water supplies are low. When local surface water supplies are high, Redlands can produce approximately 85 to 95% of demand.
Yucaipa Valley Water District	95%	Yucaipa's intent is to maintain groundwater production facilities adequate to meet peak demand. As of August 2007, they do not meet this goal.
Fontana Water Company	Significantly less than 100%	
West Valley Water District	78%	Projected to decrease to 59% in the future.
Rialto	unknown	
Notes: Does not include non-potable use by West Valley and Yucaipa.		

5.2 Recommendations for Disaster Preparedness

This section includes the consultants recommendations based on the literature review and discussions with District staff and purveyors. The following recommendations have not been included in the administrative draft of the IRWM Plan. After these recommendations, the projects already included in the IRWM Plan that would enhance disaster preparedness will be reviewed.

5.2.1 General Recommendations

- Consider a Seismic Improvement Program/Water Infrastructure Reliability Project to review the adequacy of Valley District facilities to withstand an earthquake. East Bay Municipal Utilities District and Santa Clara Valley Water District (Santa Clara Valley Water District, 2005) are two agencies that have performed such studies. High priority facilities include Foothill Pipeline, Santa Ana River Connector, Morton Canyon Connector, and Greenspot Pipeline.
- Consider the opportunities that Big Bear Lake presents as an emergency source of water after an earthquake that interrupts SWP deliveries for many weeks.
- Consider using the existing MWD agreements to allow the use of Metropolitan Water District facilities to bypass failed Valley District facilities (and the reverse).

- Review ability to provide drinking water immediately following an earthquake. Arrangements to provide bottled water may be appropriate.
- The USGS Multi-hazards Demonstration Project (MHDP) is leading an effort to create a scenario document for a future M7.8 southern San Andreas Fault earthquake. The document will describe in detail the effects of the earthquake. It will form the basis for a November 2008 statewide earthquake response exercise. The USGS contact for this project is Dale Cox, dacox@usgs.gov, 916/997-4209. It is probable that useful information for disaster preparedness planning will come out of this effort.

5.2.2 Proposed Projects to Provide Conveyance System Redundancies for the Regional Facilities

The proposed conjunctive use project could provide the backup well production needed for the retail water agencies in an emergency when SWP supplies have been severed.

5.3 Alternative Local Supplies

This section is intended to initiate a discussion of options that would improve the water supply reliability in case of a catastrophic failure of portions of the Valley District water system.

5.3.1 Interties between Purveyors

Table AF-6 lists interconnections between purveyors. These interties could be used to balance supplies between purveyors. An interconnection between the City of San Bernardino and East Valley is currently being used to facilitate blending. This use is anticipated to end in the near future. Fontana Water Company has historically depended on supplies delivered through its interconnection with Cucamonga Valley to meet peak day demand.

Table AF-6 – System Interties between Purveyors

Transfer	Direction	Capacity (MGD)	Remarks/data source
City of San Bernardino/East Valley	Either	4	Three interties. One currently used to facilitate blending.
City of San Bernardino/Riverside	To San Bernardino	2	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/West Valley	Either	3	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/Loma Linda	Either	5	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/Colton	To Colton	3	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/Rialto	Either	3.6	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/ Riverside Highland	To Riverside/ Highland	3	(San Bernardino UWMP, Pg 2-10)
Fontana/Cucamonga Valley	Either	3.6	Fontana UWMP (2500 gpm)
West Valley/Fontana	Either		West Valley UWMP.
West Valley/Rialto	Either		West Valley UWMP.
West Valley/Colton			West Valley UWMP.
Redlands/Loma Linda	To Loma Linda		Greg Gage
Rialto[1]/Marigold	To Marigold		Rialto has historically conveyed 1,500 afy of groundwater to Marigold. The agreement under which this was accomplished is expiring.

Sources: San Bernardino Municipal Water Department 2005 UWMP; Jack Nelson, Yucaipa Valley; Ron Buchenwald, East Valley; Greg Gage, Valley District, West Valley 2005 UWMP.

[1] Rialto has several connections with other systems, including four connections with West Valley Water District, and connections with the City of San Bernardino, Fontana Water Company, and Riverside Highland Water Company.

Based on the limited sources of data, this list may be incomplete.

5.3.2 Big Bear Lake

Big Bear Lake has a capacity of over 70,000 acre-feet, most of which is owned by the Bear Valley Mutual Water Company. To enhance tourism, Big Bear Municipal Water District entered into an agreement with BVMWC and Valley District whereby Valley District makes deliveries to BVMWC "in lieu" of BVMWC taking delivery from the lake. The net effect is that water remains in the lake to enhance tourism. An agreement could be written that might make water from the lake available for municipal use in case of a catastrophe.

5.3.3 Increased Groundwater Production Capacity and Reliability

If the catastrophe is an earthquake, the most likely impact on groundwater production capacity will be damage to the electrical system of the well or to the electricity supplier's system.

Thus, providing emergency generators for "key" wells would help improve the area's ability to operate after a catastrophic failure.

5.4 Alternative Conveyance of Surface Water

5.4.1 Alternatives to Foothill Pipeline System

The following systems could provide some alternative conveyance of surface water should portions of the Foothill Pipeline System fail:

- Metropolitan's Inland Feeder parallels the Foothill Pipeline from Devil Canyon to Opal Avenue. The Inland Feeder could also be used to convey water stored in Diamond Valley north to the Valley District service area. The conveyance capacity of the Inland Feeder operating from Diamond Valley Lake to the north is reported to be 250 cfs.

- The proposed conjunctive use project would increase the ability to convey groundwater between agencies following a catastrophe.

- The proposed East Branch Extension Phase II will convey SWP water from the eastern portion of the Foothill Pipeline to Crafton Hills Pump Station. This will provide redundancy for the SARC Pipeline, Greenspot Pump Station, Morton Canyon Connector I, and Greenspot Pipeline.

5.4.2 Alternatives to the Lytle Pipeline

- Metropolitan's Foothill Feeder, also called the Rialto Pipeline, parallels the Lytle Creek Pipeline from Devil Canyon east for approximately nine miles. With turnouts it could provide alternative conveyance to West Valley's and Fontana's surface water treatment plants.

- The Baseline Feeder conveys groundwater to West Valley and Rialto. This groundwater is an alternative to SWP water conveyed by the Lytle Pipeline. It should be noted that Rialto's connection to Lytle Pipeline is not yet completed.

5.4.3 Alternatives to Baseline Feeder System

- The Lytle Creek Pipeline conveys SWP water to West Valley and can convey SWP water to Rialto when the connection is completed. This surface water is an enhancement to groundwater conveyed by the Baseline Feeder.

5.5 Back-Up Power Supplies

5.5.1 Power Supplies for Groundwater Wells

A catastrophic earthquake may cause loss of electricity for an indeterminate amount of time. In order to ensure water supplies in the immediate aftermath and weeks following a major earthquake, it is critical to have back-up generators or internal combustion engines for important production wells throughout the Region.

- Inventory wells in the Region with back-up generators.
- Determine the number of wells that could be equipped with internal combustion engines.
- Rank groundwater wells by their ability to supply water to purveyors. Wells with higher production capacities, more conveyance connections, or delivery pipeline options are preferential.
- Select a distribution of wells across the basin to be provided with back-up generators or internal combustion engines, decreasing the likelihood of a localized event impacting a majority of the most important wells.

5.5.2 Back-Up Power Supplies for Other Water Supply Facilities:

Similar evaluations should be conducted for other facilities such as water treatment plants and the key pumping plants, and back-up power generation should be put in place for use during emergencies.

6 Water Shortage Contingency Plan

Each water agency in the region is required by law to have a water shortage plan and emergency catastrophe plan. If there is a shutdown in the SWP system or a long-term drought that affects imported or local supplies, each agency in the region should participate in conservation activities that maximize use of the shared water supplies, both local surface water and ground water. These conservation efforts should be coordinated at a regional level.

The following provides examples of rules, regulations, and procedures that could be implemented to restrict or reduce water use. These could be implemented upon determination that there exists, or there is a threat of, a water shortage that affects the region's ability to provide adequate potable water supplies for the purveyors to deliver to their customers. Each agency should have a water shortage plan that is tailored to their customers in order to reach water conservation targets.

6.1 Stage I Conservation – Additional 20% Reduction

Upon determination that additional water conservation is needed, the following prohibitions can be considered and adopted with the goal of achieving an additional **20 percent** reduction in water consumption—the water conservation measures referenced in Stage I, and the following:

(a) All outdoor irrigation should occur only after 8 p.m. and before 7 a.m.

(b) Prohibit the use of potable water to wash sidewalks, walkways, driveways, parking lots, open ground, and other hard-surface areas by direct application.

(c) Prohibit the use of non-drinking-water fountains, except for those using recycled water.

(d) Prohibit the use of water that results in any flooding or run-off in gutters or streets. Limit water deliveries to residential and non-residential users to 90 percent of their water consumption for the same billing cycle during a pre-determined Base Year.

(b) Levy a surcharge of **200 percent** on all water use in excess of the maximum water use allotment referenced in subparagraph (a) above, assessed to the account of the customer.

(c) Limit the use of water from fire hydrants to fire suppression and/or other activities immediately necessary to maintain health, safety, and welfare of residents.

(d) Prohibit the use of potable water for dust control and compaction for construction projects.

(e) Prohibit the washing of automobiles, trucks, trailers, boats, and other types of mobile equipment not occurring upon the immediate premises of a commercial car wash and/or commercial service station that uses recycled water.

(f) Encourage restaurants to refrain from serving water to their customers, except upon specific request.

(g) Limit the use of potable water to irrigate grass, lawns, ground cover, shrubbery, crops, vegetation, ornamental trees, etc., to Saturdays, Mondays, and Wednesdays for even-numbered addresses and Sundays, Tuesdays, and Thursdays for odd-numbered addresses, or as otherwise established by resolution from the Board of Directors of the respective agencies.

(h) Limit water main flushing to emergency situations only.

(i) Wait list applications for Intent to Serve Letters and suspend their further processing.

Pursue a vigorous public information campaign regarding current water supply conditions and the need to reduce water consumption by such means deemed appropriate.

Meet with other water purveyors, public school districts, park agencies, and golf courses that use water sources other than purveyor-supplied water, to seek voluntary reduction in irrigation of decorative landscape and reduce irrigation of turf and play areas.

In addition to those measures stated above, adoption of water conservation measures on an urgency basis may be warranted.

6.2 Stage II Conservation – Additional 35% Reduction

Upon determination that additional water conservation is needed, the following prohibitions can be considered and adopted with the goal of achieving up to an additional **35 percent** reduction in water consumption. The water conservation measures referenced in Stage I and Stage II, and the following:

(a) Limit water deliveries for residential uses to **65 percent** of their water consumption for the same billing cycle during a pre-determined Base Year.

