

**AGENDA
IRVINE RANCH WATER DISTRICT
BOARD OF DIRECTORS
REGULAR MEETING**

June 13, 2016

PLEDGE OF ALLEGIANCE

CALL TO ORDER

5:00 p.m., Board Room, District Office
15600 Sand Canyon Avenue, Irvine, California

ROLL CALL

Directors LaMar, Reinhart, Swan, Withers and President Matheis

Directors Matheis and Reinhart will participate telephonically.

This agenda has been posted at Hotel Nikko San Francisco, 222 Mason St., San Francisco, CA (Matheis) and Oasis Las Vegas RV Resort, 2711 W Windmill Lane, Las Vegas, NV (Reinhart).

NOTICE

If you wish to address the Board on any item, including Consent Calendar items, please file your name with the Secretary. Forms are provided on the lobby table. Remarks are limited to five minutes per speaker on each subject. Consent Calendar items will be acted upon by one motion, without discussion, unless a request is made for specific items to be removed from the Calendar for separate action.

COMMUNICATIONS TO THE BOARD

1. A. Written:

B. Oral:

2. ITEMS RECEIVED TOO LATE TO BE AGENDIZED

Recommendation: Determine the need to discuss and/or take immediate action on item(s).

PRESENTATION

3. SCIENCE FAIR WINNERS

Each year, IRWD presents awards to local students for their water-related projects entered in the Irvine Unified School District Science Fair.

PUBLIC HEARING

4. 2015 URBAN WATER MANAGEMENT PLAN

Recommendation:

- a. Open the Hearing.
- b. Inquire of the Secretary how the hearing was noticed.
- c. Receive and file the affidavit of posting and proof of publication.
- d. Request legal counsel to describe the nature of the proceedings.
- e. Inquire of the Secretary if there have been any written communications.
- f. Hear any person who wishes to speak relative to IRWD's 2015 Urban Water Management Plan.
- g. Board comments/discussion.
- h. Close the Hearing.
- i. That the Board rescind Resolution No. 2011-19 and adopt a resolution accepting the IRWD 2015 Urban Water Management Plan.

Reso. No. 2016-

CONSENT CALENDAR

Resolution No. 2016-9

Items 5-11

5. RATIFY/APPROVE BOARD OF DIRECTORS' ATTENDANCE AT MEETINGS AND EVENTS

Recommendation: That the Board ratify/approve the meetings and events for Steven LaMar, Mary Aileen Matheis, Peer Swan, Douglas Reinhart, and John Withers as described.

6. MINUTES OF REGULAR BOARD MEETINGS

Recommendation: That the minutes of the May 23, 2016 and the June 6, 2016 Regular Board meetings be approved as presented.

7. FISCAL YEAR 2016-17 GENERAL COUNSEL SERVICES FOR BOWIE, ARNESON, WILES & GIANNONE

Recommendation: That the Board approve and authorize the General Manager to execute the Engagement Agreement with Bowie, Arneson, Wiles & Giannone effective July 1, 2016 for general counsel services in the amount not to exceed \$400,000.

CONSENT CALENDAR - Continued

Items 5-11

8. APPROVING QUITCLAIM OF ASSETS, LIQUIDATION AND DISSOLUTION OF IRWD WATER SERVICE COMPANY II LLC

Recommendation: That the Board adopt a resolution approving quitclaim of assets, liquidation and dissolution of Irvine Ranch Water District Water Service Company II LLC.

Reso. No. 2016-

9. FY 2016-17 OPERATING BUDGET VENDOR EXPENDITURE COMMITMENTS GREATER THAN \$100,000

Recommendation: That the Board approve the list of vendor commitments greater than \$100,000 based on approved FY 2016-17 operating budget expenditures.

10. 2016 LEGISLATIVE UPDATE

Recommendation: That the Board adopt a "SUPPORT IF AMENDED" position on the Water Foundation's Tiered Water Rates Proposal and authorize staff to seek amendments to the proposal so that it complies with the California Constitution and reflects the tiered rate proposal that IRWD put forward last year for discussion.

11. RANCHO PARKWAY ZONE C RECYCLED WATER PIPELINE FINAL ACCEPTANCE

Recommendation: That the Board accept construction of the Rancho Parkway Zone C Recycled Water Pipeline, project 6215, authorize the filing of a Notice of Completion, and authorize the payment of the retention 35 days after the date of recording the Notice of Completion.

ACTION CALENDAR

12. DECLARATION OF WATER SHORTAGE LEVEL ONE

Recommendation: That the Board adopt a resolution rescinding Resolution No. 2015-18 and declaring Water Shortage Level One which represents a low-level shortage condition.

Reso. No. 2016-

ACTION CALENDAR - Continued

13. INFORMATION SERVICES PROFESSIONAL SERVICES SUPPORT
CONTRACT RENEWALS

Recommendation: That the Board authorize the General Manager to execute Professional Services Agreements for the period July 1, 2016 to June 30, 2017 with Infosys Ltd. in the amount of \$375,000 for managed support services and one-time projects; LCS Technologies in the amount of \$100,000 for on-call database administration services; and Outsource Technical in the amount of \$225,000 for on-call programming, analysis, project management, and networking services.

14. PROPOSED 2016 GENERAL OBLIGATION BONDS AND
CERTIFICATES OF PARTICIPATION DEBT ISSUANCE

Recommendation: That the Board approve the issuance of General Obligation Bonds in an amount not to exceed \$130 million in either a fixed or variable mode to be determined prior to issuance, and approve the issuance of Certificates of Participation in an amount not to exceed \$75 million, in a fixed or variable mode to be determined prior to issuance, and approve the retention of Bank of America Merrill Lynch and Morgan Stanley as underwriters for the General Obligation Bond issue, and approve the retention of Goldman Sachs as underwriter for the Certificates of Participation (COPs) issue (to include any potential refunding of the District's 2010 COPs issue), retain Orrick, Herrington & Sutcliffe and Bowie, Arneson, Wiles & Giannone as co-bond counsel; and adopt a resolution declaring intention to issue consolidated bonds of (Consolidated Series 2016).

Reso. No. 2016-

OTHER BUSINESS

Pursuant to Government Code Section 54954.2, members of the Board of Directors or staff may ask questions for clarification, make brief announcements, make brief reports on his/her own activities. The Board or a Board member may provide a reference to staff or other resources for factual information, request staff to report back at a subsequent meeting concerning any matter, or direct staff to place a matter of business on a future agenda. Such matters may be brought up under the General Manager's Report or Directors' Comments.

OTHER BUSINESS - Continued

15. A. General Manager's Report

B. Directors' Comments

C. CLOSED SESSION Conference with Labor Negotiators - Government Code Section 54957.6:

Agency Designated Representatives: Paul Cook and Jenny Roney

Employee Group: Managers, Supervisors and Confidential Employees, and

CLOSED SESSION Conference with Legal Counsel relative to anticipated litigation-Government Code Section 54956.9(d)(2) – significant exposure to litigation (one potential case), and Government Code Section 54956.9(d)(4) initiation of litigation (one potential case).

D. Open Session

E. Adjourn

Availability of agenda materials: Agenda exhibits and other writings that are disclosable public records distributed to all or a majority of the members of the Irvine Ranch Water District Board of Directors in connection with a matter subject to discussion or consideration at an open meeting of the Board of Directors are available for public inspection in the District's office, 15600 Sand Canyon Avenue, Irvine, California ("District Office"). If such writings are distributed to members of the Board less than 72 hours prior to the meeting, they will be available from the District Secretary of the District Office at the same time as they are distributed to Board Members, except that if such writings are distributed one hour prior to, or during, the meeting, they will be available at the entrance to the Board of Directors Room of the District Office. The Irvine Ranch Water District Board Room is wheelchair accessible. If you require any special disability-related accommodations (e.g., access to an amplified sound system, etc.), please contact the District Secretary at (949) 453-5300 during business hours at least seventy-two (72) hours prior to the scheduled meeting. This agenda can be obtained in alternative format upon written request to the District Secretary at least seventy-two (72) hours prior to the scheduled meeting.

June 13, 2016

Prepared by: J. Corey/K. Welch

Submitted by: F. Sanchez/P. Weghorst

Approved by: Paul Cook 

PUBLIC HEARING

2015 URBAN WATER MANAGEMENT PLAN

SUMMARY:

A draft of the District's 2015 Urban Water Management Plan (UWMP) has been prepared in accordance with the Urban Water Management Planning Act (Act) of 1983, as amended. Staff recommends that the Board conduct a public hearing to allow the public an opportunity to comment on the District's 2015 UWMP and adopt the Plan as appropriate.

BACKGROUND:

The Act requires urban water suppliers, which provide water for municipal purposes to more than 3,000 customers or which supply more than 3,000 acre-feet annually, to prepare and adopt a UWMP. The adopted UWMP must be submitted to the Department of Water Resources (DWR) at least once every five years. The deadline for submission of the 2015 UWMP to DWR is July 1, 2016.

The purpose of the UWMP is to ensure and demonstrate to the State that there are adequate water supplies to meet existing and future water demands under various hydrologic scenarios. The Act requires that water suppliers describe and evaluate water supply reliability in five-year increments for a 20-year period, under normal, single-dry and multiple-dry years. Urban water suppliers must also describe water shortage contingency and catastrophic planning efforts. In accordance with the Act, IRWD last updated its UWMP in 2010.

Staff has prepared the District's 2015 UWMP incorporating all of the required elements of the Act. The document includes the most current planning projections of demands and supplies through year 2035. The draft IRWD 2015 UWMP is attached as Exhibit "A".

Changes to UWMP Requirements:

Changes in the Act have occurred since 2010 that have modified requirements or that necessitate additional compliance by urban water suppliers in the 2015 UWMP. The modifications and additional requirements are provided below. Where appropriate, information on IRWD's 2015 UWMP response to these requirements is also included:

- *Submittal Date:* The 2015 UWMP requires each urban water supplier to submit its 2015 plan to the Department of Water Resources (DWR) by July 1, 2016.
- *Electronic Submittal:* The 2015 UWMP requires each urban water supplier to electronically submit the Plan and any amendments to its Plan to DWR.
- *Standardized Forms:* The 2015 UWMP and any amendments to the Plan are required to include the DWR-specified standardized forms, tables or displays.

- *Water Loss:* Each supplier is required to quantify and report on distribution system water losses calculated using the AWWA's standard methodology and software. IRWD worked with consultants at Water Systems Optimization to complete the water loss report, and the results are provided in Chapter 4 of the Plan.
- *Defining Water Features:* Urban water suppliers are required to analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls and fountains, separately from swimming pools and spas in the Water Shortage Planning section. This requirement is addressed in the District's 2015 UWMP as part of the response measures of the Water Shortage Contingency Plan.
- *20 x 2020 Compliance:* Urban suppliers are required to report compliance with the Water Conservation Act of 2009, which mandates a 20% reduction in total gallons per capita per day use by 2020 from a defined baseline. Suppliers are also required to report on compliance with their interim 2015 target. IRWD's baseline use is 214 gallons per capita per day (gpcd), with a 2015 interim target of 192 gpcd and a final 2020 target of 171 gpcd. IRWD's 2015 reported use in the UWMP is 129 gpcd, which not only exceeds the requirement of the 2015 interim target, but is also well below the final 2020 target.
- *Demand Management Measures:* Urban water suppliers are required to provide narratives describing water demand management measures. Retail suppliers are required to address the nature and extent of each of their water demand management measures implemented over the past five years. Each supplier must also describe the water demand management measures that it plans to implement to achieve its water use targets. Alternatively, suppliers may submit copies of their reports demonstrating compliance with the requirements of the California Urban Water Conservation Council. This alternative approach is used in the District's 2015 UWMP.
- *Energy Intensity Reporting:* Suppliers are encouraged to voluntarily report energy intensity. In the District's 2015 UWMP, staff has included the requested information regarding the energy intensity of its water sources based on the District's Embedded Energy Study.

A public hearing is required prior to the Board of Directors adoption of the 2015 UWMP that will allow members of the public to have an opportunity to comment on the draft plan. Staff recommends that the Board hold a public hearing and adopt the 2015 Urban Water Management Plan.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

This 2015 UWMP is exempt from the California Environmental Quality Act (CEQA) as authorized under the California Code of Regulations, Title 14, Chapter 3, Section 15262 which provides exemption for planning studies.

COMMITTEE STATUS:

This item was reviewed by the Water Resources Policy and Communications Committee on June 6, 2016.

RECOMMENDATION:

THAT THE BOARD HOLD A PUBLIC HEARING TO ALLOW THE PUBLIC AN OPPORTUNITY TO COMMENT ON THE DISTRICT'S 2015 URBAN WATER MANAGEMENT PLAN AND ADOPT THE PLAN.

LIST OF EXHIBITS:

Exhibit "A" – Final Draft IRWD 2015 Urban Water Management Plan

EXHIBIT "A"

IRVINE RANCH WATER DISTRICT

2015 Urban Water Management Plan



JUNE 2016

Final Draft



Irvine Ranch Water District, 15600 Sand Canyon Ave., Irvine, California 92618

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1. INTRODUCTION AND OVERVIEW

1.1. Urban Water Management Planning Act

This Urban Water Management Plan (UWMP, Plan) of the Irvine Ranch Water District has been prepared in response to the Urban Water Management Planning Act (Water Code), Water Code Sections 10610 through 10656, which were added by Statute 1983, Chapter 1009, and became effective on January 1, 1984, including any and all changes to the California Water Code since the adoption of the 2010 UWMP. The Act requires that "every urban water supplier providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually to prepare and adopt an urban water management plan."