(b) Levy a surcharge of **400 percent** on all water use in excess of the maximum water use allotment reflected in subparagraph (a) above, and that can be assessed to the account of the customer.

(c) Require all swimming pools to be covered when not in use.

(d) Prohibit the use of potable water to irrigate grass, lawns, ground cover, shrubbery, crops, vegetation, ornamental trees, etc., and lock all irrigation meters.

(e) Suspend Intent-To-Serve Letters. However, the expiration period can be extended commensurate with the time of suspension.

In addition to those measures stated above, adoption of water conservation measures on an urgency basis may be necessary.

6.3 Stage III Conservation – Additional 50% Reduction

Upon determination that additional water conservation is needed, the following prohibitions can be considered and adopted with the goal of achieving up to an additional **50 percent** reduction in water consumption. The water conservation measures referenced in Stage I, II, and III above, and the following:

(a) Limit water deliveries for residential uses to **50 percent** of their water consumption for the same billing cycle during a pre-determined Base Year.

(b) Levy a surcharge of **500 percent** on all water use in excess of the maximum water use allotment reflected in subparagraph (a) above, and that can be assessed to the account of the customer.

(c) Prohibit the setting of new water meters and suspend all Will-Serve Letters.

In addition to those measures stated above, adoption of additional water conservation measures on an urgency basis may be necessary.

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Ron Buchwald, East Valley, August 2007
Tom Crowley, West Valley, August 2007. Email on August 28.
Chris Diggs, Redlands, August 2007
Jack Nelson, Yucaipa Valley, August 2007
Matt Litchfield, August 2007

2005 Urban Water Management Plans:

East Valley Water District
Fontana Water Company
City of Redlands
West Valley Water District
Yucaipa Valley Water District

Attachment 1

Earthquake Literature Search

This section has been prepared based on the insights included in reports prepared by water agencies outside this IRWM Plan area that summarize their experience and include their after-action reports prepared following earthquakes.

Loma Prieta, California, Earthquake of October 17, 1989.

The U.S. Geological Survey's Professional Paper on the performance of the built environment in the Loma Prieta Earthquake was compiled of a number of separate papers. Information from two of those papers that focused on water systems is discussed here (Schiff, 1998).

A section of the Professional Paper (Le Val Lund, primary author) had the following conclusions:

"On the basis of this preliminary reconnaissance survey, the 1989 Loma Prieta earthquake has reinforced the lessons learned in previous earthquakes that water and wastewater systems should do the following.

- Provide emergency power for critical operating, treatment, and support facilities
- Maintain portable light plants, generators, chlorinators, and pumps
- Develop a separate radio-communication system, independent of the telephone system
- Maintain an inventory of repair materials, parts, and fuel
- Improve the State-wide and mutual-aid programs
- Establish guidelines for State-wide emergency water-quality sampling and public notification
- Conduct an earthquake-response assessment of system facilities
- Develop an emergency-response plan
- Incorporate into local or regional emergency-response plans a more active participation by water and wastewater agencies
- Provide a method, possibly computer based, for logging problems and system operations to establish priority for repair activities
- Conduct a cross-training program to include all personnel in emergency response
- Train personnel in appropriate communication procedures
- Conduct regular periodic emergency-response exercises
- Provide flexible pipe joints
- Provide flexible pipe connections to wells, tanks, pumps, and other rigid structures

- Provide adequate anchorage for air valves and other heavy appurtenances that are installed in an inverted-pendulum position
- Design mechanical appurtenances in treatment-plant basin facilities for wave action
- Provide for a breakaway or fusible connections and (or) safety cables or chains to prevent malfunctioning mechanical equipment from interfering with other equipment in treatment-based basins
- Provide for redundancy in water and wastewater systems
- Install isolation valves and establish a regular valve-maintenance program
- Anchor water-quality-testing equipment and supply cabinets"

A separate section of the Professional Paper (Mark Pickett, primary author) focused in part on the lessons learned from the Loma Prieta Earthquake for utility operations, including preparedness and response. A brief review of the points made on utility operations is below:

- **Organization**. Important improvements in organization that were frequently identified were (1) better definition of leadership roles, (2) clearer statement of unit duties, (3) improved emergency planning to reflect the detailed events that must be dealt with in real disasters, and (4) better preparation through "what if" thinking and plan exercising.
- **Energy Sources**. Points that could provide better preparedness for loss of electrical power included:
    - Maintain close relationships with the local electrical-power company to ensure priorities of the utility and the water agency are understood.
    - Portable electrical-power generators should be provided with the proper fittings and connections for each intended use. Generators should be periodically tested.
    - Permanent engine-driven generator sets should be provided at critical support facilities.
    - Regularly scheduled periodic tests should be conducted under load.
- **Portable Equipment.** All utility personnel noted that more portable equipment was needed than was on hand in their organization. Portable equipment needs scheduled maintenance and safe and accessible storage. Personnel need to know how to operate the equipment and the equipment limitations.
- **Communications and Public Information.** Pre-disaster preparation includes development of "fill-in-the-blank" media-release forms, development of procedures to disseminate information to the media, securing of communications equipment and access to communications networks, and preparation for post-disaster investigations.

- **Inventory.** Adequate supplies and access to those supplies needs to be maintained.
- **Emergency-Response Planning**. In general, utility emergency-response plans were not well documented or pre-exercised before the earthquake.
- **Mutual-Aid Planning.** Adequate mutual-aid planning includes coordination with other water agencies, participation in regional meetings and test exercises, preparation to provide aid to adjacent Federal and State organizations, and authorization from fire department officials for utilization of fire engines as booster equipment.
- **Training**. Extensive training of employees is required.
- **Long-Term Recovery Planning.** Recovery planning needs to take into account reconstruction, rate-structure changes, integration of new knowledge into operations, collection of revenues, and record keeping for State or Federal reimbursement.

Northridge Earthquake, California, Magnitude 6.8 Earthquake of January 17, 1994

The National Institute of Standards and Technology report on the lifeline performance in the Northridge Earthquake had the following observations and recommendations concerning the performance of water facilities (Schiff, 1997).

"Seismic performance of dams, large buried reservoirs, and wells in the 1994 Northridge earthquake showed significant improvement from the 1971 San Fernando earthquake. Facilities constructed since the San Fernando earthquake that incorporated lessons learned from that earthquake performed well. These include concrete tanks and pumping stations that were subjected to very strong ground motions. The prestress-concrete water tanks were constructed using criteria more conservative than those contained in AWWA Standards for Wire-Wound Circular Prestressed Water Tanks (AWWA D110)."

"There is a need for performance criteria for water systems so that piping systems and other water system facilities and equipment can be evaluated and seismic specification established in a consistent manner. With performance criteria, water systems performance and the consequences of disruption can be evaluated. With this information a case can be made for getting public support to enhance system performance in a timely and cost-effective manner."

"The largest impact on water system performance was the failure of water lines, both large supply lines and smaller lines in the distribution system. Most pipeline damage has the result of ground deformations. This earthquake had no surface faulting, but there were many areas with ground deformations in locations that had not previously been predicted. Thus, a general level of improved materials and methods may be needed to improve system performance rather than concentrating on special problems of fault crossings. The uncertainty in predicting the location of damage increases the importance of system

redundancy and alternate supplies from other sources, such as groundwater basins and alternate aqueduct systems for water supplies."

"Many of the pipe failures appear to be related to cracks in bells that are probably associated with their method of fabrication. There is a need to study the seismic strength of welded steel bell and spigot joints and methods to improve the seismic performance of the joint. The joint performance should be compared with the current (AWWA) Standard for Welded Steel Pipe."

"The performance of surface-supported tanks was poor and damage was similar to that observed in previous earthquakes. Many of the damaged tanks were old and predate current seismic design standards. The loss of tank contents was frequently associated with failure of input and output pipe connections. These failures are due to the use of cast iron fittings and inadequate flexibility to accommodate the movement of the tank, which was typically lifting rather than sliding. The roofs and upper parts of side walls on several tanks were damaged due to sloshing. Several examples of elephant foot buckling were observed."

"There is a need for follow up surveys to determine the performance of tanks constructed using current seismic standards and to determine the relative performance of anchored and unanchored tanks. Methods to address the damage due to sloshing should be identified for existing and new tanks. Based on the effect of tank performance on water system performance, the need for reducing the risk of tank damage by improving anchorage, stiffening to prevent buckling, and reducing effects of sloshing can be determined."

"Sloshing in large basins in water filtration and water reclamation plants caused damage in both 1989 Loma Prieta and the Northridge events. Although not critical, the damaged equipment can cause malfunction of other equipment. For example, sloshing caused the jamming of the chain drive sludge scrapers in seven out of 44 final clarifiers of a water reclamation plant. There is a continuing need to consider sloshing and shaking in the design of mechanical equipment and baffles in large basins of water and wastewater treatment plants."

"Air and vacuum valves on pipelines are configured in an inverted pendulum above the ground surface. In the Northridge event many valves toppled, had cracked bodies or damaged floats (balls). Also the damage may have been caused by transient pressures in the pipeline. A study is required to improve the performance of these valves in an earthquake."

"The disruption of commercial power emphasizes the need for reliable emergency power supplies. While emergency power for pumping stations and treatment plants performed well, there were indications that testing units under full load may enhance performance.

"The 1971 San Fernando and 1987 Whittier Narrows earthquakes experience had encouraged water agencies to prepare emergency response plans and establish emergency operations centers. These plans have been tested and implemented by lifeline agencies. Water system emergency response plans generally worked well in the Northridge earthquake. This was attributed to their periodic testing. It is important that plans address expected problems in communicating with personnel and with transportation problems. Because of transportation problems and the disruption of several lifelines, it is important that water system disaster plans make provisions for supporting most needs of their workers, including food and temporary housing. In the recovery after the earthquake, outside contractors may be retained to speed the recovery. It is important that all personnel be aware of OSHA requirements for entering confined spaces, such as large diameter pipes, conduits and tunnels. To improve the performance of utility work crews, utilities should consider providing support for worker families that have been directly affected by the earthquake. For example, this could include providing assistance with getting shelter or help in evaluating damage to homes."

"Boil water orders were issued as a precaution. Because of the time needed to confirm that water is safe once an order is issued, the public may be needlessly inconvenienced. Consideration should be given to developing a mobile water quality laboratory to expedite, in the field after repairs have been made, the determination if the water is safe for drinking. More rapid methods for evaluating the safety of water should be explored."

"There is a need for adequate documentation of emergency response and recovery costs. For public utilities, as is the case for most water systems, a record is needed for reimbursement from FEMA. Documentation is also needed to substantiate insurance claims."

"The disruption of the water supply demonstrated that many critical facilities were not prepared with emergency water supplies or even a means for connecting an external source into their system."

"This is a need for better public education about the consequences of water system disruption and use of appropriate mitigation measures."

"While the performance of customer water is outside of the jurisdiction of water utilities, damage to these systems was costly and disruptive in the Northridge earthquake. The Oliveview Hospital, which was reconstructed after experiencing severe damage in the San Fernando earthquake had to be evacuated due to the failure of water systems within the hospital. The vulnerability of water systems in buildings should be evaluated and standards improved to reduce the losses and disruption from these systems."

This report also addresses damage and repair of supply pipelines. Since supply pipelines are the main facilities of SBVWMD, these estimates may be of particular interest. They are summarized in Table 1.

Table 1– Repair of Supply Pipelines after Northridge Earthquake

Pipeline Description	Repair time	Remarks
54- to 33-inch modified prestressed concrete cylinder pipe	65 days	Castaic Lake Water Agency's pipeline from treatment plant to service area. 35 leaks. New fabricated sections were installed and pulled rubber gasket joints were welded in place.
SWP – West Branch, 85-inch welded steel pipe to Jensen WTP	2 days	10-foot section of damaged pipe replaced with pipe fabricated at MWD yard.
Los Angeles Aqueduct No.1		Aqueduct No. 1 had damage at four locations; and it was able to be operated at very low flow for about a week to allow repairs to Aqueduct No. 2, then shut down for repairs. Operated at one-half capacity, after temporary repairs were made, during a planned Metropolitan shutdown. It was out of service from April 1 until summer for permanent repairs.
Los Angeles Aqueduct No. 2	One week	Out of service for the first week after earthquake for repairs.
78-inch North Branch Feeder (Metropolitan)	45 days	From Jensen Plant to Simi Valley. 15 to 20 major pulled pints and 500 cracks. Replacement air and vacuum valves delivered by manufacturer in two days.
48-inch, Granada Trunk Line (LADWP)	12 days	Welded Steel Pipe and modified prestressed concrete cylinder pipe. Four major pulled mechanical couplings and two tension and compression failures.
68-inch, WSP, Rinaldi Trunk Line (LADWP)		Welded Steel Pipe. Three pulled welded bell and spigot joints and a tension and compression failure.

Santa Clara Valley Water District Water Infrastructure Reliability Project

At the time of Santa Clara's Water Infrastructure Reliability Report, the system could suffer up to a 60-day outage if a major event, such as a 7.9 magnitude earthquake on the San Andreas Fault, were to occur.

Recommended improvements to the system included:

- Life Safety – retrofit of all operations buildings
- Emergency Planning and Studies – Recovery Plan and Retailer Shortages Agreement
- Agreements – Mutual aid, contractor retainer, pipe rental companies, welder retainer, retailer incentives
- Capital Improvements – SCVWD-owned well fields
- Operational Improvements – Stockpile pipes and system materials
- SCADA Improvements

The estimated cost of these improvements was $150 million (report data May 2005). With these improvements the estimated outage period would reduce to 7 to 14 days.

San Simeon, California, Magnitude 6.5 Earthquake of December 22, 2003

The San Simeon earthquake damaged two of 19 dams in the area.

There was no reported damage to groundwater wells other than the loss of power from a few hours to several days.

Steel water tanks damaged included two in the City of Paso Robles water system, one in a private system serving a mobile home park, three (of four) at the City of Templeton, and an elevated tank in the City of Guadalupe.

Pipeline breaks were reported in most purveyor systems (Lund, 2003).

Denali, Alaska, Magnitude 7.9 Earthquake of November 3, 2002

Population near the epicenter is limited to about 10,000 people in rural locations. Nearly all residents rely on private wells for water supply. Two events of well casings ejecting out of the ground were reported. These events may be attributed to accumulated frost heave forces on casing pipe that lost its soil resistance temporarily due to shaking and/or liquefaction.

City of San Diego

In 2001, the City of San Diego completed a study of the expected operational performance of the City of San Diego Water Supply pipelines when exposed to possible future scenario earthquakes. The analysis used a specialized GIS software package.

For the most serious earthquake, the study determined that it would take 1.7 days to stabilize the system, 20 days to restore backbone pipes, 35 days to restore distribution pipes, and 74 days to complete all pipe repairs.

The study also examined the costs and benefits of different seismic improvement programs and developed benefit/cost ratios for each program (Collins, 2001).

While the City of San Diego has a large number of reservoirs in the distribution system, this study did not examine those systems.

City of Vancouver, Canada

In 2000, the City of Vancouver completed a study of the expected operational performance of the Regional Water Distribution System. In the event of a Design Basis Earthquake, a 475-year event, the report concluded the following (JELC Working Committee, 2000):

1. The present system will be severely impacted. Chlorine facilities evaluated have life safety concerns. Fiberglass tanks containing sodium hypochlorite and ammonia may overturn due to lack of anchorage.

2. An estimated 30 pipeline failures will occur, making much of the system inoperable.

3. All pump stations that were evaluated will likely be inoperable as a result of nonstructural and, in some cases, structural damage. All but two pump stations are dependent on commercial power. If power is out, pump stations without self-contained power will be inoperable.

4. All reservoir roofs/column supports are vulnerable. Some may collapse. In general, tanks should remain operable.

A later discussion of the development of an alternate water supply for Vancouver proposed development of procedures to allow use of two existing irrigation wells for potable supply should the city's supplies from reservoirs fail in an earthquake. In addition, a dedicated fire protection system, possibly supplied with sea water, was proposed (City of Vancouver).

San Fernando, California, Magnitude 6.7 Earthquake of 1971

Immediately following the earthquake, approximately 100,000 customers were without water, and a citywide "boil water" advisory was issued. Within 5 days, water service was restored to all but a few thousand customers; after 10 days, less than 100 scattered customers were without water. All "boil water" orders were lifted after 12 days (Housing and Urban Development, 2001).

Two dams, Van Norman and Pacoima were seriously damaged by this earthquake. Van Norman was replaced and Pacoima was repaired.

Kobe, Japan, Magnitude 6.8 Earthquake of January 17, 1995

An estimated 2,000 water pipeline failures occurred, draining reservoirs and limiting water available for fire suppression. Transmission and distribution pipeline and water purification plant damage resulted in 300,000 people still without water one month following the earthquake.

An aggressive earthquake mitigation program had replaced most of the city's cast iron pipe prior to the earthquake. Without that, program failures and restoration time could have been far greater. About 6 percent of Kobe's ductile iron pipe had a special seismic joint that appears to have had little or no damage. An earthquake monitoring and control system isolated 18 reservoirs saving the water for drinking in the days following the event.

The earthquake monitoring and control system consists of an earthquake ground motion monitoring center, telemetry, and reservoirs with earthquake isolation valves at 21 locations. There are dual reservoirs at each of the 21 sites; one has an isolation valve to be controlled following an earthquake, and one does not. This concept allows shutdown of one reservoir while maintaining service should the second reservoir inadvertently shut down. If the system can keep up with system leakage, the isolated reservoir can be put back on line from the control center. If the system cannot keep up with demand, the reservoir remains isolated (Ballantyne, 1995).

There were two major issues identified that had delayed system restoration:

- No water pressure was available to check the repairs while the tunnels remained out of service.
- Access – limited by collapsed buildings and traffic congestion.

California Division of Mines and Geology Planning Scenarios

The California Division of Mines and Geology has prepared two special publications intended to provide an understanding of the impacts of major earthquakes in southern California. The first was a Magnitude 8.3 Earthquake on the San Andreas Fault (California, 1982). The second was a magnitude 7 earthquake on the San Bernardino Valley segment of the San Jacinto Fault (California, 1993). Both studies anticipate significant damage to the State Water Project. That information is discussed in a later section of this report that focuses on the State Water Project. Impacts to other water facilities in the SBVWMD service area are discussed here.

The San Andreas publication hypothesized an earthquake in which the southern limit of surface fault rupture is outside of the San Bernardino service area (approximately 10 miles northwest of Devil Canyon Power Plant). Thus, it does not directly address facilities within the San Bernardino service area. Within the area that is affected (generally west and north of San Bernardino), it does not anticipate widespread damage to primary transmission lines, although some pipe failures will occur. In distribution lines, there will be hundreds of breaks and thousands of leaks. Pumping plants are generally more compact structures and, with the exception of related electrical equipment and transformers, will probably not suffer as great of damage as distribution pipelines.

The San Jacinto publication hypothesized an earthquake within Valley District's service area and thus, substantially more impact on SBVWMD. The publication's planning scenario states that within 25 miles of the fault, damage to treatment facilities, pumping stations, and transmission and distribution pipelines will reduce service by 20 percent for up to five days. Restoration will take up to two weeks. People will be asked to use emergency supplies, boil their water, or take other safety measures against contamination. Delays will be necessary because waste water lines must be repaired before fresh water lines. The most serious

problems will be concentrated in the low lying areas of San Bernardino and the Santa Ana River Basin. The extent of damage and contamination of wells and groundwater will depend on groundwater levels at the time of the earthquake.

Specific failures hypothesized by the San Jacinto publication to facilities that convey SBVWMD water include (State Water Project facilities are discussed in a later section):

- San Gabriel Valley MWD's pipeline closed for 5 to 10 days. Fault displacement.
- Valley District's Foothill Pipeline closed for 4 to 6 days. Moderate liquefaction potential.
- Valley District's Baseline Feeder closed for 4 to 6 days.

The main source for this hypothesis was the then General Manager of SBVWMD, Louis Fletcher.

Regional Electrical System Vulnerability

During this evaluation, no recent information was available from Southern California Edison on the anticipated likelihood of a widespread failure of the electrical system serving the San Bernardino Area. Nor was information found on the times required to restore power after the Loma Prieta Earthquake. In the absence of that data, we reviewed the impacts of the Northridge earthquake.

The total generating capacity supplying the greater Los Angeles area at the time of the Magnitude 6.8 Northridge Earthquake of January 17, 1994, was approximately 10,000 MW. When the earthquake occurred at 4:30 AM the southern California area was exporting approximately 1800 MW to the Northwest over AC and DC interties that link Southern California to Oregon and Washington State. As a result of the earthquake, the AC and DC interties were opened and the power grid in the United States west of Denver was spilt into three separate islands. Due to the loss of power, there were short-term outages, up to three hours, in British Columbia, Montana, Wyoming, Idaho, Oregon, and Washington.