The Urban Water Management Planning Act requires that IRWD file an update to its 2010 UWMP. IRWD's 2015 UWMP was prepared in accordance with the requirement that urban water purveyors submit a plan to the Department of Water Resources (DWR), addressing water supply and demands, conservation measures, and water recycling among other things. IRWD prepared previous plans in 1985, 1990, 1995, 2000, 2005 and 2010. Several legislative amendments have been made to the Act since the last submission in 2010 and this UWMP update incorporates all of the new requirements.

IRWD prepared the 2015 update in coordination with the other agencies as indicated. IRWD utilized the DWR "Guidebook to Assist Urban Water Suppliers to Prepare a 2015 Urban Water Management Plan" in the preparation of its UWMP.

1.2. Irvine Ranch Water District Background

Irvine Ranch Water District (IRWD, District) is a multi-service agency responsible for providing domestic water service, sewage collection and treatment, water recycling, and urban runoff natural treatment in Central Orange County, California. IRWD provides water service to approximately 380,000 residents. IRWD encompasses approximately 181-square miles extending from the Pacific Coast to the foothills of the Santa Ana Mountains, covering elevations ranging from sea level to 1,700 feet. IRWD services the City of Irvine and portions of Costa Mesa, Lake Forest, Newport Beach, Orange, Tustin, Santa Ana and unincorporated areas of Orange County.

Established in 1961 as an independent special district organized under the California Water District Code, IRWD is governed by a five-member, publicly elected Board of Directors responsible for the District's policies and decision making. Day-to-day operations are supervised by the General Manager and District staff.

IRWD's mission is to provide high quality water and sewer services in an efficient, cost effective, and environmentally sensitive manner which produces a high level of customer satisfaction.

1.3. Water Resources Planning

In 1972, IRWD developed a master plan for the domestic (potable) and irrigation (non-potable) water systems. As IRWD's service area developed, the original master plans were updated over the years, and in 1991, IRWD combined the potable and non-potable master plans to make up the Water Resources Master Plan (WRMP) to evaluate District-wide resources in their entirety. The WRMP, IRWD's principal planning document, is a comprehensive document compiling data and analysis that IRWD considers necessary for its planning needs. The WRMP provides the framework for future IRWD water resource planning and decision making from supply/demand, operations and financial perspectives.

Another objective of the WRMP is to assist IRWD in compliance with enacted legislation (SB221 and SB610), which requires water retailers to demonstrate whether their water supplies are sufficient for certain proposed subdivisions and large development projects subject to the California Environmental Quality Act (CEQA). Due to significant land use changes with IRWD's area over the years, it was important that IRWD ensure its existing and planned supplies were sufficient to meet revised demands. The WRMP assists IRWD in compliance with the Water Conservation Act of 2009 and also takes into account the goals and objectives of the UWMP.

See Chapters 3, 4, 6, 7 and 8 of this UWMP for the detailed information on IRWD's service area, water systems, supplies and demands, and water supply reliability in accordance with the Urban Water Planning Act.

2. PLAN PREPARATION

2.1. Basis for Preparing a Plan

Law

10617 “Urban water supplier” means a water supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers.

10620 (b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

10621(a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero, except as provided in subdivision (d).

In accordance with the Water Code, IRWD is an urban water supplier with 3,000 or more service connections and is required to prepare an UWMP every five years. The Urban Water Management Planning Act requires that IRWD file an update to its 2010 UWMP. IRWD’s 2015 UWMP was prepared in accordance with the requirement that urban water purveyors submit a plan to the Department of Water Resources, addressing water supply and demands, conservation measures, and water recycling among other things. Several legislative amendments have been made to the Act since the last submission of 2010 and this UWMP update incorporates all of the new requirements.

2.2. Public Water Systems

IRWD is considered an urban water supplier for purposes of submitting an UWMP. IRWD includes only one public water system regulated by the State Water Resources Control Board, Division of Drinking Water. DWR Table 2-1 below provides DWR’s required information regarding public water systems with respect to IRWD.

DWR Table 2-1 Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
3010092	Irvine Ranch Water District	111,511	90,403
TOTAL		111,511	90,403

2.3. Regional Planning and Regional Alliance

IRWD is the largest member agency of the Municipal Water District of Orange County (MWDOC) in terms of service area and overall water use. MWDOC is a wholesale importer of water from the Metropolitan Water District of Southern California (MWD). MWDOC serves all of Orange County except for the cities of Anaheim, Fullerton and Santa Ana. IRWD coordinated the update of this plan in participation with MWDOC. References are made in a more general aspect to the regional Urban Water Management Plans prepared by both the MWD and MWDOC.

IRWD, as an urban water supplier, developed its 2015 UWMP that reports solely on its own service area. This individual UWMP addresses all requirements of the California Water Code. IRWD has notified and coordinated with MWDOC on the preparation of this UWMP. IRWD's Board of Directors, its governing body, must adopt IRWD's UWMP.

As discussed further in Chapter 5, Baselines and Targets, as a retail agency IRWD has the option of complying individually or participating in a Regional Alliance. IRWD chose to participate in a Regional Alliance with the MWDOC. The Regional Alliance calculation is based on the first option allowed, and provides maximum flexibility. Each individual agency calculated its own individual target, as if it were complying individually. IRWD calculated and reported on its baseline per capita water use, 2020 water use target and interim target in order to comply with the Water Conservation Act of 2009 as part of its individual UWMP. DWR Table 2-2 contains IRWD's required information related to Plan Identification.

DWR Table 2-2 Plan Identification

Select Only One	Type of Plan	Name of RUWMP or Regional Alliance <i>if applicable</i> <i>drop down list</i>
☒	Individual UWMP	
☐	Water Supplier is also a member of a RUWMP	
☒	Water Supplier is also a member of a Regional Alliance	Orange County 20x2020 Regional Alliance

2.4. Standardized Tables, Year and Units of Measure Used

Law

10644(a)(2) The plan, or amendments to the plan, submitted to the department...shall include standardized forms, tables or displays specified by the department.

IRWD prepared the 2015 update to the UWMP in coordination with other agencies as indicated. IRWD utilized the standardized forms provided by DWR in its 2015 update to the UWMP. The Act provides for water suppliers to report on a fiscal year or calendar year basis. In the 2015

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update to the UWMP, IRWD has reported its data on a fiscal year basis with each fiscal year starting July 1. For example, for reporting water use and supply data for 2015, IRWD uses its fiscal year 2014-2015. DWR Table 2-3 includes the DWR required information related to agency identification, type of agency, type of reporting year, and the units of measure.

DWR Table 2-3 Agency Identification	
Type of Agency (select one or both)	
☐	Agency is a wholesaler
☒	Agency is a retailer
Fiscal or Calendar Year (select one)	
☐	UWMP Tables Are in Calendar Years
☒	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
7/1	
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF

2.5. Coordination with Wholesale Agencies

Law

10631 (j) An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projects from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the whole agency to the urban water supply over the same five-year increments, and during various water-year types in accordance with subdivision(c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan.

As stated, IRWD is the largest retail member agency of the MWDOC in terms of service area and overall water use. MWDOC is a wholesale importer of water from MWD. MWDOC serves all of Orange County except for the cities of Anaheim, Fullerton and Santa Ana. IRWD coordinated the update of this plan with MWDOC. References are made in a more general aspect to the Regional UWMPs prepared by both MWD and MWDOC. DWR Table 2-4 identifies IRWD's wholesale water supplier.

DWR Table 2-4 Water Supplier Information Exchange

The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.
Wholesale Water Supplier Name <i>(Add additional rows as needed)</i>
Municipal Water District of Orange County

2.6. Coordination with Other Agencies and the Community

Law

10620(d)(2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

10621(b) Every urban water supplier required to prepare a plan pursuant to the part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

10642 Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.

IRWD serves all or portions of seven cities, plus part of unincorporated Orange County. Land use within IRWD's service area has been changing steadily from an agricultural community to an urban development area. IRWD must coordinate closely with various cities within its service area on the respective cities' general planning to determine IRWD's full buildout demands especially for the current undeveloped areas. Land use and demographic changes that have affected IRWD's water supply and system planning are described more fully in Chapter 3.

On December 23, 2015, IRWD notified all seven of the cities within IRWD's service area and the County of Orange that IRWD would be reviewing the UWMP and considering amendments or changes to the plan for the 2015 update. The notification provided the opportunity for the cities and County and Orange to submit comments regarding IRWD's UWMP during the update process. IRWD did not receive any comments from the cities or the County during the preparation of its UWMP 2015 update. IRWD's specific notifications to the cities and the County of Orange within IRWD's service area of IRWD's UWMP preparation and coordination are included in Appendix C.

3. SYSTEM DESCRIPTION

Law

10631(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

3.1. General Description, Service Area Boundary

Irvine Ranch Water District, a California Water District, was formed in 1961 and is located in the south central portion of Orange County (see Figure 1). IRWD provides potable and non-potable water supply, wastewater collection, treatment and disposal, and wastewater recycling. IRWD overlies much of the old Irvine Ranch property and includes all of the City of Irvine and portions of the surrounding jurisdictional agencies such as the cities of Tustin, Santa Ana, Orange, Costa Mesa, Lake Forest, Newport Beach, and unincorporated areas of the County of Orange. Currently, IRWD encompasses a 181-square mile service area with an estimated population of 381,470.

Figure 1 – IRWD service within Orange County



Figure 2 – IRWD Service Area

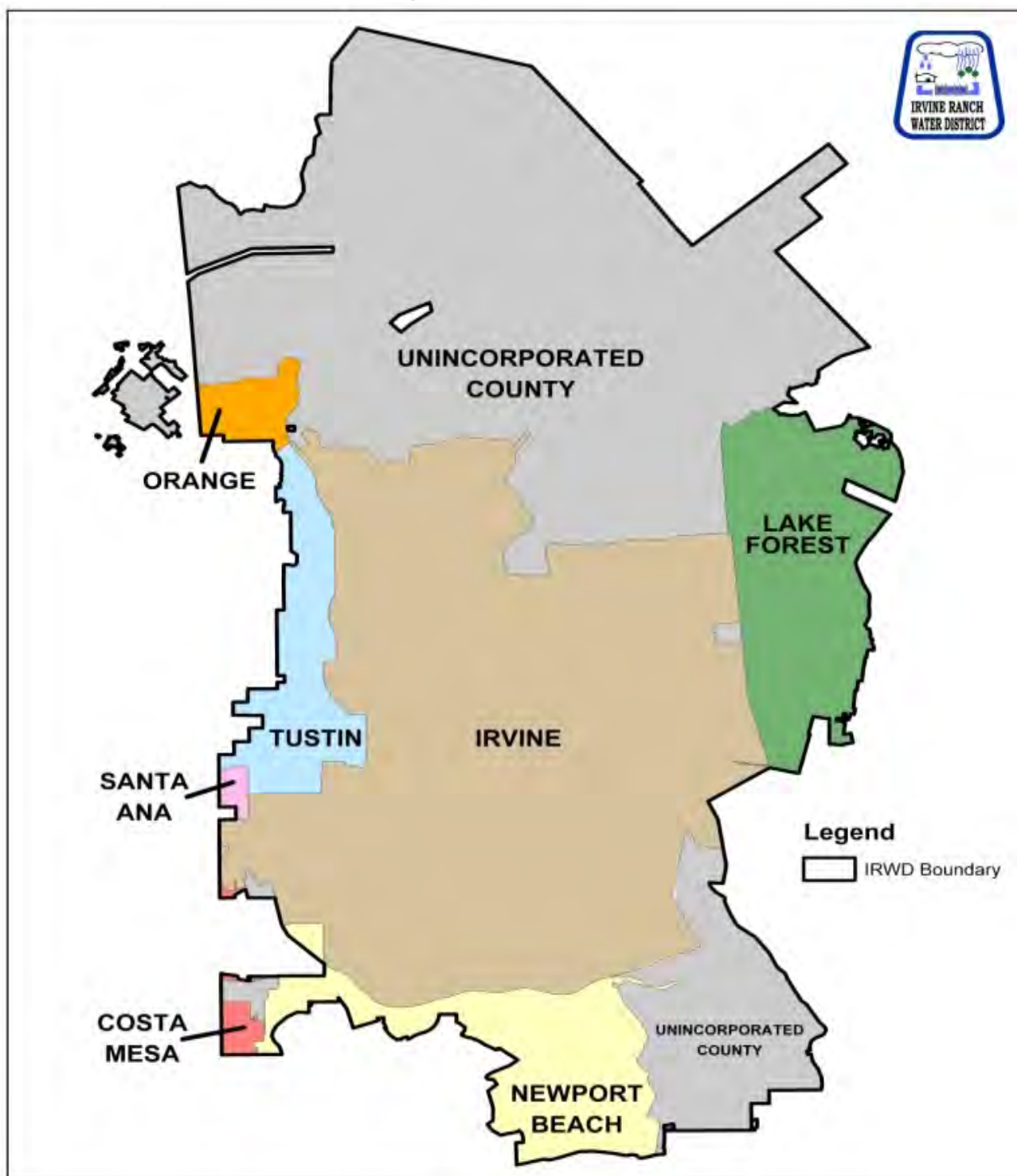


Figure 2 above depicts IRWD's service area boundary. In 1997, IRWD acquired neighboring Santa Ana Heights Mutual Water Company with approximately 2,800 connections. In 2001, IRWD merged on the east boundary with the Los Alisos Water District with approximately 12,400 connections. In 2006, IRWD merged with Santiago Water District, located within the

unincorporated area of Orange County, with 740 connections. In 2008, IRWD merged with Orange Park Acres Mutual Water Company, located within the City of Orange, with 530 connections. IRWD's current records show 111,511 connections serve 90,403 acre-feet (AF) of water annually.