Within the City of Los Angeles, restoration times of power at major substations varied from 6:18 AM to 11:03 PM on the day of the earthquake. Due to distribution system failures, power remained out for a longer period for some customers. But, within 24 hours power was restored to over 90 percent of its customers. Had the earthquake occurred during the summer when loads are heavier, restoration would have taken longer.

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Appendix G: Climate Change Vulnerability Checklist

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Climate Change Vulnerability Checklist

Changes related to climate change in the IRWM guidelines made between the 2010 and 2012 versions need to be addressed. The new IRWM plan must include a list of prioritized vulnerabilities based on the vulnerability assessment checklist as well as a plan, program, or methodology for further data gathering and analysis of the prioritized vulnerabilities. Below is the vulnerability assessment checklist for the Upper Santa Ana River IRWM planning area.

Water Demand:

Are there major industries that require cooling/processed water in your planning region?

- The Mountain View power plant brings power to more than 685,000 homes. This high energy output requires the plant to utilize municipal effluent as well as ground water for cooling. The facility loses 3,300 gallons of water per minute to evaporation from the cooling towers, but for every pound of water that evaporates approximately 1,000 BTUs of heat are extracted. It also has a water treatment plant on site that recovers 75-80% of water that would normally have been disposed of. This recycling process has kept Redlands waste water fees at some of the lowest levels in the state. Despite the fact that the plant uses thirty percent less energy compared to other plants, it is the highest polluting power plant in the state; producing 1.85 million metric tons of carbon dioxide per year.

Does water use vary by more than 50% seasonally in parts of your region?

- The Inland Empire climate varies greatly from summer to winter, and therefore water demand varies accordingly. There is a greater demand for irrigation needs during the hotter season that drives up the per capita water use.

Are crops in your region climate sensitive? Would shifts in daily heat patterns, such as how long heat lingers before night-time cooling, be prohibitive for some crops?

- Citrus trees are not tolerable of below freezing temperatures. Colder winters with freezing nights have the potential to cause significant damage to citrus crops. In response to higher temperatures, evapotranspiration rates of the plants may increase, requiring more water to be used on warmer days

Do groundwater supplies in your region lack resiliency after drought events?

- Typically groundwater supplies do not lack resiliency because groundwater is replenished and stored in wet years.

Are water use curtailment measures effective in your region?

- Conservation efforts in the area include The Water Conservation Education Program, Weather Based Irrigation Controllers Program, “climate appropriate” plant promotion with Home Depot stores and other stores and nurseries, and the water conservation demonstration garden at California State University San Bernardino. These programs have begun to address the conservation needs of the area without implementing direct curtailment measures. Commercial, industrial, and institutional water reduction plans are also in place.

Are some in stream flow requirements in your region either currently insufficient to support aquatic life, or occasionally unmet?

- The in stream flows are sufficient to support aquatic life because natural flows are augmented by Publically Owned Treatment Works flows that are highly treated.

Water Supply:

Does a portion of the water supply in your region come from snowmelt?

- The water supply in the region does not come from snowmelt.

Does part of your region rely on water diverted from the Delta, imported from the Colorado River or imported from other climate-sensitive systems outside of your region?

- State Water Project water has been made available to East Valley. The water for the region is currently 57% ground water, 24% State Water Project water, 17% surface water, and 2% recycled water. The region does not rely on any water imported from the Colorado River.

Does part of your region rely of coastal aquifers? Has salt intrusion been a problem in the past?

- The region does not rely on coastal aquifers, but salt intrusion could affect the function of the State Water Project, which could ultimately have an impact on water supplies.

Would your region have difficulty in storing carryover supply surpluses from year to year?

- The region would only have issues storing surplus water in times when the basins are already saturated.

Has your region faced a drought in the past during which it failed to meet local water demands?

- The region has not faced a drought in which it was unable to meet local water demands.

Does your region have invasive species management issues at your facilities, along conveyance structures, or in habitat areas?

- The region has two invasive species, the Giant Reed and the Tamarisk Annual Grass. The Giant Reed was introduced in California in the 1820's in an attempt to help control erosion, but has since become an invasive plant. It has increased the fire fuel by 30% in the Santa Ana Basin area and also has the potential to cause major issues during floods. In addition to these issues, the Giant Reed uses 56,200 acre-ft per year in the Santa Ana River, decreasing the amount of water available to the population. Tamarisk was introduced as an ornamental planet, but has become invasive as it absorbs a large amount of water and creates salt deposits. Its seeds are dispersed by wind, have no dormancy requirements, and have a 24 hour germination period, allowing it to spread quickly and easily.

Water Quality:

Are increased wildfires a threat in your region? If so, does your region include reservoirs with fire-susceptible vegetation nearby which could pose a water quality concern from increased erosion?

- Wildfires are a threat in the region, especially during dry summers.

Does part of your region rely on surface water bodies with current or recurrent water quality issues related to eutrophication, such as low dissolved oxygen or algal blooms? Are there other water quality constituents potentially exacerbated by climate change?

- Big Bear Lake has had issues with high nitrogen and nutrient levels that promote algal growth. Although the lake is no longer a main water supply source, its contaminant levels affect recreational activity. The Middle Santa Anna River Watershed has been found to have issues with pathogens and high coliform count.

Are seasonal low flows decreasing for some water bodies in your region? If so, are the reduced flows limiting the water bodies' assimilative capacity?

- Flow levels for the water bodies in the region have been consistent with weather conditions.

Are there beneficial uses designated for some water bodies in your region that cannot always be met due to water quality issues?

- Big Bear Lake is a popular recreational area for swimming, boating and fishing in the San Bernardino Mountains. It was originally created by Bear Valley Mutual Water Company to serve as a storage reservoir in order to provide agricultural water to the customers downstream. Big Bear Lake faces many water quality issues that have the potential to affect its recreational uses. In 1990 Big Bear Lake was added to California's list of impaired water bodies by the Santa Ana Regional Water Quality Control Board. A Total Maximum Daily Load was implemented in 2007 in order to protect the lake's beneficial uses. Various water bodies in the Middle Santa Ana River Watershed were also added to the list of impaired water bodies in 1994 because the fecal coliform objective was exceeded, ultimately affecting the water contact recreation of the area. The table below lists the pollutants affecting the Big Bear Lake Watershed and the Middle Santa Ana Watershed.

Table 7: Pollutants Effecting Water bodies

Santa Ana Region Pollutants	
Water Body	Pollutants
Big Bear Lake Watershed	
Big Bear Lake	Metals, Noxious aquatic plants and Nutrients, Sedimentation/Siltation, and Mercury
Grout Creek	Metals and Nutrients
Knickerbocker Creek	Metals and Pathogens
Rathbone Creek	Nutrients and Sedimentation/Siltation
Summit Creek	Nutrients
Middle Santa Ana River Watershed	
Chino Creek, Reach 1	Pathogens
Chino Creek, Reach 2	High Coliform Count
Cucamonga Creek, Valley Ranch	High Coliform Count
Mill Creek (Prado Area)	Pathogens
Santa Ana River, Reach 3	Pathogens and Nitrate
Prado Park Lake	Pathogens

Does part of your region currently observe water quality shifts during rain events that impact treatment facility operation?

- The region does not observe water quality shifts during rain events that impact water treatment facility operations.

Sea Level Rise:

Has coastal erosion already been observed in your region?

- Coastal erosion has not been observed in the region.

Are there coastal structures, such as levees or breakwaters, in your region?

- There are no coastal structures in the region.

Is there significant coastal infrastructure, such as residences, recreation, water and wastewater treatment, tourism, and transportation at less than six feet above mean sea level in your region?

- There is no infrastructure less than six feet above mean sea level.

Are there climate-sensitive low-lying coastal habitats in your region?

- There are no climate-sensitive low-lying coastal habitats in the region.

Are there areas in your region that currently flood during extreme high tides or storm surges?

- There are no areas in the region that flood during extreme high tides or storm surges do to coastal waters.

Is there land subsidence in the coastal area of your region?

- There is no land subsidence in the coastal area of the region.

Do tidal gauges along the coastal parts of your region show an increase over the past several decades?

- There are no coastal parts in the region.

Flooding:

Does critical infrastructure in your region lie within the 200-year floodplain?

- The 200-year floodplain is not available at this time, but infrastructure such as Crafton Elementary School lies in the 100 year floodplain provided by FEMA for The Zanja as well as many buildings along the Santa Ana.

Does part of your region lie within the Sacramento-San Joaquin Drainage District?

- The region does not lie within the Sacramento-San Joaquin Drainage District.

Does aging critical flood protection infrastructure exist in your region?

- Flood protection in the area has been in place for several decades, but improvements have been made in the last decade. The federal Santa Ana River Mainstream project includes the Seven Oaks Dam, Prado Dam, and other flood control facilities along the Santa Ana River, which provide flood protection to the residents of San Bernardino, Riverside, and Orange Counties. The Seven Oaks Dam was completed in 1999 and the construction of the SAR project began in 1989.

Have flood control facilities (such as impoundment structures) been insufficient in the past?

- Flood control facilities have failed as recently as December 2010, when several creeks and debris basins overflowed and flooded the City of Highland.

Are wildfires a concern in parts of your region?

- Wildfires have always been a concern for the region. An example would be the Old Fire in 2003, which burned 91,281 acres, destroyed 993 homes, and killed 6 people. During this incident The East Valley Water District advised residents in certain areas to boil water for drinking and eating in order to ensure that the water was safe to drink.

Ecosystem and Habitat Vulnerability:

Does your region include inland or coastal aquatic habitats vulnerable to erosion and sedimentation issues?

- The region does not include inland or coastal aquatic habitats vulnerable to erosion.

Does your region include estuarine habitats which rely on seasonal freshwater flow patterns?

- The region does not include estuarine habitats.

Do climate-sensitive fauna or flora populations live in your region?

- Climate sensitive plants live in the region.

Do endangered or threatened species exist in your region? Are changes in species distribution already being observed in parts of your region?

- Endangered species live in the region.

Does the region rely on aquatic or water-dependent habitats for recreation or other economic activities?

- The region does rely on aquatic habitats for recreational purposes, as is the case for Big Bear Lake and Middle Santa Ana.

Are there rivers in your region with quantified environmental flow requirements or known water quality/quantity stressors to aquatic life?

- There are rivers in the region with water quality stressors such as Middle Santa Ana.

Do estuaries, coastal dues, wetlands, marshes, or exposed beaches exist in your region? If so, are coastal storms possible/frequent in your region?

- Exposed coastal areas do not exist in the region.

Does your region include one or more of the habitats described in the Endangered Species Coalition's Top 10 habitats vulnerable to climate change?

- The region does not include any of the habitats described in the Endangered Species Coalition's Top 10 habitats vulnerable to climate change.

Are there areas of fragmented estuarine, aquatic, or wetland wildlife habitat within your region? Are there movement corridors for species to naturally migrate? Are there infrastructure projects planned that might preclude species movement?

- The region is not aware of fragmented wildlife habitat within the region, or infrastructure projects planned that might preclude species movement.

Hydropower:

Is hydropower a source of electricity in your region?

- The hydropower stations located in the area include the Santa Ana No 1 & 2, Mill Creek No 2 & 3, San Gorgonio, and Lytle Creek. These stations are owned and operated by the Southern California Edison Company and produce 12.63 MW of electricity. Below lists the generating capacity of each location.

Hydropower Station Capacity	
Hydropower Station	**Generating Capacity (MW)**
Santa Ana No 1 & 2	6.3
Mill Creek No 1 & 2	3.23
San Gorgonio	2.63
Lytle Creek	0.45
Devil Canyon	276.46
Fontana Sandhill WTP Hydropower Facility	0.31

Are energy needs in your region expected to increase in the future? If so, are there future plans for hydropower generating facilities or conditions for hydropower generation in your region?

- There are currently no future plans for more hydropower generation facilities in the region.

The above checklist demonstrates the areas for which the region is most vulnerable.

Appendix H: Groundwater Flow Models



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Groundwater Flow Models

1.1 REFINED BASIN FLOW MODEL – NEWMARK GROUNDWATER FLOW MODEL (RBFM/NGFM) AND REFINED BASIN SOLUTE TRANSPORTATION MODEL (RBSTM)

The RBFM/NGFM is being used as a tool for evaluating basin-wide management strategies as outlined in the Integrated Regional Water Management Plan (Plan) through the Basin Technical Advisory Committee (BTAC) process established in 2007 when the Plan was adopted. The RBFM/NGFM is also being used as a tool in support of a Consent Decree (CD) stipulated Institutional Controls (IC) measures established for the Newmark Groundwater Contamination Superfund Site (NGCSS). The RBSTM is also being used to aid in IC related assessments, although on an informal basis, and to aid in evaluating basin-wide management strategies.

The RBFM/NGFM have been updated and refined since 2007 to better simulate the groundwater basin and the interaction with surface water hydrology and is currently undergoing numerous enhancements as recommended by a Peer Review process conducted in 2009. Valley District and SBMWD were successful in obtaining a grant from the EPA to fund the model enhancements through Cooperative Agreement Assistance ID No.: V-00T73801-0. The model enhancement team consists of staff from Valley District, SBMWD and their consultants, Geoscience Support Services, In (GSSI), Stantec, Balleau Groundwater, In and Wildermuth Environmental, In A copy of the Work Plan submitted to the EPA as part of the grant application for the model enhancements are attached as Exhibit 1 for reference.

The model is a product of success as a result of teamwork between consisting of Valley District, SBMWD, their contractors and the USGS. Listed below is a summary of the progress made with the RBFM/NGFM & RBSTM model since 2007 and objectives of the model enhancements currently being undertaken:

- Improve the ability of the model to emulate the physical system for evaluating groundwater management initiatives.

- Utilize the watershed model developed for Valley District by GSSI to aid in constraining surface hydrology components (i.e. stream flow and return flow) for the RBFM/NGFM.

- Improve the ability of the model to make predictions for protecting the performance of the Newmark and Muscoy OU IRA's.

- Establish natural and artificial recharge thresholds in the SBBA. Analyze basin project management scenarios including additional mountain front runoff water capture and recharge opportunities.

- Improve and augment the work completed under USEPA Grant X-97957701-0 to allow evaluation of liquefaction potential, subsidence potential and salinity management.

- Develop a web-based interface that will allow the public to perform basic modeling runs online.

1.2 YUCAIPA GROUNDWATER BASIN FLOW MODEL

Development of the Yucaipa Groundwater Basin model is in the preliminary stages – the goal of this effort is to develop a management tool similar to the RBFM/NGFM for the Yucaipa Groundwater Basin.

Stakeholders to the Yucaipa Groundwater Basin Flow Model are the City of Redlands, San Bernardino Valley Municipal Water District, San Gorgonio Pass Water Agency, South Mesa Water Company, City of Yucaipa, Yucaipa Valley Water District and Western Heights Water Company.

The first step in the model development process is the analysis of the storage capacity and safe yield (average precipitation stored as groundwater) for each sub-basin. This effort is presently underway and will be complete by the end of 2013. Also underway is the investigation of possible recharge tests that will provide valuable data for the groundwater flow model while also testing the effectiveness of potential recharge areas. The goal is to begin recharge testing in the spring of 2014.

Intended groundwater flow model uses: Evaluate potential management strategies to determine their effectiveness before significant investment in facilities.

1.3 RIALTO-COLTON BASIN GROUNDWATER MODEL REFINEMENT

Efforts are underway through the Rialto/Colton Basin Collaborative Group. The purpose of the model refinement is to develop one model for the Rialto-Colton Basin from the existing models developed by the USGS (2001), San Bernardino County/Geo-Logic (2011), EPA/CH2MHill (2012), and ERM/Emhart (2013). The refined model will be a management tool, similar to the RBFM/NGFM for the Rialto-Colton Groundwater Basin, for evaluating basin management strategies and is capable of assessing remediation strategies.

Participants to the Rialto-Colton Basin Groundwater Flow Model include West Valley Water District, City of Rialto, San Bernardino Valley Municipal Water District, City of Colton, and Goodrich/UT In addition, the US EPA and USGS staff have agreed to participate in the efforts in an advisory capacity.

Intended uses: evaluate potential basin management and remediation strategies to determine their effectiveness before significant investment in facilities.

1.4 RIVERSIDE-ARLINGTON GROUNDWATER FLOW MODEL

The Riverside-Arlington Groundwater Flow Model (RAGFM) was completed in 2011 and provides multifaceted support to Riverside Public Utilities (RPU) and the Western Municipal Water District (WMWD) to effectively manage groundwater resources. There is an ongoing expansion of groundwater management activities including increased groundwater level monitoring, recharge basin development and development of groundwater management plans (GWMPs). These activities will be significantly enhanced through the use of the RAGFM.

The RAGFM development process provided a more in depth understanding of the Riverside and Arlington groundwater basins' characteristics and behaviors and their relationship with neighboring basins. This enhanced knowledge has led to an estimate of the safe yield for the Riverside North, Riverside South and Arlington basins. In addition, the RAGFM, with extensive database and visualization tools will optimize monitoring, identifying data gaps that need additional monitoring and ensuring the overall monitoring program is delivering quality data.

The RAGFM will also be utilized in the development of conjunctive use projects. The RAGFM will be used as a tool to analyze different management alternatives in support of the development of GWMP's while providing easy to use visualization data for stakeholders and the general publi

Intended stakeholders of the RAGFM are the City of Colton, City of Riverside Public Utilities, Jurupa Community Services District, Riverside Highland Water Company, Rubidoux Community Services District, West Valley Municipal Water District, San Bernardino Valley Municipal Water District, San Bernardino Municipal Water Department (RIX Facility), Western-San Bernardino Watermaster.

Appendix I: State Water Project Peak Day Demands for Customers of the San Bernardino Valley MWD



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GEI Consultants
Bookman-Edmonston Division

Geotechnical
Environmental and
Water Resources
Engineering

Upper Santa Ana River Watershed Integrated Regional Water Management Plan

Task 15 – State Water Project Peak Day Demands for Customers of the San Bernardino Valley Municipal Water District

Submitted to: San Bernardino Valley Municipal Water District

Date: November 2007

Partial Revision: January 2015

Project No. 054510

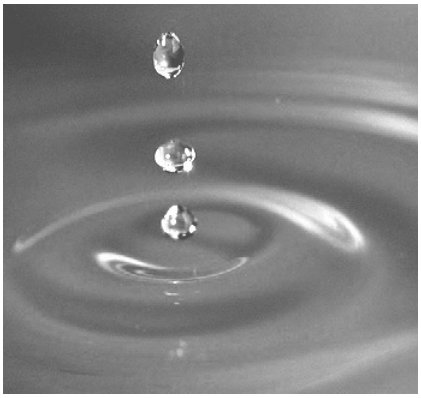

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Figure 1-1 Valley District Direct Delivery Point

Appendix A

Water Supply Contingency Work Group July 2007 sketch

J:\054510 - SBVMWD - Integrated Plan\Task 15 - Direct Delivery Peak Day 2.doc

1 Introduction

The purpose of this task is to determine the adequacy of the San Bernardino Valley Municipal Water District's (Valley District) current facilities to meet its customer's peak demand today and in the future.

Valley District is a State water contractor (SWC) and imports water from the State Water Project (SWP) for both direct delivery and for artificial recharge. Since SWP water is untreated, direct deliveries are primarily to surface water treatment plants with the remainder being for irrigation.

Deliveries are made from a number of "turnouts" on Valley District's facilities. Figure 1-1 is a simplified sketch of the various turnouts on Valley District's system.