IRWD is an independent special district organized under the California Water District Code, IRWD is governed by a five-member, publicly elected Board of Directors responsible for the District's policies and decision making. Day-to-day operations are supervised by the General Manager and District staff.

IRWD's mission is to provide high quality water and sewer services in an efficient, cost effective, and environmentally sensitive manner which produces a high level of customer satisfaction.

3.2. Climate

IRWD's service area has a generally mild and relatively uniform climate with an average rainfall in the area of 14.2 inches. The table below (IRWD Table 1) below shows average climate characteristics for the IRWD service area.

IRWD Table 1 – IRWD Average Climate

IRWD Average Climate						
	<i>Jan.</i>	<i>Feb</i>	<i>March</i>	<i>April</i>	<i>May</i>	<i>June</i>
Monthly Average ETo	2.12	2.26	3.42	4.65	4.98	5.59
Average Rainfall	2.997	4.3	2.36	1.08	0.47	0.1
Average Temperature	56.1	56.9	57.8	59.0	65.8	65.5
	<i>July</i>	<i>Aug</i>	<i>Sept</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>
Monthly Average ETo	6.03	6.06	4.55	3.49	2.43	2.13
Average Rainfall	0.0	0.005	0.22	0.27	1.39	1.66
Average Temperature	69.9	68.9	71.2	62.0	56.7	56.2

ET and Rainfall are reported in inches; Temperature is degrees in Fahrenheit.

3.3. Population

IRWD serves all or portions of seven cities, plus part of unincorporated Orange County. IRWD, once largely an agricultural community, is continuing to undergo municipal and industrial development with vacant land and farmland being urbanized each year. IRWD's service area population of 381,463 (June 2015) is approximately 80% of the ultimate projected population estimated at 479,783 for 2035. In addition, IRWD's estimated daytime population is approximately 530,000 persons.

Population data shown in DWR Table 3-1 below was developed based on information from the Center for Demographic Research at California State University, Fullerton (CDR) and 2015. The CDR approach has been approved by DWR for use by the Municipal Water District of Orange County in its Regional UWMP, which includes IRWD. IRWD is using the same CDR

data and approach in its individual plan. CDR developed projections for non-census years using California State Department of Finance Data combined with GIS information.

DWR Table 3-1 Population – Current and Projected

Population Served	2015	2020	2025	2030	2035
	381,463	440,981	467,483	475,346	479,783

3.4. Other Demographic Factors

Other demographic factors that have affected IRWD’s water management and supply planning over the development of its service area are described below.

Much of the original agricultural lands within IRWD’s service area have been converted to residential, commercial, industrial and other urban uses. The majority of the development within the IRWD service area follows the City of Irvine General Plan first adopted in 1973 and amended several times since then. The remainder of the service area follows the appropriate jurisdictional agency’s General Plan or projections from the County of Orange. These plans establish a guideline for land use development within the IRWD service area and serve to coordinate the timing of future growth.

The model used to forecast IRWD water demands calculates existing and future population estimates by multiplying the number of dwelling units in each density category by the number of persons per dwelling unit for that category (see “IRWD’s Water Resource and System Planning” below). A major characteristic of IRWD’s service area is the concept of residential villages with a wide range of housing products and densities and very low-density residential development in the rugged, more environmentally sensitive foothills.

Industrial and Commercial Activities

Industrial and commercial development within IRWD has been concurrent with residential development. The jurisdictional agencies’ General Plans define industrial and commercial development within the IRWD service area. These developments consist of regional commercial centers with high-rise buildings, major business and industrial complexes located along the eastern and western edges of IRWD’s service area.

Institutional

The University of California, Irvine (UCI) main campus occupies 1,489 acres within the south-central part of IRWD. The present student population is about 31,500 with approximately 10,500 faculty and staff. There is a projected UCI build-out population of approximately 36,000 students and 6,000 faculty and staff at the year 2025. IRWD participates with UCI on its Subarea Master Planning to determine the effects of planned improvements on IRWD’s water, recycled water and sewer systems.

Major Land Use Changes

In 1999, the Marine Corps stations located at the eastern (El Toro) and western (Tustin) portion of IRWD closed as part of the Federal Base Realignment and Closure process. Redevelopment and reuse plans for both bases have been prepared by the various jurisdictional agencies and IRWD has been involved and prepared various levels of planning studies for these plans. For the Tustin base property, IRWD relies on the current land use plans prepared by the City of Tustin. The El Toro base property, formerly within the unincorporated County of Orange, was mostly annexed to the City of Irvine and IRWD has included project water demands based on the City's and County's proposed land use plan for the base property.

IRWD's Lake Forest service area (formerly Los Alisos Water District) is zoned for approximately 2/3 residential and 1/3 commercial development. Existing development is primarily single-family residential with some multi-family residential, office space, commercial industrial and open space. The industrial and commercial development provide a wide range of services such as manufacturing, assembly, research and development, high technology, aerospace, professional services, biomedical and warehouse operations among others. Currently, the City of Lake Forest is in various stages of developing approximately 950 acres (commercial and residential) of previous vacant land adjacent to the former Marine Corps Air Station at El Toro. IRWD works closely with the City of Lake Forest on its ultimate plan for this area and has updated its water demand projections accordingly.

In late 2001, the Irvine Company (the major land owner within IRWD's service area) announced the planned dedication of a large area as permanent open space. The majority of this land is located in the northwestern portion of IRWD's service area (City of Orange sphere of influence), with an additional area near Laguna Canyon Road. Based on this change, IRWD has made appropriate reductions in its demand projections.

IRWD's Water Resource and System Planning

The basis for the preparation of the UWMP is IRWD's principal water management planning document, the WRMP. IRWD's WRMP describes both the potable and non-potable systems and provides a basis for future IRWD water resource planning. The WRMP is a comprehensive document compiling data and analysis, including current and future land uses, that IRWD considers necessary for its planning needs. The WRMP provides identification of an optimum mix of water resources to meet normal and emergency requirements which prioritizes local supplies versus imported supplies.

The foundation for IRWD's water resource planning is the compilation of land use data. For IRWD, this has required interfacing with multiple jurisdictions and developing a land use database using a geographic information system (GIS). Computerized GIS linked to the master planning process enables more detailed categorization of residential land use to better match residential land use by jurisdictional agency.

Included in the WRMP, IRWD employs water use factors to enable it to assign water demands to various land use types and aggregate the demands. The water use factors are based on average water use and incorporate the effect of IRWD's tiered-rate conservation pricing and its other water conservation programs. The factors are derived from historical usage (billing data) and a

detailed review of water use factors within the IRWD services areas conducted as part of the WRMP. Land use data is used in conjunction with updated water use factors to estimate water requirements through development of a “demand forecasting tool.” Appropriate GIS layers are established to segregate demands for system and storage evaluations. These evaluations are based on system criteria, which are reviewed in detail and updated as part of the planning effort.

IRWD’s water resources reliability program relies on diversifying water supplies and further maximizing local resources to meet demands. These efforts including maximizing local groundwater development, expansion of IRWD’s recycling water program, and the development of water banking facilities in the Kern County area to provide a contingency, supplemental supply for extended drought or supply interruptions when imported supplies may be restricted.

As discussed more in Chapter 6, IRWD’s potable water system was historically reliant on imported water supplies from MWD; however, in an effort to develop local supply reliability, in 1979, IRWD constructed its primary groundwater supply the Dyer Road Well Field. To further offset the need for imported water for non-potable uses, IRWD has also continued to expand its recycled water program as demands have increased.

4. SYSTEM WATER USE

Law

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

10631(e)(1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), identifying the uses among water use sectors including, but not necessarily limited to, all of the following uses:

(A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; and (I) Agricultural, (J) Distribution system water loss.

10631.1(a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county or city and county in the service area of the supplier

As described in Chapter 3, the foundation for IRWD's water demand forecasting and planning in its WRMP is the compilation of land use data. Land use data obtained through the multiple jurisdictions (cities and County) within IRWD's service area is used in conjunction with IRWD's applied water use factors to estimate water requirements. IRWD employs water use factors which assign water demands to various land use types and aggregates the demands. The water use factors are based on average water use and incorporate the effect of IRWD's tiered-rate conservation pricing. The factors are derived from historical usage and a detailed review of water use factors within the IRWD service area conducted as part of IRWD's planning.

4.1 Demand Sectors in Water Code

All connections for IRWD are metered. Each single-family dwelling unit and many townhouses and condominiums have individual meters. IRWD employs the following DWR-defined demand sectors: Single family residential, multi-family, commercial, industrial, institutional/governmental, landscape, sales to other agencies (recycled water only), agricultural, distribution system losses. Other water demands that IRWD incorporates in water uses includes metered water used for temporary construction, fire line and lake filling and any unbilled authorized consumption such as water used for line flushing or well start up. The "Other" category does not include any water losses which are reported separately as "Losses".

Current and projected data on water use within IRWD's service in five-year increments is provided in DWR Tables 4-1, 4-2 and 4-3 below. Current information is based on monthly records of water sales throughout the service area. The majority of irrigation use within IRWD is served with recycled water; the current and projected demand for recycled water only is included in DWR Table 6-4. IRWD's recycled water demand combined with potable and raw water demands for current and projection is shown in DWR Table 4-3. DWR Tables 4-1, 4-2

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and 4-3 include IRWD's distribution system water loss, and potable or raw water landscape and agricultural uses.

Water use in 2015 as shown in DWR Table 4-1 is lower than anticipated due to the historically dry conditions throughout the state of California and the Governor's Executive Order issued on April 1, 2015, which mandated an aggregate statewide 25 percent reduction in potable water use through February 2016.

DWR Table 4-1: Demands for Potable and Raw Water – Actual

Use Type (Add additional rows as needed)	2015 Actual		
<i>Drop down list</i> <i>May select each use multiple times</i> <i>These are the only Use Types that will be recognized by the WUEdata online submittal tool</i>	Additional Description (as needed)	Level of Treatment When Delivered <i>Drop down list</i>	Volume
Multi-Family		Drinking Water	6,286
Single Family		Drinking Water	24,024
Commercial		Drinking Water	7,856
Landscape		Drinking Water	4,987
Institutional/Governmental		Drinking Water	2,418
Agricultural irrigation		Drinking Water	226
Industrial		Drinking Water	5,836
Other		Drinking Water	808
Landscape		Raw Water	605
Agricultural irrigation		Raw Water	1,819
Agricultural irrigation	Supplement to RW System	Raw Water	649
Landscape	Supplement to RW System	Raw Water	4,339
Commercial	Supplement to RW System	Raw Water	49
Industrial	Supplement to RW System	Raw Water	10
Other	Supplement to RW System	Raw Water	153
Losses	Distribution System Water Loss	Drinking Water	4,091
TOTAL			64,154

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DWR Table 4-2: Demands for Potable and Raw Water - Projected

Use Type <i>(Add additional rows as needed)</i>	Additional Description <i>(as needed)</i>	Projected Water Use <i>Report To the Extent that Records are Available</i>				
<u>Drop down list</u> <i>May select each use multiple times</i> <i>These are the only Use Types that will be recognized by the WUEdata online submittal tool</i>		2020	2025	2030	2035	2040-opt
Agricultural irrigation		1,209	1,055	881	707	
Commercial		9,865	10,653	11,138	11,623	
Industrial		6,890	7,136	6,118	6,118	
Institutional/Governmental		2,274	3,932	6,474	6,478	
Landscape		4,355	3,689	3,087	2,484	
Multi-Family		12,428	14,182	14,726	15,274	
Single Family		29,532	32,098	33,078	34,055	
Losses	Distribution Syst Water Loss	4,533	4,955	5,143	5,227	
TOTAL		71,086	77,700	80,645	81,966	0

DWR Table 4-3: Total Water Demands

	2015	2020	2025	2030	2035	2040 (opt)
Potable and Raw Water <i>From Tables 4-1 and 4-2</i>	64,154	71,086	77,700	80,645	81,966	0
Recycled Water Demand* <i>From Table 6-4</i>	26,249	25,359	28,261	28,786	29,311	0
TOTAL WATER DEMAND	90,403	96,445	105,961	109,431	111,277	0
<i>*Recycled water demand fields will be blank until Table 6-4 is complete.</i>						

4.2 Distribution System Water Losses

Projected water losses, reported in five year increments, are included in IRWD's UWMP to the extent that records are available. IRWD quantified its distribution system losses using the American Water Works Association Method and Audit Software. Appendix D contains IRWD's Reporting Worksheet and Performance Indicators. IRWD's system scored a 1.19 in the Infrastructure Leakage Index (ILI). The ILI is a highly effective performance indicator for benchmarking utilities in operational management of real losses. Although not required, IRWD contracted with a third party consultant which validated IRWD's water loss audit findings.