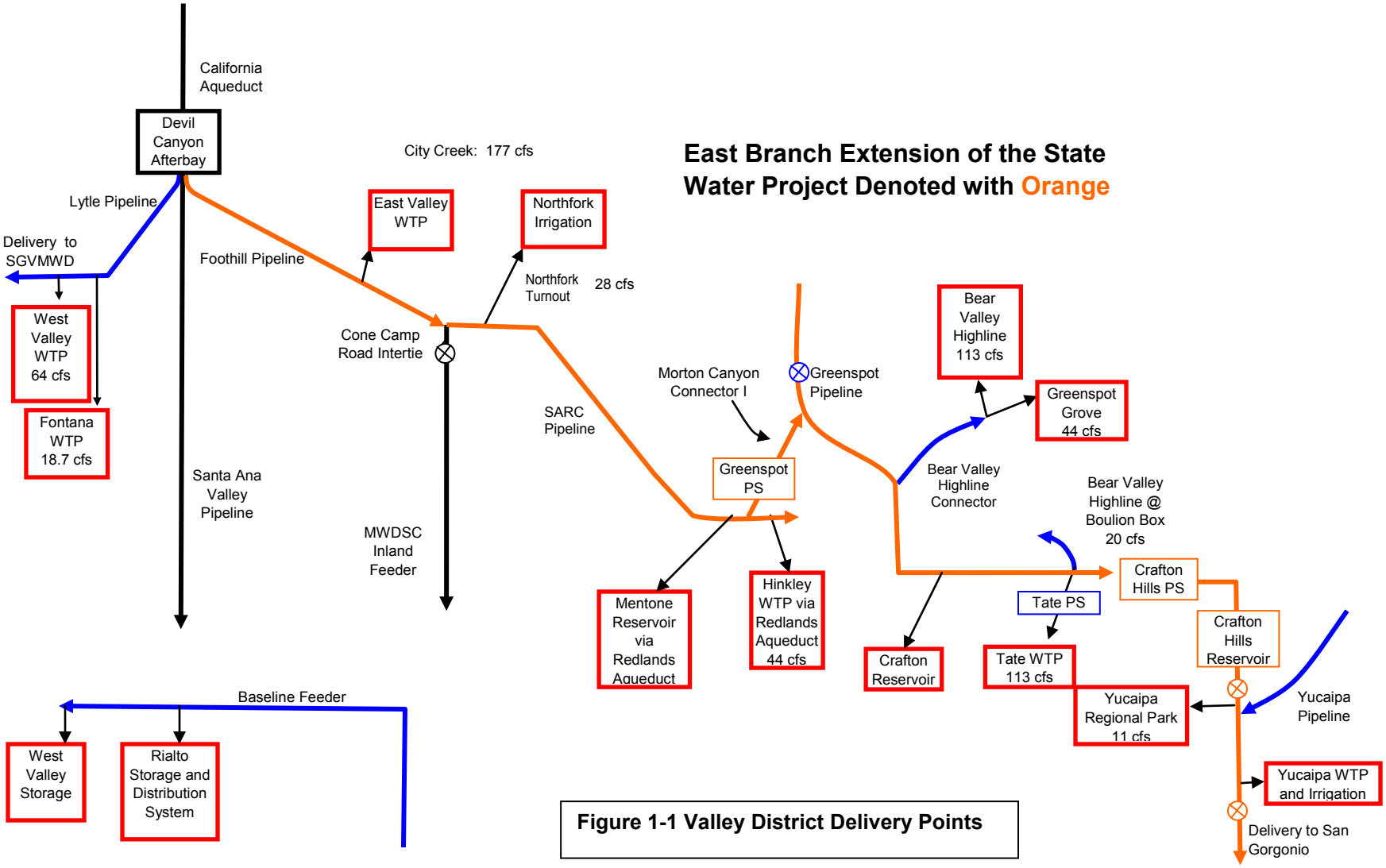


Figure 1-1 Valley District Delivery Points

2 Local Agency Peak Day Supply and Demand

This section includes a review of purveyors' overall peak day demand as well as the subject of this analysis, the SWP peak day demand. Information regarding SWP peak day demand was obtained from the purveyors' Urban Water Management Plans and, in the absence of this data, from discussion with the water purveyors. The Foothill Pipeline, SARC Pipeline, Greenspot Pipeline, East Branch Extension Pipeline, Greenspot Pump Station, Crafton Hills Pump Station, Crafton Hills Reservoir and Bryant Street Pipeline make up the East Branch of the SWP. San Gorgonio Pass Water Agency, a SWC, receives water through the East Branch Extension of the SWP so their capacities in this system are also included.

Note that as purveyors typically deal in units of million-gallons-per-day (MGD), those units have been used here for the purveyors. The conversion between MGD and cfs is: 1.55 cfs/day = 1 MGD.

2.1 City of San Bernardino

San Bernardino takes deliveries off the Foothill Pipeline at Sweetwater Spreading Grounds and at Waterman Spreading Grounds. These deliveries are recharged and then extracted from seven of the City's nearby wells.

Table 2-1 – City of San Bernardino Peak Day Supply and Demand

(MGD)

	Current	Future	Remarks
Supply			
Local Surface Water SWP Water	0	0	San Bernardino uses no local surface water. See below.
Groundwater			
Produced by wells under influence of surface water	14	14	The five DC wells and EPA 6 and 7 wells respond within six to seven months to recharge in the Devil Canyon area. The production capacity of these wells is 9,700 gpm. Total groundwater production capacity is 70,000 gpm.
Other wells	101		
Total groundwater	115		
Total Supply	115		
Demand			
Peak Day	102	157	In 2002, San Bernardino's "Max Day" was 47,000 gpm. The City suggests using a factor of 1.5 to convert to "Peak Day." Per UWMP, year 2005 demand was 47,501 afy and year 2025 demand is projected to be 73,504 afy. Future Peak Day projected proportionately.
SWP Peak Day - cfs		**15**	
Note:			

2.2 East Valley Water District

Table 2-2 – East Valley Water District Peak Day Supply and Demand

(MGD)

	Current	Future	Remarks
Supply (Potable only)			
Surface Water			Philip A Disch SWTP (Plant 134) capacity is 4 MGD. Intent is to expand in future to 8 MGD. Water Supply source varies seasonally. In early summer, local supply may meet majority of demand. By September and October, in-lieu (supplied by the SWP) may be more than 50 percent of supply. It is rare to exceed local and in-lieu supply. However, due to Seven Oaks water quality challenges, it has been happening in the last few years. Plant may be expanded to 8 MGD per 2005 UWMP. Per 2005 UWMP, well capacity, including inactive wells, is 38.74 MGD.
Local	0 to 4	0 to 8	
In-Lieu	0 to 4	0 to 8	
SWP	0 to 4	0 to 8	
Total	4	8	
Groundwater	31.4		
Total Supply	35.4		Per Ron Buchwald, supply is 104% of peak demand of 34 MGD.
Demand (Potable only)			
Peak Day	34	50	2007 peak from Ron Buchwald, August 16, 2007. UWMP projects annual consumption to increase from 22,428 in 2005 to 32,940 afy in 2025. Assume future peak day increases proportionately.
SWP Peak Day - cfs		**12.4**	
Note: Irrigation deliveries off the North Fork Canal are not included in this analysis.			

2.3 City of Redlands

Table 2-3 – City of Redland Peak Day Supply and Demand

(MGD)

	Current	Future	Remarks
Supply			
Surface Water			Hinkley WTP is 14 MGD and Tate WTP is 14.9 MGD. Capacity of Tate is sometimes reported as 12 MGD. Tate may be expanded to 18 MGD in the future. Water Supply source varies seasonally. Hinkley WTP is typically all SWP water during the summer. Tate is typically all local surface water during the early summer and only 50 percent local surface water by late summer. Hinkley's local supply is Upper Santa Ana. Tate's local supply is Mill Creek. Turbidity of local surface water and bromides in SWP water limit capacity of Tate. A proposed project will improve the processes at Tate to eliminate these restrictions.
Local	6 to12	6 to 14.9	
SWP	13 to 18	13 to 28.9	
Total Surface	25	25	
Groundwater	30 to 35		Limited by production capacity
Total Supply	45 to 50		
Demand			
Peak Day	49.5	71	UWMP projects demand increasing from 45,500 afy in 2005 to 65,300 afy in 2030. Presume proportionate increase in peak day.
SWP Peak day- CFS		**21.7**	
Note: Plant capacities from UWMP, Table 3-1. Seasonal variation information from Chris Diggs, City of Redlands.			

2.4 Yucaipa Valley Water District

Table 2-4 – Yucaipa Valley Water District Peak Day Supply and Demand

(MGD)

	Current	Future	Remarks
Potable System			
Supply (Not including non-potable system)			
Surface Water			Regional Water Filtration Facility will be 12 MGD once construction is complete. It will be run at 4 MGD initially. Supply is SWP delivered by SBVWMD. While Valley District can deliver Mill Creek water, during the summer, Mill Creek water is not available. Oak Glen SWTP is 0.75 MGD. Supplied by local surface water. During summer, local supply is typically 0.15 MGD. No near-term SWTP expansion plans. Yucaipa will maintain well capacity equal to peak day demand.
Local	0.15	0.15	
SWP	4	12	
Total Surface	4.15	12.15	
Groundwater	12	25	
Total Supply	16.15	37.15	
Demand (Not including non-potable system)			
Peak Day	17	25	Current per Jack Nelson. UWMP Table 27 shows potable demand increasing by 47% (from 14,400 af in 2005 to 21,200 af in 2025). Presume that peak day increases similarly.
SWP Peak day-CFS		**18.8**	
Non-potable System (It is assumed that non-potable deliveries could be eliminated during a peak day for potable demands)			
Supply		25.6	
SWP		25.4	
Filter backwash water		0.0	
Recycled Water		8.54	
		34.2	
Note: Data from Jack Nelson, Assistant General Manager, East Valley Water District, August 15, 2007 and September 7, 2007.			

2.5 West Valley Water District

Table 2-5 – West Valley Water District Potable Peak Day Supply and Demand (MGD)

	Current	Future	Remarks
Potable System			
Supply			
Surface Water			Oliver P Roemer Water Filtration Facility treats SWP water and Lytle Creek water. Plant capacity is 14.4 MGD. Future (Phase 3) expansion will add 6.0 MGD. Rialto owns 1.5 MGD of this capacity. Maximum Lytle Creek surface diversions are 3.3 MGD (UWMP). Proposed North Villages WFF (to be located in the Lytle Creek North Planned Development) will be 4.0 MGD (ultimate capacity of 6.0 MGD). Served by Glen Helen Turnout of the San Gabriel Feeder (no local supply) The City of SB, on behalf of Valley District, produces 4.5 MGD of groundwater for West Valley during the summer. This water is boosted into the Baseline Feeder by the Encanto Pump Station.
Local	3.3	3.3	
SWP	5.0	23.1	
Total	8.3	26.4	
Groundwater			
Conveyed by Baseline Feeder	4.5	20.0	
Not conveyed by Baseline Feeder	4.5	20.0	
Total	31.3	60.0	
Total Supply	44.1	106.4	
Demand			
Peak Day	36.2	73.2	
SWP Peak day-CFS		**40.9**	
Non-potable System (It is assumed that non-potable deliveries could be eliminated during a peak day for potable demands)			
Supply			
SWP			
Filter backwash water			
Note: Data provided by Tom Crowley, Assistant General Manager, email dated August 28, 2007.			