DWR Table 4-4 below includes IRWD's water losses for the 12-month period July1, 2014 through June 30, 2015. This water loss volume is also reported in DWR Table 4-1 above and is projected through the 20-year reporting period in DWR Table 4-2.

DWR Table 4-4: 12 Month Water Loss Audit Reporting

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
07/2014	4091
<i>* Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.</i>	

4.3 Estimating Future Water Savings

IRWD's water use projections do not account for future water savings estimated from "passive savings" from codes, standards, or ordinances. It does incorporate water savings experienced through IRWD's budget based tiered rate structure.

4.4 Water Use of Lower Income Households

In accordance with Water Code Section 10631.1(a), IRWD's water use projections include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code.

5. SBX7-7 BASELINES AND TARGETS

5.1 Update of Target Method

Law

10608.20(b) Retail suppliers shall adopt a 2020 water use target using one of four methods.

10608.20(g). An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6(commencing with Section 10610).

With the adoption of the Water Conservation Act of 2009, also known as SB X7-7, the State is required to reduce urban water use by 20 percent by 2020. In the 2010 UWMP's urban water agencies were required to calculate baseline water use and target water use for the years 2015 and 2020 following DWR's *Methodologies for Calculating Baseline and Compliance Per Capita Water Use*. Agencies may calculate their targets using one of four different methods. In their 2015 UWMP's agencies must demonstrate compliance with their calculated targets, although the baselines and selected target calculation method may be revised.

To meet this requirement, as part of its 2010 UWMP, IRWD calculated and reported on its individual baseline per capita water use, 2020 water use target and 2015 interim target. IRWD used Method 1 to calculate its individual 2020 target which is defined as 80 percent of baseline gallons per capita per day (GPCD) use. IRWD has not modified its individual target methodology used in the 2010 submittal in this plan. IRWD developed its individual baseline and targets consistent with DWR's *Methodologies for Calculating Baseline and Compliance Per Capita Water Use*, and as described below.

5.2 Standard Tables for SBX7-7 Reporting

Law

10644 The plan... shall include any standardized forms, table or displays specified by the department.

IRWD has completed and submitted the required standardized tables in the SB X7-7 Verification Form. A copy of the SB X7-7 tables applicable to IRWD is provided in Appendix E.

5.3 Baseline Period

Law

10608.20 (e) An urban retail water supplier shall include in its urban water management plan due in 2010... the baseline daily per capita water use... along with the bases for determining those estimates, including references to supporting data.

10608.12 (1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(2) For an urban retail supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier ..., the supplier may extend the calculation described in paragraph (1) up to an additional five years, to a maximum of a continuous 15 year period ending no earlier than December 31, 2004.

10608.12 (b) For the purposes of Section 10608.22, the urban water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007.

To comply with Water Code Section 10608, agencies must calculate a 10 or 15 year baseline. Agencies are only eligible to use a 15-year baseline if recycled water use in 2008 met at least 10 percent of its measured retail. IRWD delivered 14,358 AF of recycled water from total deliveries of 97,216 AF in 2008, or 14.7% of total deliveries, and therefore is eligible for an extended 15-year baseline. Fifteen year baselines must be continuous, ending no earlier than December 31, 2004 and no later than December 31, 2010. IRWD's 15-year baseline period is from fiscal year 1990-91 through fiscal year 2004-2005. Over the 15-year baseline period, IRWD's average water use was 214 GPCD. IRWD has not modified its 15 year baseline per capita use from its 2010 UWMP submittal (Water Code Section 10608.24(d)(2)).

IRWD has updated its 5-year baseline period from in this 2015 plan. In the 2010 plan the baseline was from 2003 to 2007. IRWD reports on a fiscal year basis, and therefore to ensure the 5 year period ends no earlier than December 31, 2007, IRWD has revised its 5-year baseline to the 2004-2008 period.

Information on the 15-year and 5-year baseline periods is provided below in SB X7-7 Table 1.

SB X7-7 Table 1: Baseline Period Ranges

Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	97,216	Acre Feet
	2008 total volume of delivered recycled water	14,358	Acre Feet
	2008 recycled water as a percent of total deliveries	14.77%	Percent
	Number of years in baseline period ^{1, 2}	15	Years
	Year beginning baseline period range	1991	
	Year ending baseline period range ³	2005	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2004	
	Year ending baseline period range ⁴	2008	

5.4 Use of 2010 Census Data and Service Area Population

Law

10608.20 (e) When calculating per capita values for the purpose of this chapter, an urban retail water supplier shall determine population using federal, state and local population reports and projections

In order to correctly calculate GPCD, agencies must determine the population that they year for each of the baseline year in both of the baseline periods and for the 2015 compliance year. IRWD serves all or portions of seven cities, plus part of unincorporated Orange County. Population data was developed for by the Center for Demographic Research at California State University, Fullerton (CDR) in 2010 and 2015. The CDR approach has been approved by DWR for use by MWDOC and all of the agencies in its Regional UWMP, which includes IRWD. IRWD is using the same CDR data and approach in determining its individual targets. Population estimates were derived from the 2000 census data in the 2010 UWMP. The population information has been updated in this plan with 2010 census data. CDR developed projections for non-census years using California State Department of Finance Data combined with GIS information. There are no changes to the original population data for the baseline periods. The population data for IRWD is based on IRWD's 2015 service area boundary. IRWD has consolidated with several other agencies since during and since the baseline period. The water supply and population data for all of those areas was included for the entire baseline period for purposes of consistency.

5.5 Gross Water Use Calculation

Law

10608.12 Gross Water Use means the total volume of water, whether treated or untreated, entering the distribution system of an urban water supplier, excluding all of the following: (1) Recycled water that is delivered within the service area (2) The net volume of water the urban retail water supplier places into long term storage (3) The volume of water the supplier conveys for use by another urban water supplier (4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

Gross water use is a measure of the water that enters the distribution system of the supplier over a 12-month period. All of IRWD's water use data is reported on a fiscal year basis (July 1 – June 30). IRWD consolidated with several other agencies during the baseline period, and therefore the combined water use data for the whole consolidated service area was used for the entire baseline period for purposes of consistency. A schematic of IRWD's distribution system is provided in Appendix F.

IRWD's potable sources of supply include imported treated water and local groundwater. IRWD's non-potable water supplies consist of recycled water, untreated imported water, surface water and non-potable groundwater. To calculate gross water use, IRWD compiled water volumes from its various water sources based on metered water supplied to the distribution system in accordance with DWR's technical methodologies. Exports of non-recycled water from IRWD to other agencies were calculated based on metered data and deducted.

IRWD has insignificant changes in storage, and no water is transferred from within the distribution to long-term storage. Within the potable distribution system, operational storage is provided in each service zone to balance the differences between the rates of supply and the hourly demand on a given day. While there are changes in storage over the course of a day, annual changes in the operational storage in the potable distribution system are insignificant. Untreated water is used to supplement IRWD's recycled water system on an as needed basis; it does not require operational storage once it enters the distribution system. No adjustments were made for changes in long-term storage.

Adjustments to the gross water use for recycled water, agricultural use and indirect potable reuse are discussed below.

Recycled Water and Agricultural Use

In accordance with Section 10608.12 (m), recycled water directly entering the distribution system is deducted from the calculation of gross water, based on metered data. Since SB X7-7 applies to urban use, deliveries of other non-potable and potable water to agricultural customers are also deducted, based on metered billing data.

Indirect Potable Reuse

In addition to the deduction for direct recycled water, SBx7-7 allows urban retail water suppliers to calculate a deduction for recycled water indirectly entering their distribution system indirectly through a groundwater source, referred to as indirect potable reuse (IPR). As a producer within the OCWD, IRWD may use this deduction to account for the recharge of recycled water into the

basin by OCWD, historically through Water Factory 21, and more recently by the Ground Water Replenishment System (GWRs).

The allowable deduction depends on the amount of indirect potable reuse extracted as part of IRWD's potable groundwater production from its wells within the OCWD basin. IRWD's uses DWR's Recharge Data Less In-Basin Losses methodology to calculate the allowable deduction for indirect potable reuse, which is based on the product of the following three factors.

1) Annual Volume of Water Recharged for IPR Use

Because there can be year-to-year variations in the amount of recycled water applied in a groundwater recharge operation, the calculation requires the use of long-term running averages. IRWD uses a five-year average of recycled water recharged by OCWD for IPR.

2) Loss Factor

A loss factor must be applied to account for water losses during recharge and extraction. In its Groundwater Management Plan, OCWD determined that the appropriate loss factor is 3.5%, which includes losses over county lines to the Los Angeles Basin.

3) Volume of Water Pumped

The amount of the volume of recycled water recharged into the OCWD basin for IPR as a percentage of the total OCWD production is calculated. IRWD's total groundwater pumped is multiplied by the percentage of basin IPR to determine the IRWD IPR adjustment credit.

IRWD's Indirect Potable Reuse

The following IRWD Table 2 provides the calculation of recharge of recycled water for IPR by IRWD. Following is a description of how the credit is calculated.

The total groundwater recharged by OCWD for each year from Water Factory 21, and in later years from the GWRs is shown in column (1). The previous five year average of recharge is shown in column (2).

To account for the loss factor of 3.5% provided by OCWD, only 96.5% of the recycled water recharged for IPR is assumed to enter the distribution system. Losses in extraction by IRWD are accounted for since the water is metered as it enters the distribution system. Waste and agricultural use of groundwater are excluded from IRWD's groundwater production data.

After accounting for these losses, the estimated volume of indirect recycled water entering the distribution system for all the OCWD producers is calculated in column (4). The recycled water recharged for IPR is expressed as a percentage of the total volume of water extracted from the basin in that year in column (5).

To determine the recharged recycled water entering IRWD's distribution system for IPR, IRWD's total basin potable groundwater production (7) is multiplied by the percentage of recharged recycled water. The result, shown in column (8) is IRWD's IPR credit.

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For example, IRWD pumped 34,118 AF of water from the OCWD Basin in Fiscal Year 2004/05, so 1.47% of that groundwater production would be from recycled water recharged into the basin. This equates to a deduction of 500 AF from IRWD's calculation of Gross Water Use for that year.

IRWD Table 2: Calculation of Annual Deductible Volume of Indirect Recycled Water Entering Distribution System

Recycled Water Recharge for Indirect Potable Reuse								
Fiscal Year Ending	(1) OCWD Total Groundwater Recharge with Recycled Water (Acre-Feet)	(2) 5-Year Average Recharge with Recycled Water (Acre-Feet)	(3) Loss Factor for Recharge & Recovery	(2) x (3) = (4) Volume of Recycled Water Recharge Entering Distribution System (Acre-Feet)	(5) Total OCWD Basin Production	(4)/(5) = (6) Percent of Total Basin Production from Recharged Recycled Water	(7) IRWD OCWD Groundwater Basin Potable Production	(6) x (7) = (8) IRWD IPR Credit
1990	6,498	6,498	96.5%	6,271	229,878	2.73%	N/A	N/A
1991	6,634	6,498	96.5%	6,271	235,532	2.66%	14,892	396
1992	6,843	6,566	96.5%	6,336	244,333	2.59%	18,478	479
1993	8,161	6,658	96.5%	6,425	243,629	2.64%	17,817	470
1994	5,042	7,034	96.5%	6,788	237,837	2.85%	17,270	493
1995	2,738	6,636	96.5%	6,403	276,096	2.32%	21,722	504
1996	4,282	5,884	96.5%	5,678	302,273	1.88%	19,610	368
1997	4,389	5,413	96.5%	5,224	310,217	1.68%	23,122	389
1998	2,496	4,922	96.5%	4,750	297,726	1.60%	22,343	356
1999	3,489	3,789	96.5%	3,657	322,476	1.13%	22,149	251
2000	5,774	3,479	96.5%	3,357	320,250	1.05%	22,888	240
2001	2,067	4,086	96.5%	3,943	323,129	1.22%	22,280	272
2002	4,143	3,643	96.5%	3,515	322,590	1.09%	27,569	300
2003	3,867	3,594	96.5%	3,468	274,927	1.26%	33,687	425
2004	1,784	3,868	96.5%	3,733	266,969	1.40%	32,414	453
2005	4,156	3,527	96.5%	3,404	232,199	1.47%	34,118	500
2006	4,086	3,203	96.5%	3,091	215,172	1.44%	27,680	398
2007	218	3,607	96.5%	3,481	284,706	1.22%	43,979	538
2008	17,792	2,822	96.5%	2,723	351,622	0.77%	45,303	351
2009	54,261	5,607	96.5%	5,411	310,586	1.74%	45,468	792
2010	65,950	16,103	96.5%	15,539	273,889	5.67%	45,057	2,556
2011	66,083	28,461	96.5%	27,465	248,659	11.05%	37,703	4,164
2012	71,678	40,861	96.5%	39,431	266,066	14.82%	43,340	6,423
2013	72,877	55,153	96.5%	53,223	298,175	17.85%	44,024	7,858
2014	66,167	66,170	96.5%	63,854	318,967	20.02%	49,607	9,931
2015	76,546	68,551	96.5%	66,152	296,292	22.33%	45,284	10,110

5.6 Baseline Daily Per Capita Use

Once the gross water use is calculated, the per capita use is calculated for each of the two baselines; the fifteen-year baseline and the five-year baseline. SB X7-7 Table 5 below shows IRWD's water use as 214 GPCD for the fifteen-year baseline and 204 GPCD for the five-year baseline.