2.6 City of Rialto

Table 2-6 – City of Rialto Peak Day Supply and Demand
(MGD)

	Current	Future	Remarks
Supply (Potable only)			
Surface Water			The City of Rialto has 1.5 MGD capacity in the Oliver P Roemer Water Filtration Facility. (The plant, operated by West Valley, treats SWP water and Lytle Creek water. Capacity is 14.4 MGD. Future, Phase 3, expansion will add 6.0 MGD.) Rialto's rights to Lytle Creek Surface Water are limited to 1040.7 gpm or 1.5 MGD. The Baseline Feeder conveys water from Rialto's City Well #4a (3,200 gpm or 4.6 MGD to Rialto) and conveys water produced by the City of San Bernardino for Rialto.
Local	1.5	1.5	
SWP	___	___	
Total	1.5	1.5	
Groundwater			
Conveyed by Baseline Feeder	___	____	
Not conveyed by Baseline Feeder	___	___	
Total	___	___	
Total Supply	___	___	
Demand (Potable only)			
Peak Day[1]	20.8	23.6	Per UWMP, Page 12, 20.8 MGD + Marygold. UWMP projects population increase from 97,878 in 2005 to 111,128 in 2030. Peak day presumed to increase similarly (113.5%). Wheeling agreement with Marygold Mutual will expire in 2008 and Marygold's demand is not included in these figures.
SWP Peak day - cfs	-----	N/A	

[1] Recent estimate of peak demand for Rialto is 26 MGD and future peak demand might be as high as 43.8 MGD. The City of Rialto is currently re-examining their future peak demand.

2.7 Fontana Water Company

Table 2-7 – Fontana Water Company Peak Day Supply and Demand

(MGD)

	Current	Future	Remarks
Supply			
Surface Water			
Local	29	29	
SWP	29	29	
Total	29	29	
Groundwater	72	-	
Total Supply	101	-	
Demand			
Peak Day	71	77	
SWP Peak Day-CFS	54	**54**	

[1] Water System Master Plan (November 2013) Table 5-5

Updated January 2015

3 Peak Day Demand on Valley District Facilities

Section 2 summarized the water demands and supplies as well as peak day water demand of the purveyors. However, purveyors may have groundwater supplies (or other sources) to help meet their peak day demand. After discussion with agencies' staff and review of their UWMP data, Table 3-1 was summarizes the future peak day SWP demand and the delivery point from Valley District facilities. Based on this preliminary examination, Valley District's turnouts are sized to meet SWP Peak Day demand. Additional conveyance capacity is needed in the East Branch Extension of the SWP to meet ultimate demands. The Department of Water Resources, Valley District, and SGPWA are currently planning the construction of the second phase of the East Branch Extension, which will provide this additional capacity.

If we assume all Purveyors peak day demands coincide, the SARC Pipeline has a total future peak day demand of 144 cfs. Delivery to spreading grounds for the City of San Bernardino is 15 cfs that can be interrupted and rescheduled for when peak day demands on the pipeline do not exceed its capacity. SARC has a capacity of 72 cfs.

Table 4-5
Future Peak Day SWP Demand for SBVMWD

		Peak Day SWP Demand (cubic-feet per second)												
		SWP East Branch Extension												
Delivery Point (Turnout)	**Turnout Capacity**	**Foothill Pipeline**	**SARC Pipeline**	**Greenspot Pump Station**	**Morton Canyon Connector**	**Greenspot Pipeline**	**Crafton Hills PS**	**Crafton Hills Reservoir**	**EBX Reach 1 Pipeline**	**EBX Reach 2 Pipeline**	**EBX Reach 3 Pipeline**	**Tate Pump Station**	**Yucaipa Pipeline**	**Devil Canyon - Azusa Pipeline**
City of San Bernardino (Sweetwater (16 in) and Waterman (30 in) Spreading Ground Turnouts)	35 cfs and 135 cfs, respectively	15.0												
East Valley WTP (Northfork Turnout (two 12in), City Creek (20in) Turnout (alternate))	16 cfs and 65 cfs, respectively	12.4	12.4											
Bear Valley - Northfork Irrigation (Northfork Turnout	16 cfs	4.0	4.0											
Mentone Reservoir (SARC – Bear Valley Sandbox Turnout)		6.0	6.0											
City of Redlands - Hinckley WTP (SARC – Bear Valley Sandbox (two parallel 30 in) Turnout)	40 cfs	21.7	21.7											
Bear Valley Highline (Bear Valley Highline Connector and/or Bear Valley Highline – Bouillioun Box Turnout)	20 cfs	4.0	4.0	4.0	4.0	4.0								
Greenspot Grove (Bear Valley #1 Turnout, _ cfs)	6 cfs	1.5	1.5	1.5	1.5	1.5								
Crafton Water Company (Crafton - Unger Turnout) (20 in)	25 cfs	6.0	6.0	6.0	6.0									
City of Redlands - Tate WTP (Tate Treatment Plant Turnout) (24 in) Tate Pump Station	32 cfs	27.9	27.9	27.9	27.9							27.9		
Yucaipa Regional Park (Yucaipa Regional Park Turnout) (8 in)	6 cfs	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5					
Yucaipa Non-potable system, untreated SWP (Yucaipa Valley Water District #1	60	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6				
Yucaipa WTP (Yucaipa Valley Water District #1 Turnout)		18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6				
San Gorgonio Pass Water Agency - Current		16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0			
San Gorgonio Pass Water Agency - Future		16.0					16.0	16.0	16.0	16.0	16.0			
West Valley Water District – Oliver P. Roemer WFF (Lytle Creek Turnout)	32 cfs													40.9
West Valley Water District - North Villages WFF (Glen Helen (30 in)	10 cfs													2.6
Fontana Water Company (Lytle Creek Turnout, 14 cfs)	14 cfs													18.7
Facility Peak Day Demand:		175.2	144.2	100.1	100.1	100.1	76.7	76.7	76.7	76.2		27.7	0.0	67.5
Facility Conveyance Capacity		288.0	72	70	70	80	135	104	104	104				110

Notes:

City of San Bernardino: Per Matt Litchfield, they produce 14 MGD from the affected wells, or 21.7 cfs. Per, "Water Supply Contingency Work Group, June 2007, maximum SWP deliveries are 15 cfs.

East Valley: Future WTP capacity will be 8 MGD or 12.4 cfs.

Bear Valley - North Fork Irrigation: From Water Supply Contingency Work Group, June 2007. Future demand presumed to equal present demand.

Mentone Reservoir: From Water Supply Contingency Work Group, June 2007. Future demand presumed to equal present demand.

City of Redlands - Hinckley WTP: Per UWMP.

Crafton Water Company @ Unger Lane: From Water Supply Contingency Work Group, June 2007. Future demand presumed to equal present demand.

City of Redlands (Tate WTP): Per UWMP. Most days, plant receives all water from Mills Creek

Yucaipa Regional Park: From Water Supply Contingency Work Group, June 2007.

Yucaipa Non-potable: From Jack Nelson**.**

Yucaipa VWD - WTP: 12 MGD per Jack Nelson.

San Gorgonio Pass Water Agency: Agency has capacity rights to 16 cfs in the East Branch Extension Phase 1. EBX Phase II will add 16 cfs capacity. EBX Phase II includes new conveyance facilities from the Foothill Pipeline to Crafton Hills Pump Station and expansion of Crafton Hills Pump Station (NOP, DWR East Branch Extension Phase II Project EIR). San Gorgonio envisions acquisition of additional Table A Amount. Conveyance for that additional Table A Amount is not included.

West Valley Water District - Roemer WFF (not including deliveries for Rialto): Per Tom Crowley, maximum surface water demand is 26.4MGD including 3.3 MGD local surface water. This evaluation assumes no local surface water available and 4 MGD delivered to proposed North Villages WFF.

West Valley Water District - North Villages WFF: 4 MGD per Tom Crowley

West Valley Water District - Irrigation: Per UWMP, District provides irrigation water to Rancho Verde Golf Course. Water provided is a blend of local surface water, imported surface water and filter backwash water. Total consumption was 1,357 af in FY 2002/03. Assume that Peak Month is 13% of annual demand, Peak Day is 1/30 of Peak Month and filter backwash water amount is negligible.

Fontana Water Company: Fontana Water Company future peak day demand was developed without confirmation of calculations from Fontana.[1] Sandhill WTP will be 29 MGD per 2005 UWMP. Some of this water may be purchased from Metropolitan and conveyed through Metropolitan facilities.

City of Rialto - **Roemer WFF:** From 2005 UWMP.

West Valley Water District - groundwater deliveries: Data from Tom Crowley, West Valley

City of Rialto - groundwater deliveries:

Conveyance Capacities: Tate Pump Station an Lytle Pipeline from SAIC. SWP facilities from SWP Data Handbook, 2003. Baseline Feeder capacity based on 48-inch Diameter & 5 fps.

Turnout capacities: From Valley District

Baseline Feeder Capacity: Presumed to by 64 cfs based on 48-inch diameter and 5 feet per second velocity.

[1] Updated January 2015

4 References

Conversations with:

Sam Fuller, San Bernardino Valley MWD, July 2007
Ron Buchwald, East Valley, August 2007
Tom Crowley, West Valley, August 2007. Email on August 28.
Chris Diggs, Redlands, August 2007
Jack Nelson, Yucaipa Valley, August 2007
Matt Litchfield, August 2007

2005 Urban Water Management Plans:

East Valley Water District
Fontana Water Company
City of Redlands
West Valley Water District
Yucaipa Valley Water District

Fontana Water Company Water System Master Plan, November 2013[2]