SB X7-7 Table 5: Gallons per Capita Per Day (GPCD)

Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Annual Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1991	204,798	49,509	216
Year 2	1992	210,357	45,651	194
Year 3	1993	215,469	46,941	194
Year 4	1994	219,040	49,674	202
Year 5	1995	222,058	51,185	206
Year 6	1996	225,982	56,172	222
Year 7	1997	231,284	62,905	243
Year 8	1998	237,055	54,933	207
Year 9	1999	242,816	62,235	229
Year 10	2000	250,574	67,593	241
<i>Year 11</i>	2001	256,610	65,288	227
<i>Year 12</i>	2002	266,937	66,517	222
<i>Year 13</i>	2003	275,710	61,376	199
<i>Year 14</i>	2004	282,869	67,695	214
<i>Year 15</i>	2005	293,616	63,638	193
10-15 Year Average Baseline GPCD				214
5 Year Baseline GPCD				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use
Year 1	2004	282,869	67,711	214
Year 2	2005	293,616	63,651	194
Year 3	2006	302,909	65,397	193
Year 4	2007	310,777	75,481	217
Year 5	2008	320,764	73,526	205
5 Year Average Baseline GPCD				204

5.7 2015 and 2020 Targets

Law

10608.20(e). An urban retail water supplier shall include in its urban water management plan... urban water use target, interim urban water target...along with the bases for determining those estimates.

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan...

10608.22 Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph (3) of subdivision (b) of Section 10608.12.

Water Use Target Method

Of the four different methods to choose from to calculate its 2020 water use target IRWD selected target Method 1. Method 1 is calculated as 80% of the 15-year baseline which results in a 2020 target of 171 gpcd (gallons per capita per day). This is the same method IRWD selected in its 2010 plan.

2020 Target Confirmation

A water agency's 2020 target cannot be higher than a 5 percent reduction from its five-year baseline GPCD. A 5 percent reduction from IRWD's five-year baseline of 204 GPCD is 194 GPCD. Using Method 1, IRWD's 2020 target is 171. Since this is lower than 194, the 171 calculated target is IRWD's confirmed target, shown in SB X7-7 Table 7-F below.

SB X7-7 Table 7-F

5 Year Baseline GPCD From SB X7-7 Table 5	Maximum 2020 Target ¹	Calculated 2020 Target ²	Confirmed 2020 Target
204	194	171	171
¹ Maximum 2020 Target is 95% of the 5 Year Baseline GPCD ² 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.			

2015 Interim Water Use Target

Water agencies must also calculate a 2015 interim target in order to determine compliance in 2015. The interim water use target is the value halfway between the 15-year baseline and the confirmed 2020 target. IRWD's 2015 interim water use target, calculated in SB X7-7 Table 8, and shown below, is 192 gallons per capita per day.

SB X7-7 Table 8: Interim Target GPCD

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target	10-15 year Baseline GPCD	2015 Interim Target GPCD
171	214	192

5.8 2015 Compliance Daily Per Capita Water Uses

Law

10608.24(a) Retail suppliers shall meet their interim target by December 31, 2015.
10608.40 Retail suppliers shall report on their progress in meeting their water use targets. This data shall be reported in using a standardized form.

In accordance with the requirement IRWD has reported its progress in meeting the water use targets using the standardized SBX7 Tables. IRWD's 2015 interim target is 192 GPCD, and its 2020 target is 171 GPCD. IRWD's actual GPCD for 2015 was 129, which is well within compliance of its interim target of 192 GPCD. As indicated in SB X7-7 Table 9 below, IRWD has achieved its targeted reduction for 2015.

SB X7-7 Table 9: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	TOTAL Adjustments	Adjusted 2015 GPCD	2015 GPCD (Adjusted if applicable)	Did Supplier Achieve Targeted Reduction for 2015?
129	192	0	129	129	YES

IRWD has not only met its 2015 interim target of 192 GPCD, but has also met its 2020 target of 171 GPCD. This demonstrates the effectiveness of IRWD's recent drought response, its long-term commitment to ongoing water efficiency discussed in Chapter 9, and its investments into the development of sustainable supplies, including recycled water.

5.9 Regional Alliance

As a retail agency, IRWD has the option of complying individually or participating in a Regional Alliance. IRWD chose to participate in a Regional Alliance with MWDOC. Each agency within the MWDOC Regional Alliance calculates its own individual target, as if it were complying individually. The individual targets for each agency are then weighted by the supplier's

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population to develop a regional target. In the event that the region does not comply with the regional target, an agency may still be in compliance if it meets its own individual target. Information on the Regional Alliance target calculations and compliance is contained within MWDOC's UWMP.

6. SYSTEM SUPPLIES

Law

10631(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments as described in subdivision (a) (10631(b)).

10631(b) Is groundwater identified as an existing or planned source of water available to the supplier ... (10631(b))?

10620(f) Describe water management tools and options to maximize resources and minimize the need to import water from other regions.

IRWD's water supply reliability plan relies on diversifying water supplies and further maximizing local resources to meet demands. IRWD is a member agency of the MWDOC, which is a wholesale importer and member agency of the MWD. As such, MWDOC is entitled to receive water from the available sources of MWD. IRWD receives its imported potable and non-potable supplies through MWDOC. Groundwater is an additional source of water for IRWD and is anticipated to increase in the future. In addition, recycled water currently meets a large portion of the landscape irrigation demands within IRWD's service area.

6.1 Purchased or Imported Water

Imported Potable Water Supply

Currently, approximately 27% of IRWD's potable water needs are met by potable water purchased and supplied by MWD through MWDOC. Potable imported water is delivered to IRWD at various service connections to the imported water delivery system of MWD. The majority of imported potable water is supplied from a single source; the MWD Diemer Filtration Plant (DFP) located north of Yorba Linda. Typically, the DFP receives a blend of Colorado River water from Lake Matthews through the MWD lower feeder and State Water Project (SWP) water through the Yorba Linda Feeder.

The two major transmission pipelines that deliver DFP water to the service area are the Allen-McColloch Pipeline (AMP) and East Orange County Feeder No. 2 (EOCF #2). IRWD owns 64.7 cubic feet per second (cfs) capacity in the AMP, 41.4 cfs capacity in all reaches of the EOCF #2 down to Coastal Junction. In addition to DFP imported water, IRWD also receives potable water from the Weymouth Filtration Plant via the Orange County Feeder through a capacity of 18 cfs acquired through its consolidation with Santa Ana Heights Mutual Water Company. IRWD also purchases untreated supplies from MWD, as needed to supplement its recycled water system during peak demand periods. This is discussed below under "Imported Non-Potable Water Supply".

Imported Non-Potable Water Supply

IRWD's non-potable water supplies consist of recycled water, untreated imported water, surface water and non-potable groundwater. IRWD purchases untreated water through MWDOC which is a member agency of MWD. Untreated purchased water is primarily used to meet certain agricultural and landscape demands that cannot be met with recycled water and to supplement recycled water system during peak months. The imported untreated water pipeline is delivered through the shared Baker Pipeline connected to MWD's system. IRWD's original capacities in the Baker Pipeline include 52.70 cfs in the first reach, 12.50 cfs in each of the second, third and fourth reaches and 7.51 cfs in the fifth reach of the pipeline. After 2016, the Baker Water Treatment Plant (WTP) will treat non-potable imported water and surface water (see Future Water Supplies). IRWD's existing Baker Pipeline capacities have been apportioned to the Baker WTP participants based on Baker WTP capacity ownership. IRWD retains 10.5 cfs of the pipeline capacity for potable supply through the Baker WTP and retains 36 cfs in first reach of the pipeline for non-potable supply.

DWR Tables 6-8 and 6-9 later in this Chapter 6 include IRWD's current and projected purchased supplies (potable and non-potable) for 2015 and through 2035. These capacities do not represent IRWD's total connected delivery capacity through MWD and MWDOC.

6.2 Groundwater

Law

Provide a copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management (10631(b)(1)).

Provide a description of any groundwater basin or basins from which the urban water supplier pumps groundwater (10631(b)(2)).

(Provide) a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree (10631(b)(2)).

For basins that have not been adjudicated, provide information as to whether the department has identified the basin as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official department bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition (10631(b)(2)).

Provide a detailed description and analysis of the location, amount and sufficiency of groundwater pumped by the urban water supplier for the past five years. (10631(b)(3)).

Basin Description

Over 50 percent of IRWD's overall supply comes from local groundwater wells in the Orange County Groundwater Basin (Basin), and the Irvine and Lake Forest Subbasins. IRWD is an operator of groundwater-producing facilities in the main portion of the Basin and the Subbasins.

Although the rights to pump groundwater within the Basin have not been adjudicated, they nevertheless exist and have not been abrogated by the Orange County Water District Act, Water Code App., Ch 40 (Act). The Orange County Water District (OCWD) manages the areas of the Basin that are located within the OCWD boundary under the Act. The Irvine Subbasin is located within the OCWD boundary but the Lake Forest area subbasin is outside of the OCWD boundary. OCWD manages the Basin for the benefit of municipal, agricultural and private groundwater producers and is responsible for the protection of water rights to the Santa Ana River in Orange County as well as the management and replenishment of the Basin. Producers may install and operate production facilities under the Act; OCWD approval is not required.

Orange County Groundwater Basin

As stated in the OCWD Groundwater Management Plan 2015 Update, the Basin covers approximately 350 square miles bordered by Chino Hills to the north, the Santa Ana Mountains to the northeast and Pacific Ocean to the southwest. Measured recharge consists of all water artificially recharged at OCWD's forebay recharge facilities and water injected at the Talbert Barrier and on the Orange County side of the Alamitos Barrier. Groundwater conditions in the Basin are influenced by the natural hydrologic conditions of rainfall, groundwater seepage and stream flow. Incidental recharge accounts for a significant amount of the Basin's producible yield including precipitation and subsurface inflow. The recent average production from the main Basin is approximately 330,000 AFY. IRWD produces the majority of its groundwater primarily from the main portion of the Basin.

Irvine Subbasin

IRWD also produces non-potable supplies from the Irvine Subbasin. The Irvine Subbasin forms the southern-most portion of the Basin. Just as the rest of the main Basin, of which this Subbasin is a part, the OCWD provides governance and management under the Act. This Subbasin has a perennial groundwater yield estimated at 13,000 AF, and the groundwater in this basin is generally higher in total dissolved solids, color and nitrates. IRWD has constructed facilities to treat some of the water produced for potable use through the Irvine Desalter Project. The Irvine Desalter began operations in 2007 and has the capacity to produce approximately 5,600 AFY of potable water supplies.

IRWD also constructed two non-potable treatment plants to clean up the groundwater within the vicinity of the former Marine Corps Air Station, El Toro. These plants involve treatment processes to remove volatile organic chemicals to clean up the Basin and prevent a plume from reaching the main Basin. In addition, IRWD operates a few other wells which produce non-potable quality water and altogether, IRWD can produce about 4,100 AFY of non-potable water from the Irvine Subbasin which supplements IRWD's recycled water distribution system.

Lake Forest Area Wells

IRWD also historically operated six wells within the Lake Forest area subbasin which has low production capability. Currently IRWD produces approximately 340 AFY of potable water from this groundwater area. IRWD is currently evaluating the future use of other wells in this area.

Groundwater Management

OCWD is the groundwater manager over the main Basin, including the Irvine Subbasin, and the producers are the local retailers of the groundwater supplies. OCWD has prepared a Groundwater Management Plan, last updated in July 2015 (http://www.ocwd.com/media/3503/groundwatermanagementplan2015update_20150624.pdf).

The Groundwater Management Plan identifies OCWD's goals and management objectives in protecting and managing the Basin. This plan describes Basin hydrogeology, water supply monitoring, management and operation of recharge facilities, groundwater replenishment system, seawater intrusion monitoring and barrier management, and water quality protection. IRWD has not, nor have any other Basin groundwater producers, adopted OCWD's Groundwater Management Plan. IRWD is a producer of groundwater in the OCWD-managed portion of the Basin, and does not have any jurisdictional authority or authorization for groundwater management of this portion of the basin. Therefore, it is not appropriate for IRWD to adopt OCWD's Groundwater Management Plan.

Changes to groundwater management under the Sustainable Groundwater Management Act (SGMA) are beginning to be implemented. The regulations for Groundwater Sustainability Plans were just recently adopted (May 2016), and were not available at the time of the 2015 UWMP is not expected to be finalized until after June 30, 2016, which is when the 2015 UWMPs are due to DWR (July 1, 2016). Therefore, per the "2015 UWMP Guidebook for Urban Water Suppliers", the new requirements for groundwater management under SGMA will not apply to the 2015 UWMPs.

The Lake Forest area subbasin, in which IRWD operates wells, is located outside the OCWD boundary. Under SGMA, IRWD will assist OCWD in preparing an alternative groundwater sustainability plan to cover this Lake Forest subbasin.

OCWD manages the Basin to allow utilization of up to 500,000 AF of storage capacity of the Basin during dry periods, acting as an underground reservoir and buffer against drought. OCWD operates the Basin to keep the target dewatered Basin storage at 200,000 AF as an appropriate accumulated overdraft. OCWD has made substantial investment in facilities, Basin management and water rights protection, resulting in the elimination and prevention of adverse long-term "mining" overdraft conditions.

OCWD's planning documents examine future Basin conditions and capabilities, water supply and demand, and identified projects to meet increased replenishment needs of the Basin. With the implementation of OCWD's preferred projects in its Long Term Facilities Plan, OCWD expects the Basin yield in the year 2035 to be increased. The amount that can be produced will

be a function of which projects will be implemented by OCWD and how much increased recharge capacity is created by those projects, total demands by all producers, and the resulting Basin Production Percentage (BPP) that OCWD sets based on these factors.

Replenishment supplies for the Basin include capture of increasing Santa Ana River flows, purified recycled water, purchases of water from MWD, and expansion of local supplies. OCWD's Groundwater Replenishment System (GWRS) has been producing advanced treated recycled water since 2008. At the GWRS, wastewater (sewage) is purified using a three-step process to produce high-quality water used to recharge the Basin and for injection into the seawater intrusion barrier. The GWRS was expanded in 2015 from 72,000 AF annual production to 100,000 AF per year.

Overdraft Conditions

The Basin is located in the area designated by the DWR as the Coastal Plain of Orange County Groundwater Basin, Basin 8-1, in Bulletin 118 (DWR, 2003). Bulletin 118 (2003) characterizes the condition of the Basin and the Bulletin does not identify the Coastal Plain of Orange County Groundwater Basin as in overdraft condition.

OCWD calculates and reports accumulated overdraft in its annual Engineers Report, however "overdraft" in the traditional sense does not exist in the Basin because the Basin is operated to continuously fluctuate within the safe operating range (OCWD Groundwater Management Plan). OCWD's Act defines annual groundwater overdraft to be the quantity by which production exceeds the natural replenishment of the Basin. Accumulated overdraft is defined to be the quantity of water needed in the Basin forebay to prevent landward movement of seawater into the fresh groundwater body. However, OCWD has constructed seawater intrusion control facilities since the Act was written, which have been effective in preventing seawater intrusion into the Basin. OCWD's efforts being under taken to eliminate long-term overdraft in the Basin are described in OCWD's Groundwater Management Plan (see Groundwater Management section). As described under the "Groundwater Management" under SGMA, Groundwater management will change. However, these new requirements for groundwater management under SGMA will not apply to the 2015 UWMPs.

Historical Groundwater Pumping

For many years, IRWD received almost all of its water from imported sources. To alleviate this dependency on costly imported water, IRWD began to develop a series of local wells in 1979. The majority of the potable groundwater supply to IRWD is produced from the Dyer Road Well Field (DRWF) located in the City of Santa Ana, which is connected to IRWD's potable distribution system. The DRWF consists of 16 wells pumping from the clear water zone of the Basin and two wells (with colored-water treatment facilities) pumping from the deep, colored-water zone of the Basin. The colored-water portion of the DRWF is sometimes referred to as the Deep Aquifer Treatment System or DATS.). Under Agreement, there is an "equivalent" BPP established for the DRWF, currently 28,000 AFY consisting of 20,000 AFY of clear groundwater and an additional 8,000 AFY of "matching" clear groundwater, provided a minimum of 8,000 AFY of colored groundwater is pumped from the deep aquifer zone. IRWD

also owns and operates a groundwater production well in the City of Orange which serves up to 900 AFY of demands within IRWD's Orange Park Acres service area. IRWD also constructed and operates the Wells 21 and 22 Desalter in the City of Tustin which removes total dissolved solids (TDS) and nitrates from two nearby wells for potable use. Annual yield from Wells 21 and 22 can be up to 6,400 AF per year.

As mentioned, groundwater pumping rights within the OCWD are not adjudicated but groundwater production is managed by the OCWD through financial incentives. The framework for the financial incentives is based on OCWD establishing the BPP each year. The BPP is the ratio of groundwater production to total water demands expressed as a percentage. Groundwater production above the BPP is charged a Basin Equity Assessment (BEA), which is set so that the cost of groundwater pumping above the BPP is similar to the cost of imported water. Each year, OCWD sets a target amount of pumping, the BPP, and assesses a BEA on all water pumped above that limit. For 2015, OCWD adopted a BPP of 70%.

DWR Table 6-1 below shows IRWD's groundwater pumped over the past five years for the Basin and the Subbasins.

DWR Table 6-1: Groundwater Volume Pumped

Groundwater Type <i>Drop Down List</i> <i>May use each category multiple times</i>	Location or Basin Name	2011	2012	2013	2014	2015
<i>Add additional rows as needed</i>						
Alluvial Basin	Orange County Groundwater Basin	34275.1	37058.6	38616.9	43415.5	40655.6
Alluvial Basin	Irvine Subbasin	7055.1	7058.6	8629.4	10994.9	9840.2
Alluvial Basin	Los Alisos Area	0	0	281.8	375.7	336.4
TOTAL		41,330	44,117	47,528	54,786	50,832

6.3 Surface Water

IRWD, along with neighboring agency (Serrano Water District), has a permit and licenses to appropriate rights to the flows of Santiago Creek and IRWD has rights to diversion by storage at Santiago Dam (Irvine Lake) for a total of 28,000 AFY. IRWD currently utilizes its Irvine Lake supplies for agricultural irrigation and to supplement its recycled water system during peak periods. Serrano Water District which owns 25% of the capacity in Irvine Lake treats water for domestic use. Since the base flow from the catchment is very low, the annual yield variation from the reservoir may be extreme, from a few hundred acre-feet per year to overflow conditions. Based on averaging historical data, IRWD's share of the Santiago Creek local runoff that is captured in the Irvine Lake is about 4,000 AF per year and about 1,000 AF per year in dry years.

IRWD is currently constructing the Baker Water Treatment Plant (WTP), a joint regional project with four other south Orange County water districts (El Toro Water District, Moulton Niguel Water District, Santa Margarita Water District and Trabuco Canyon Water District).

The project will provide increased water supply reliability by increasing local treatment capability from multiple water supply sources including imported untreated water from MWD and through the local surface water in Irvine Lake. The Baker WTP is expected to be online in 2016, and therefore all Irvine Lake surface water will be treated for potable use and will no longer be a supplemental recycled water supply.

6.4 Stormwater

IRWD currently does not have any stormwater recovery systems.

6.5 Wastewater and Recycled Water

Law

10633 Provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.

10633(a) Describe the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

10633(b) Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

10633(c) Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place and quantity of use.

10633(d) Describe and quantify the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

10633(e) Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15 and 20 years and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

10633(f) Describe the action, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

10633(g) Provide a plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

Water recycling is an essential component of IRWD's water supply portfolio, as any demand met with recycled water reduces the demand for high-quality drinking water. IRWD has a very successful recycled water program which began in the mid-1960's when IRWD began collecting sewage (wastewater) and treating it to serve recycled water primarily to agricultural fields. Today, recycled water meets approximately 28 percent of IRWD's service area water demands. IRWD serves recycled water for many State-approved uses including landscape irrigation, agricultural irrigation, toilet flushing, cooling towers, industrial processes, composting, grading and compaction. IRWD's recycled water program has allowed IRWD to reduce its demands for potable, imported water and extend its drinking water supplies.

Recycled Water Coordination

IRWD has an extensive dual distribution system, which delivers recycled water from its two recycling treatment plants, the Michelson Water Recycling Plant (MWRP) and the Los Alisos Water Recycling Plant (LAWRP). The largest plant, the MWRP, is located in Irvine and uses both activated sludge and membrane bio-reactor technology to produce disinfected tertiary recycled water. The end result of the MWRP process is high-quality recycled water that earned IRWD the first unrestricted use permit issued in the state allowing recycled water to be used for virtually everything but drinking. The permitted tertiary treatment capacity of the MWRP is currently 28.0 million gallons per day (mgd). The efficiency of MWRP recycled water production has been estimated to be approximately 90% of the sewage inflow to the plant. IRWD is currently constructing a biosolids digester facility at MWRP. This will allow IRWD to digest and dehydrate sludge which will then be converted to pelletized fertilizer.

IRWD also owns and operates the LAWRP, located in Lake Forest, which is a separate sewage treatment system from MWRP with tertiary treatment capacity of 5.5 mgd. The Lake Forest sewer collection system consists of 105 miles of pipe and one lift station which delivers sewage to the LAWRP. Secondary effluent from the treatment plant is pumped to either the tertiary treatment facility where it is treated for reuse in IRWD's Lake Forest area recycled water distribution system or, if demands are low, to the South Orange County Wastewater Authority (SOCWA) pumping station which directs its flows to the SOCWA effluent transmission mains and subsequent ocean outfall.

Treated effluent produced at both plants meets the water quality standards set forth in the California Administrative Code (CAC), Title 22, Division 4 (Title 22) for use as recycled water. IRWD has invested in seasonal storage reservoirs which store excess recycled water during the winter months when irrigation demands are lower for use in the peak summer months. IRWD may also sell excess recycled water from MWRP to the OCWD, Green Acres Project (GAP) from October through March, and provide excess recycled water from LAWRP to neighboring Santa Margarita Water District (SMWD) on an as-needed and as-available basis. After storage and sales to others, any additional excess sewage would then be discharged to the Orange County Sanitation District (OCSD) or SOCWA for treatment and either reuse or ocean discharge. IRWD also maintains a connection to the OCSD where wastewater undergoes further treatment and is ultimately discharged to the ocean. IRWD joined the OCSD in order to secure backup capacity for sewage treatment and disposal as needed.

The table below (IRWD Table 4) shows the agencies that IRWD coordinates with for delivery of its excess sewage or recycled water and the role those agencies fulfill. Per CWC 10633, IRWD prepared this UWMP update in coordination with the planning agencies (cities and County of Orange) within its service area. There are no other local water, wastewater, or groundwater agencies that operate within IRWD's service area.

IRWD Table 4 – Recycled Water Coordination

Agency	Role
Orange County Sanitation District	Treat and reuse
South Orange County Wastewater Authority	Treat and reuse as demands warrant
OCWD Green Acres Project	Distribution and reuse
Santa Margarita Water District	Treat and reuse

Wastewater Collection, Treatment, and Disposal

This section summarizes the collection and treatment of wastewater generated within IRWD's service area.

IRWD has an extensive sewage collection system which serves much of its service area. IRWD collects and treats nearly all of the sewage generated within its service area. Sewage collected through IRWD's system is sent to one of two of IRWD's water recycling plants, the MWRP or LAWRP. The majority of the sewage generated in IRWD's service area is treated to disinfected tertiary recycled water standards and then used within the service area for non-potable purposes thus offsetting potable water demands.

As stated, a few small portions of IRWD's service area are not served by the MWRP or LAWRP sewage collection and treatment systems. A small percentage of sewage generated within IRWD's service area is currently collected by neighboring OCSD or SMWD where these agencies' facilities treat the sewage for subsequent reuse. Additionally, there are two small areas outside of IRWD's water service area where IRWD currently collects a small amount of sewage flows. These small flows from outside of the service area come from the City of Santa Ana and the El Toro Water District.

DWR Table 6-2 below shows total sewage collection within IRWD's service area for 2015. This data includes the volume of IRWD-collected sewage and amounts that go to other agencies for treatment and reuse.

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DWR Table 6-2: Wastewater Collected Within IRWD's Service Area in 2015

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? <i>Drop Down List</i>	Volume of Wastewater Collected from UWMP Service Area 2015	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? <i>Drop Down List</i>	Is WWTP Operation Contracted to a Third Party? (optional) <i>Drop Down List</i>
<i>Add additional rows as needed</i>						
IRWD1	Metered	22,267	IRWD	MWRP	Yes	No
IRWD	Metered	3,805	IRWD	LAWRP2	Yes	No
OCSD	Metered	7,288	OCSD	OCSD	Yes	No
SMWD	Estimated	529	SMWD	Chiquita Water Reclamation Plant	No	No
Total Wastewater Collected from Service Area in 2015:		33,890				

DWR Table 6-3 provides the volume of treated sewage either recycled or disposed of within IRWD's service area, where the treatment occurred for 2015 and the disposition of the treated water. This includes sewage that originated from outside of IRWD's service area as discussed above.