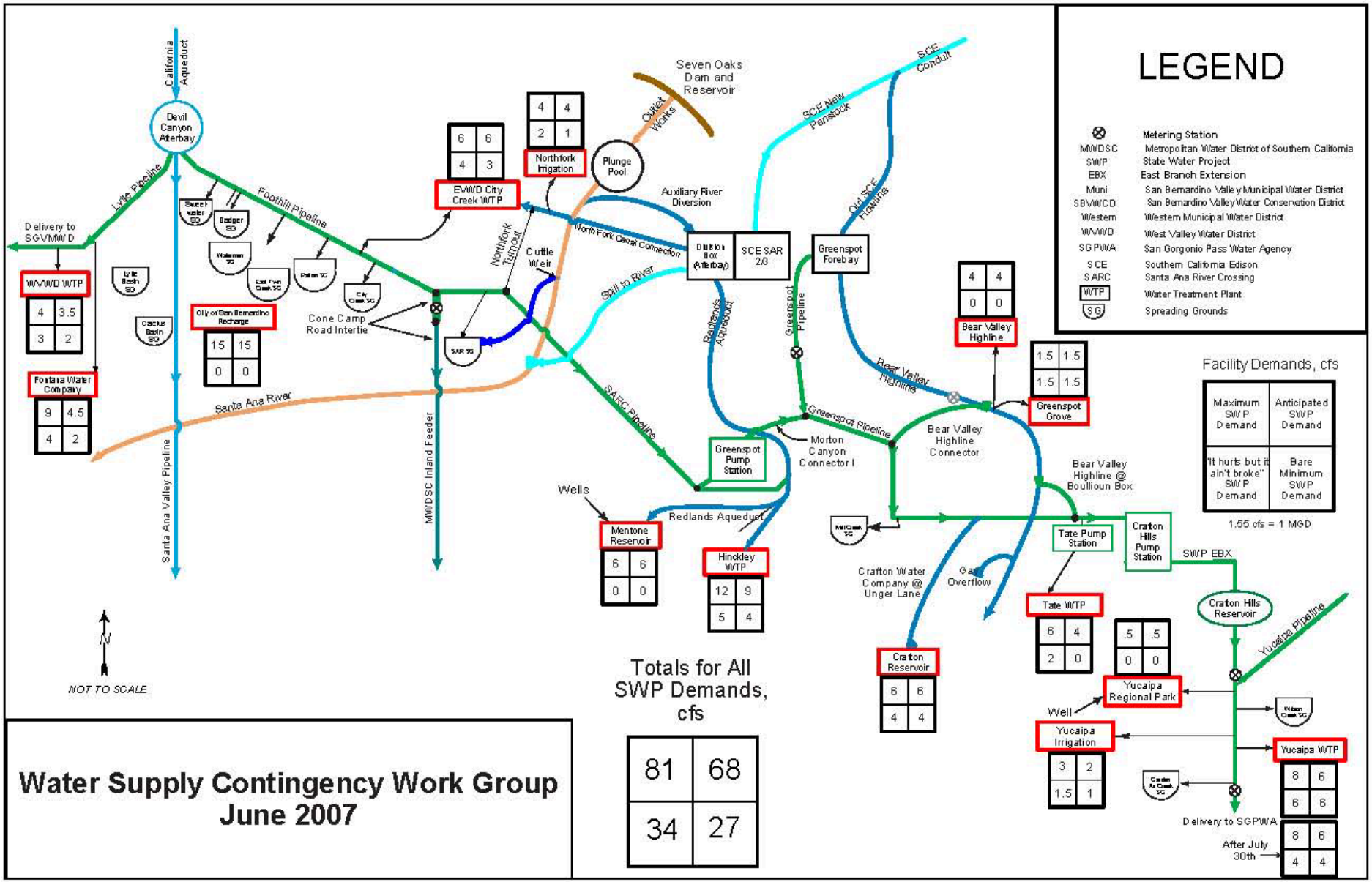
State of California. 2003. Data Handbook, State Water Project.

State of California. 2007. Notice of Preparation, DWR East Branch Extension Phase II Project EIR.

Water Supply Contingency Work Group. July 2007 sketch

[2] Updated January 2015. This document used only to update Table 2-7.

Appendix A - Water Supply Contingency Work Group July 2007 Sketch


LEGEND
Metering Station
MWDSC Metropolitan Water District of Southern California
SWP State Water Project
EBX East Branch Extension
Muni San Bernardino Valley Municipal Water District
SBVWCD San Bernardino Valley Water Conservation District
Western Western Municipal Water District
WVWD West Valley Water District
SGPWA San Gorgonio Pass Water Agency
SCE Southern California Edison
SARC Santa Ana River Crossing
WTP Water Treatment Plant
SG Spreading Grounds
California Aqueduct
Devil Canyon Afterbay
Lytle Pipeline
Foothill Pipeline
Delivery to SGVMWD
WVWD WTP
Fontana Water Company
Santa Ana River
Santa Ana Valley Pipeline
Lytle Basin SG
Cactus Basin SG
Sweetwater SG
Badger SG
Waterman SG
East Twin Creek SG
Patton SG
City Creek SG
City of San Bernardino Recharge
Cone Camp Road Intertie
SARC SG
EVWD City Creek WTP
Northfork Turnout
Cuttle Weir
Northfork Irrigation
Seven Oaks Dam and Reservoir
Outlet Works
Plunge Pool
Auxiliary River Diversion
North Fork Canal Connection
Spill to River
MWDSC Inland Feeder
Division Box (Afterbay)
SCE SAR 2/3
Redlands Aqueduct
SARC Pipeline
Greenspot Pump Station
Wells
Mentone Reservoir
Redlands Aqueduct
Hinckley WTP
SCE New Penstock
SCE Conduit
Old SCE Flowline
Greenspot Forebay
Greenspot Pipeline
Bear Valley Highline
Greenspot Grove
Morton Canyon Connector I
Bear Valley Highline Connector
Bear Valley Highline @ Boulloun Box
Mill Creek SG
Crafton Water Company @ Unger Lane
Gage Overflow
Crafton Reservoir
Tate Pump Station
Crafton Hills Pump Station
SWP EBX
Tate WTP
Crafton Hills Reservoir
Yucaipa Pipeline
Yucaipa Regional Park
Well
Yucaipa Irrigation
Wilson Creek SG
Yucaipa WTP
Garden Air Creek SG
Delivery to SGPWA
After July 30th
Facility Demands, cfs
Maximum SWP Demand
Anticipated SWP Demand
"It hurts but it ain't broke" SWP Demand
Bare Minimum SWP Demand
1.55 cfs = 1 MGD
N
NOT TO SCALE
Totals for All SWP Demands, cfs
81 68
34 27
Water Supply Contingency Work Group
June 2007

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Appendix J: Project List

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USARW Region IRWMP Project Prioritization			
Note: Project prioritization to be made available on the IRWM Plan webpage.			
Goals	**Project**	**Agency/ Project Sponsor**	**Projected Costs**
IMPROVE WATER SUPPLY RELIABILITY	**IMPROVE WATER SUPPLY RELIABILITY**		
	City of San Bernardino Water Recycling	San Bernardino Municipal Water Department	**67,800,000**
	Big Bear Area Regional Wastewater Agency Plant	Big Bear Area Regional Wastewater Agency	**70,000,000**
	City of Beaumont WWTP	City of Beaumont	
	City of Redlands WWTP	City of Redlands	
	Henry N. Wochholz WWTP	Yucaipa Valley Water District	
	IEUA Regional Treatment Plant 4	Inland Empire Utilities Agency	
	Central Feeder Pipeline	San Bernardino Valley Municipal Water District	**$117,000,000**
	West End Pump Station	San Bernardino Valley Municipal Water District	**$10,000,000**
	Riverside-Corona Feeder	West Valley Water District	**$176,000,000**
	Erwin Lake Fire Flow	Big Bear Lake Department of Water and Power	
	Yucaipa Connector	San Bernardino Valley Municipal Water District	**$4,500,000**
	Medical Center No. 2 Reservoir	San Bernardino Municipal Water Department	**$18,100,000**
	No Updates		
	Seven Oaks Dam Borrow Pit Groundwater Recharge and Habitat Restoration Project	San Bernardino Valley Water Conservation District	**$7,700,000**
	Installation of Groundwater Monitoring Wells in Santa Ana River Forebay	San Bernardino Valley Water Conservation District	**$640,000**
	Rialto-Colton Basin Groundwater Recharge Study	San Bernardino Valley Municipal Water District	**$280,000**
	Alluvial Fan Development Guideline	Water Resources Institute - California State University San Bernadino	
	Pellesier Ranch Recharge and Water Treatment Plant	City of Riverside Public Utilities	**$17,700,000**
	Groundwater Reclamation Interagency Project (GRIP)	City of Redlands	**$9,100,000**
	Bunker Hill Basin Water Supply Reliability	West Valley Water District	**$13,000,000**
	Santa Ana River Construction Area	San Bernardino Valley Municipal Water District	**$122,000,000**
	Riverside North Recharge Basin	City of Riverside Public Utilities	**$13,500,000**

* Include:
Completion of pre-feasibility study, environmental documentation, and expected implementation date

Goals	Project	Agency/ Project Sponsor	Projected Costs
	Active Recharge in the SAR Tributaries	San Bernardino Valley Municipal Water District	**Uknown**
	Recycled Water System Expansion	City of Redlands	**$4,858,700**
	Calimesa Recycled Water Conveyance Project	Yucaipa Valley Water District	
	Beaumont Avenue Recharge Facility	San Gorgonio Pass Water Agency	**$8,000,000**
	Stormwater Capture and Recharge	City of Riverside Public Utilities	**$3,000,000**
FLOOD MANAGEMENT	**BALANCE FLOOD MANAGEMENT AND INCREASE STORMWATER RECHARGE**		
	Cactus Basins #4 and #5	San Bernardino County Parks Department	**$21,300,000**
	Cactus Basins #3	San Bernardino County Parks Department	**$21,300,000**
	Randall Basin	San Bernardino County Parks Department	**$1,460,000**
	Sand/Warm Confluence	San Bernardino County Parks Department	
	Wilson III Basin Project and Wilson Basin/Spreading Grounds	City of Yucaipa	**$8,900,000**
	Opal Recharge and Flood Control Basin	City of Redlands	**$26,000,000**
	Downtown Storm Drain Project	City of Redlands	**$5,200,000**
IMPROVE WATER QUALITY	**IMPROVE WATER QUALITY**		
	Desalter and Brine Disposal	Yucaipa Valley Water District	**$9,600,000**
	City of Beaumont Desalter	City of B.	
	Sari Improvement Project		
	Big Bear Lake Management Plan	Multiple Agencies	**$260,000**
	RIX Facility Basin Levee Project	San Bernardino Municipal Water Department	**$3,300,000**
	Security Fencing of Groundwater Recharge Facilities	San Bernardino Valley Water Conservation District	**$1,640,000**

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Goals	Project	Agency/ Project Sponsor	Projected Costs
IMPROVE HABITAT AND OPEN SPACE	**IMPROVE HABITAT AND OPEN SPACE**		
	Upper Santa Ana Watershed Alluvial Sage Scrub Habitat Restoration Mitigation Banking Construction Program	San Bernardino Valley Water Conservation District	
	Wash Habitat Conservation Plan	San Bernardino Valley Water Conservation District	**$800,000**
	Warm Creek Restoration Project	Inland Empire Resource Conservancy District	**$63,000**
	Removal of Invasive Plant	Inland Empire Resource Conservancy District	**$300,000**
	San Timoteo Canyon State Park Habitat Conservation	R.L.C.	**$5,500,000**
	Lytle Creek Watershed Assessment and Restoration	Water Resources Institute - California State University San Bernadino	**$260,000**
	Combined SBKR and Water Recharge Enhancement - Wash Plan Implementation	San Bernardino Valley Water Conservation District	**$1,371,101**
	Stanfield Marsh		
	Bogart Park Wetlands		
	BCV Forest Land Reserved		
	I.E. Sustainable Watershed Project		
	LIDS for Kids- Low Impact Development	Inland Empire Resource Conservancy District	**$237,000**
	SAR Trail - Phase III	San Bernardino County Parks Department	
	SAR Trail - Phase IV	San Bernardino County Parks Department	

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