DWR Table 6-3: Wastewater Treatment and Discharge Within IRWD's Service Area in 2015

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number (optional)	Method of Disposal <i>Drop down list</i>	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level <i>Drop down list</i>	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Add additional rows as needed										
MWRP					Yes	Tertiary	22,267		20,395	
MWRP	OCSD1	OCSD			Yes			1,872		
LAWRP	Los Alisos	SOCWA Outfall & RW Distribution		Ocean outfall	Yes	Secondary, Disinfected - 2.2	3,805	1,335	2,471	
Total							26,073	3,207	22,866	0

Recycled Water System

IRWD has an extensive dual distribution system, which delivers recycled water from its two recycling treatment plants, the MWRP and the LAWRP. Treated effluent produced at both plants meets the water quality standards set forth in the California Administrative Code (CAC), Title 22, Division 4 (Title 22) for use as recycled water.

The MWRP produces high-quality recycled water that earned IRWD the first unrestricted use permit issued in the state, allowing recycled water to be used for virtually everything but

drinking. The permitted tertiary treatment capacity of the MWRP is currently 28.0 mgd. IRWD is currently constructing a biosolids digester facility at MWRP. This will allow IRWD to digest and dehydrate sludge which will then be converted to pelletized fertilizer.

IRWD also owns and operates the LAWRP, which is a separate sewage treatment system from MWRP with tertiary treatment capacity of 5.5 mgd. The Lake Forest sewer collection system consists of 105 miles of pipe and one lift station which delivers sewage to the LAWRP. Secondary effluent from the treatment plant is pumped to either the tertiary treatment facility where it is treated for reuse in IRWD's Lake Forest area recycled water distribution system. If demands for recycled water are low, it is discharged to the SOCWA pumping station which directs its flows to the SOCWA effluent transmission mains and subsequent ocean outfall.

Discharge/Use of Recycled Water

Sewage is discharged primarily due to the fact that IRWD only produces recycled water to meet recycled water demands. During winter months, irrigation demands are lower and therefore less recycled water is produced. IRWD has several seasonal storage reservoirs which store excess recycled water exists during winter months. Once the reservoirs are full, IRWD may sell excess recycled water from MWRP to the OCWD GAP project during the months from October through March. Some excess recycled water from LAWRP may be delivered to the SMWD on an as-needed and as-available basis.

IRWD supplies recycled water to its customers through a recycled water distribution pipeline system of over 500 miles. To support the over 5,400 recycled water meters that currently use approximately 30,000 AF of recycled water annually, IRWD has incorporated 15 reservoirs (3 lakes and 12 tanks) with storage capacity of 4,536 AF (1.48 trillion gallons). The following table (IRWD Table 5) lists IRWD's existing recycled water reservoirs and corresponding capacity.

IRWD Table 5 – IRWD's Recycled Water Reservoirs

Facility	Capacity
San Joaquin Reservoir (open lake)	814 million gallons
Rattlesnake Reservoir (open lake)	359 million gallons
Sand Canyon Reservoir (open lake)	250 million gallons
Zone A North Reservoir (tank)	5 million gallons
East Irvine Zone B Reservoir (tank)	5 million gallons
Coastal Zone G Reservoir (tank)	2.6 million gallons
Coastal Zone D Reservoir (tank)	5 million gallons
Northwood 5 Zone B Reservoir (tank)	5 million gallons
Zone A South Reservoir (tank)	10 million gallons
Lake Forest Zone A #2 Reservoir (tank)	2 million gallons
Lake Forest Zone B West Reservoir (tank)	7.8 million gallons
Lake Forest Zone B East Reservoir (tank)	7.8 million gallons
Lake Forest Clearwell #1	2 million gallons
Portola Springs Zone C Reservoir (tank)	2.2 million gallons
Portola Springs Zone D Reservoir (tank)	0.66 million gallons
Total	1,478 million gallons

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IRWD also supplements its recycled water system with non-potable groundwater pumped from the Basin. In the event IRWD does not have sufficient recycled water supplies to meet customer demands, IRWD can also supply the recycled water system with untreated, imported water. This water supply is introduced into the system via Irvine Lake and conveyed through IRWD's Irvine Lake Pipeline. IRWD has 19 pump stations and 13 pressure zones that serve the recycled water system.

Recycled Water Beneficial Uses

In 1967 when IRWD began sewage collection and tertiary treatment at its MWRP, the recycled water was delivered to agricultural users. IRWD later expanded recycled water use to include landscape irrigation at parks, golf courses, school grounds and play fields, community associations, open space area, and green belts. IRWD eventually made recycled water available for front and backyard irrigation at large estate-sized residential lots, toilet and urinal flushing at large commercial dual-plumbed buildings, carpet dying, composting, construction dust control, compaction, and cooling tower applications.

Water recycling is an essential component of IRWD's water supply portfolio, as any demand met with recycled water reduces the demand for high-quality drinking water. IRWD meets approximately 28% of its total demands with recycled water, thereby reducing demands for potable, imported water. The use of recycled water extends IRWD's drinking water supplies, reduces the need for additional potable water facilities, reduces the amount of treated wastewater discharged into the ocean, reduces reliance on costly imported water supplies, and increases water supply reliability. The use and expansion of recycled water will assist IRWD in providing water for future needs, while decreasing dependence on imported water. The increased use of recycled water has and will assist IRWD in its ongoing compliance with its 2020 gallons per capita per day targets.

DWR Table 6-4 below shows all current and projected recycled water uses within IRWD's service area.

DWR Table 6-4: Current and Projected Recycled Water Direct Beneficial Uses within IRWD

Beneficial Use Type		General Description of 2015 Uses	Level of Treatment <i>Drop down list</i>	2015	2020	2025	2030	2035
Agricultural irrigation			Tertiary	3,276	561	805	1,045	1,286
Landscape irrigation (excludes golf courses)			Tertiary	21,907	24,498	27,156	27,440	27,725
Golf course irrigation								
Commercial use			Tertiary	245	250	250	250	250
Industrial use			Tertiary	50	50	50	50	50
Geothermal and other energy production								
Seawater intrusion barrier								
Recreational impoundment								
Wetlands or wildlife habitat								
Groundwater recharge (IPR)*								
Surface water augmentation (IPR)*								
Direct potable reuse								
Other	Type of Use	Construction, lake filler, and dual plumbed residential	Tertiary	771				
Total:				26,249	25,359	28,261	28,786	29,311

Current and Planned Uses of Recycled Water

DWR Table 6-5 shows IRWD's actual 2015 recycled water use compared with the projected recycled water use in its 2010 UWMP.

DWR Table 6-5: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual

Use Type		2010 Projection for 2015	2015 Actual Use
Agricultural irrigation		1,500	4,013
Landscape irrigation (excludes golf courses)		23,115	27,396
Golf course irrigation			
Commercial use		250	391
Industrial use			
Geothermal and other energy production			
Seawater intrusion barrier			
Recreational impoundment			
Wetlands or wildlife habitat			
Groundwater recharge (IPR)			
Surface water augmentation (IPR)			
Direct potable reuse			
Other	Type of Use		
Total		24,865	31,800
NOTES: Commercial 2015 actual values include Industrial use as well.			

Actions to Encourage and Optimize Future Recycled Water Use

IRWD was formed in 1961 when its service area was largely undeveloped. As development occurred, IRWD worked with developers to design and construct the infrastructure to deliver recycled water to new communities. Those developers, which were responsible for constructing schools, parks, homeowner's associations, and other community facilities, designed those sites to use recycled water. As a result, most of IRWD's recycled water customers are due to new construction as compared to retrofitting existing communities. This same approach is being implemented today as IRWD connects approximately 150 new recycled water sites each year. In 1991, IRWD worked with a commercial high-rise developer to construct the first dual-plumbed commercial building in California in which recycled water is used for toilet and urinal flushing in the building. IRWD currently serves more than 65 dual-plumbed buildings including a private high school and a public middle school. There are more dual-plumbed buildings in design and construction.

In 1994, IRWD worked with a residential developer to design single-family residential property to use recycled water to irrigate the front and back yard landscaping. Today IRWD serves over 600 such properties and will ultimately serve 750 properties in this manner. IRWD also serves cooling towers, a composting operation, a carpet dyer, and construction sites, and continually seeks opportunities to further expand the distribution system to serve any state approved uses.

It is IRWD's goal to effect conservation of water resources whenever possible. IRWD collects, treats and recycles sewage for approved beneficial uses. It is IRWD's intent to provide customers with recycled water in lieu of potable water for all approved uses. IRWD has found that its customers are supportive and interested in using recycled water for landscape and industrial purposes as a reliable source of supply. Recycled water rates are lower than potable rates, which provide an incentive for customers to use recycled water. IRWD may also provide financial incentives when feasible for customers to retrofit from potable water to recycled water use.

DWR Table 6-6 shows IRWD's Methods to Expand Recycled Water Use. However, because IRWD already has a "Mandatory Use" requirement for recycled water for all new construction for landscape use, financial incentives currently only apply to retrofitting potable or other imported water connections with recycled water.

DWR Table 6-6: Methods to Expand Future Recycled Water Use

Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
<i>Add additional rows as needed</i>			
Financial Incentives for Customers	IRWD may grant or loan funds to help pay for on-site improvements to facilitate the use of recycled water.	On-Going	200
Total			200

6.6 Desalinated Water Opportunities

Law

10631(h) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater as a long term supply.

A number of sites in Southern California are currently being considered for ocean water desalination facilities. Currently, the OCWD is evaluating a proposed seawater desalination facility at a site in Huntington Beach in Orange County. The proposed project would be constructed by Poseidon Resources, a private company, and would consist of the construction and operation of a 50 mgd ocean water desalination facility. The proposed project would distribute potentially to coastal and southern Orange County retailers. The project is still pending approval from the California Coastal Commission.

IRWD is evaluating any potential impacts that proposed ocean desalinated water could have on its potable and recycled water quality. Currently, IRWD does not anticipate receiving any water from this facility; however, any water delivered to IRWD through a future ocean desalination facility would offset potable water imported through MWD.

6.7 Exchanges or Transfers

Law

10631(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

In addition to developing its local groundwater and recycled water systems, the District has diversified its water supply reliability by developing water banking projects in Kern County, California. Over the past 20 years, local water districts in Kern County have been on the forefront of the development of groundwater banking programs that benefit agencies on both sides of the storage agreements. IRWD has constructed a fully operational water banking program that makes it possible for IRWD and its banking partners to store excess water during “wet” hydrologic periods. The stored water is then available for use during “dry” periods to offset reduced water supplies under periods of severe drought or during periods of supply interruptions.

IRWD has constructed the Strand Ranch Integrated Banking Project and the Stockdale Integrated Banking Project (Water Bank). The District's Water Bank properties are situated on groundwater recharge lands that overlie the regional Kern County groundwater basin where the water is stored. Water Bank facilities provide IRWD with the ability to respond to drought conditions and other potential water supply interruptions when normal supplies may be reduced.

To operate its water bank, the District has entered into a 30-year water banking partnership with the Rosedale-Rio Bravo Water Storage District (Rosedale) in Kern County. The District's partnership program with Rosedale provides long-term equity ownership of water banking capacity rather than typical contract or lease arrangements employed by most other agencies.

Through the Water Bank facilities and agreements, IRWD has developed 135,500 AF of storage capacity, 47,800 AF of recharge capacity and 35,100 AF of recovery capacity. IRWD has entered into a Coordinated Operating and Water Exchange Agreement with MWD and MWDOC which allows IRWD to have State Water Project (SWP) water recovered from the Water Bank delivered to IRWD's service area. In 2014, IRWD and MWD entered into an agreement for transferring non-SWP water into IRWD's service area. Under this agreement, in 2015, IRWD recovered and delivered 1,000 AF of its non-SWP water to its service area. This was used July 1, 2015 through February 2016 as extraordinary supply to supplement reduced imported supplies during MWD's water supply allocation.

IRWD has also secured access to SWP supplies that can be stored in the Water Bank. IRWD acquired approximately 883 acres (the “Jackson Ranch”) located within the Dudley Ridge Water District and its associated rights of to up to 1,749 AF of SWP Table A water. Additionally, the land acquisition included certain participation rights in the Kern Water Bank to store approximately 9,500 AF of water.

In 2015, IRWD began developing additional recovery and conveyance capacity through partnership with Rosedale and Castaic Lake Water Agency (CLWA). IRWD's participation will consist of 50% of the recovery capacity of six wells and associated conveyance facilities

constructed on Rosedale property adjacent to Strand Ranch for joint use by the District and CLWA. The additional recovery will provide additional instantaneous recovery capacity to supplement IRWD's other Water Bank recovery capacities.

Since 2010, the District has delivered approximately 39,000 AF of water to the Water Bank facilities for storage for IRWD and its banking partners. The majority of this stored water was made available through a 28-year Exchange Agreement that the District has with the Buena Vista Water Storage District in Kern County and agreements with two separate State Water Project Contractors with excess SWP water. The terms of these agreements require that half of the water be returned to the originating water districts within 5 to 10 years with the balance of the water being available to the District for its use. As of June 30, 2015, IRWD has approximately 22,000 AF of water in storage at its water banking facilities and related programs. IRWD has returned all of its banking partners' stored water since 2010.

6.8 Future Water Projects

Law

10631(g)...The urban water supplier shall include a detailed description of expected future projects and programs...that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project.

IRWD is currently constructing the Baker Water Treatment Plant (WTP), a joint regional project with four other south Orange County water districts (El Toro Water District, Moulton Niguel Water District, Santa Margarita Water District and Trabuco Canyon Water District). The project will provide increased water supply reliability by increasing local treatment capability from multiple water supply sources including imported untreated water from MWD and through the local surface water in Irvine Lake. The Baker WTP is expected to be online in fall 2016, and therefore all Irvine Lake surface water will be treated for potable use and will no longer be a supplemental recycled water supply.

IRWD all plans to pursue the development of additional groundwater facilities in the Basin and Subbasins to serve future potable demands. These groundwater supplies are considered to be under development. IRWD projects that new groundwater production would be developed to be online to meet potable demands by the year 2025.

DWR Table 6-7 below shows IRWD's expected future projects and the anticipated increase in water supply. These water supplies are expected to be available under all scenarios normal, single-dry and multiple-dry years.

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DWR Table 6-7: Expected Future Water Supply Projects or Programs

Name of Future Projects or Programs	Joint Project with other agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type <i>Drop Down List</i>	Expected Increase in Water Supply to Agency <i>This may be a range</i>
	<i>Drop Down List (y/n)</i>	<i>If Yes, Agency Name</i>				
<i>Add additional rows as needed</i>						
Baker Water Treatment Plant	Yes	Multiple Agencies		2016	All Year Types	6,858
Future Groundwater Production	No			2025	All Year Types	12,352

6.9 Summary of Existing and Planned Sources of Water

Law

10631(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in the subdivision 10631(a).

10631(b)(4) Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

DWR Table 6-8 below provides the actual source and volume of potable and non-potable water used for the year 2015. DWR Table 6-8 does not represent IRWD's total groundwater supply capabilities or total connected delivery capacity through MWD and MWDOC. DWR Table 6-9 below provides total projected supply capacities expected to be available to IRWD through 2035. These future available water supply projections are based on historical groundwater production, planned future supply projects, as well as information from MWD and MWDOC's 2015 UWMPs.

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DWR Table 6-8: Water Supplies - Actual

Water Supply	Additional Detail on Water Supply	2015		
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool		Actual Volume	Water Quality Drop Down List	Total Right or Safe Yield (optional)
Add additional rows as needed				
Purchased or Imported Water	MWD	12,790	Drinking Water	
Purchased or Imported Water	MWD	5,906	Raw Water	
Surface water	Irvine Lake	2,826	Raw Water	
Groundwater		46,770	Drinking Water	
Groundwater	Non-potable	4,063	Recycled Water	
Recycled Water	MWRP & LAW RP	22,866	Recycled Water	
Total		95,220		0

DWR Table 6-9: Water Supplies - Projected

Water Supply	Additional Detail on Water Supply	Projected Water Supply <i>Report To the Extent Practicable</i>							
<i>Drop down list</i> <i>May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool</i>		2020		2025		2030		2035	
		Reasonably Available Volume	Total Right or Safe Yield <i>(optional)</i>	Reasonably Available Volume	Total Right or Safe Yield <i>(optional)</i>	Reasonably Available Volume	Total Right or Safe Yield <i>(optional)</i>	Reasonably Available Volume	Total Right or Safe Yield <i>(optional)</i>
<i>Add additional rows as needed</i>									
Purchased or Imported Water	Potable	41,929		41,929		41,929		41,929	
Groundwater	Potable	53,171		65,523		65,523		65,523	
Purchased or Imported Water	Untreated	17,826		17,826		17,826		17,826	
Recycled Water		28,757		28,757		28,757		28,757	
Groundwater	Nonpotable	3,514		3,514		3,514		3,514	
Total		145,197	0	157,549	0	157,549	0	157,549	0

7. WATER SUPPLY RELIABILITY ASSESSMENT

Law

10631(c)(2) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

10631(c)(1) Described the reliability of the water supply and vulnerability to seasonal or climate shortage, to the extent practicable, and provide data for each of the following: an average year, a single dry water year, and multiple dry water years.

10634 The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

10620(f) Describe water management tools and options to maximize resources and minimize the need to import water from other regions.

IRWD's water supply management efforts are aimed at maximizing the efficient use of existing supplies to assure adequate supplies will be available to meet future water demands. Under IRWD's supply model, adequate supplies exist to meet demands. IRWD's supplies remain essentially constant between normal, single-dry and multiple-dry years. This is due to the fact that groundwater and imported water account for all of IRWD's potable supply, and recycled water, groundwater and imported water comprise nearly all of IRWD's non-potable supply (See also Chapter 6).

7.1 Water Quality

It is IRWD's top priority to provide customers with safe, high quality drinking water. IRWD's drinking water is safe and meets or exceeds all quality standards set by both the state and federal government. IRWD's water quality staff continuously monitors the water supply, conducting over a quarter of a million laboratory tests each year from water taken from over 100 sample points throughout the District. IRWD owns and operates a state-of-the-art Water Quality Laboratory that is state certified and one of the best equipped water laboratories in Southern California. IRWD produces an informative Annual Water Quality Report for its customers. The Water Quality Report provides information on the source of the water, water testing results and how water quality compares with regulatory standards. Additionally, the report answers commonly asked questions about water quality.

Per MWD's 2015 UWMP, MWD has reviewed and addressed its concerns of water quality in its water management programs. MWD responds to water quality concerns by concentrating on protecting the quality of the source water and development of water management programs that maintain and enhance water quality. Contaminants that cannot be sufficiently controlled through protection of source waters are handled through changed water treatment protocols or blending.

These practices can increase the costs and or reducing operating flexibility and safety margins. In addition, MWD has developed enhanced security practices and policies in response to national security concerns. (MWD's 2015 UWMP).

IRWD has not experienced and does not foresee any constraints to its water supplies or water supply capacities resulting from water quality impacts.

7.2 Reliability by Type of Year

Law

10631(c)(1). Describe the reliability of the water supply and vulnerability to seasonal or climatic shortages, to the extent practicable, and provide data for each of the following: (A) an average water year, (B) a single dry water year, (C) multiple dry water years.

10635(a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional or local agency population projections within the service area of the urban water supplier.

As mentioned, as a sub-member agency of MWD under MWDOC, IRWD is aware of current and future imported water challenges and IRWD has worked to diversify its water supplies to reduce dependency on imported water. IRWD's water resources program relies on further maximizing local resources to meet demands through increased recycled water use, increased groundwater development, groundwater treatment, conservation and groundwater banking opportunities.

Discussed further below under "Groundwater Management" and also in Chapter 6, OCWD has made substantial investment in facilities, Basin management and water rights protection and OCWD continues to develop new replenishment supplies, recharge capacity and basin protection measures to meet projected production from the Basin during normal and drought periods.

Imported water supplies will remain a source of supplemental supply for IRWD, as well as redundancy supply in the event of shutdowns or local outages. As to IRWD's assessment of the reliability of imported water, MWD's 2015 UWMP shows that MWD has sufficient supply capabilities to meet expected demands from 2020 through 2040 under a repeat of the 1990-1992 multiple dry-year hydrology and the 1977 single dry-year hydrology. MWD's reliability is further discussed below under "Imported Water Management".

IRWD's recycled water production also remains constant, and is considered "drought-proof" as a result of the fact that sewage flows remain virtually unaffected by dry years. Only a small portion of IRWD's supply, native water captured in Irvine Lake, is likely to be affected by single dry and multiple dry years.

Based on its diversified water supply portfolio, IRWD finds that its supplies have remained essentially constant between normal, single-dry and multiple dry years. Based on IRWD's assessment of its available water supplies and the historic reliability of these supplies, IRWD finds that it will be reliable under single-dry and multiple dry years. IRWD utilizes the same bases of water years from MWD's 2015 UWMP to represent past dry period through 2025. This includes a repeat of the 1990-1992 multiple dry-year hydrologies and the 1977 single dry-year hydrology. IRWD's average water year hydrology is represented by 2012.

DWR Table 7-1 below "Bases of Water Year Data" lists the years that IRWD uses as its historical average, single driest year, and driest multiple year period.

DWR Table 7-1: Basis of Water Year Data

Year Type	Base Year <i>If not using a calendar year, type in the last year of the fiscal or water year, for example, water year 1999-2000, use 2000</i>	Available Supplies if Year Type Repeats	
		☐	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		☐	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year	2012	135097	100%
Single-Dry Year	1977	131097	98%
Multiple-Dry Years 1st Year	1990	131097	98%
Multiple-Dry Years 2nd Year	1991	131097	98%
Multiple-Dry Years 3rd Year	1992	131097	98%
Multiple-Dry Years 4th Year <i>Optional</i>			
Multiple-Dry Years 5th Year <i>Optional</i>			
Multiple-Dry Years 6th Year <i>Optional</i>			

The following DWR Tables 7-2, 7-3 and 7-4 include IRWD's quantification of its available supplies and demand for the various types of years. DWR Table 7-2 records the data for a normal year hydrology. IRWD's supplies reported in DWR Table 7-2 are the same as reported in DWR Table 6-9 (Retail Water Supplies Projected). DWR Table 7-2 includes IRWD's supply capacities that can reasonably be relied upon to meet demands in a normal year hydrology. IRWD has made conservative estimates of annual imported supplies based on connected delivery capacity and additional supplies are expected to be available from these sources, based on legal entitlements, historical uses and information provided by MWD. Information provided by MWD

in its 2015 UWMP, as the imported water supplier, concerning the adequacy of its regional supplies, demonstrates MWD’s inclusion of reserves in its regional supply assessments.

In addition, IRWD expects that the development and completion of IRWD’s future planned groundwater water supplies will be required to meet IRWD’s annual projected demands in the year 2035 and beyond. These future planned projects are discussed in Chapter 6. IRWD subscribes to prudent water supply and financial planning and plans the development of new supplies to be phased over time consistent with the growth in IRWD’s demands.

DWR Table 7-2: Normal Year Supply and Demand Comparison

	2020	2025	2030	2035
Supply totals (autofill from Table 6-9)	145,197	157,549	157,549	157,549
Demand totals (autofill from Table 4-3)	96,445	105,961	109,431	111,277
Difference	48,752	51,588	48,118	46,272

IRWD’s projected normal water demands as shown in DWR Tables 4-3 and 7-2 reflect IRWD’s estimated expected demands under normal hydrologic conditions (precipitation). Lower levels of precipitation and higher temperatures can result in higher water demands, due primarily to the need for additional water for irrigation. To reflect this, IRWD’s base (normal) water demands are increased 7% during both “single-dry” and “multiple-dry” years. This is consistent with IRWD’s 2010 UWMP and historical regional demand variation as documented in MWD’s Integrated Regional Plan (1996) (Volume 1, page 2-10). This increase in estimated demands is also consistent with MWDOC’s 2015 UWMP which assumes increased demands in single dry and multiple dry years of 6% based on MWDOC’s OC Reliability Study (MWDOC 2015 UWMP).

The following DWR Tables 7-3 and 7-4 show IRWD’s estimated single dry and multiple dry year supplies and demands for the 20 year planning horizon. These projections reflect IRWD’s estimated 7% increase in demands under these hydrologic conditions.

DWR Table 7-3: Single Dry Year Supply and Demand Comparison

	2020	2025	2030	2035
Supply totals	142,197	154,549	154,549	154,549
Demand totals	103,195	113,378	117,091	119,066
Difference	39,002	41,171	37,458	35,483

DWR Table 7-4: Multiple Dry Years Supply and Demand Comparison

		2020	2025	2030	2035
First year	Supply totals	142,197	154,549	154,549	154,549
	Demand totals	103,195	113,378	117,091	119,066
	Difference	39,002	41,171	37,458	35,483
Second year	Supply totals	142,197	154,549	154,549	154,549
	Demand totals	103,195	113,378	117,091	119,066
	Difference	39,002	41,171	37,458	35,483
Third year	Supply totals	142,197	154,549	154,549	154,549
	Demand totals	103,195	113,378	117,091	119,066
	Difference	39,002	41,171	37,458	35,483

The resulting difference in IRWD’s supply and demand comparisons as shown in DWR Tables 7-2, 7-3, and 7-4 show quantities of “reserve” water supplies (excess of supplies over demands). These excess supplies are expected to be available for IRWD to serve as a buffer against inaccuracies in demand projections, future changed in land use, or alterations in supply availability.

7.3 Regional Supply Reliability

Imported Water

MWD, the regional wholesale agency, manages the imported water supplies delivered to IRWD. MWD’s policies and practices that maximize the efficient use of supplies are addressed in MWD’s 2015 UWMP update. The details of the regional coordination and operation of the water supply during a drought are included in both MWD’s and MWDOC’s 2015 UWMPs. MWD’s policies and practices that maximize the efficient use of supplies are addressed in MWD’s 2015 UWMP and its Integrated Resource Plan (IRP) Update in 2015, and the Water Surplus and Drought Management Plan (WSDM). MWD’s UWMP summarizes these efforts and provides information concerning the availability of the supplies to its entire service area.

In 1996, MWD completed its IRP to establish regional targets for the development of water resources and a preferred resource mix which would ensure MWD would meet the region’s present and future needs for dependable supplies without interruption through 2025. In 2004 MWD completed an IRP Update with three objectives 1) to review the goals and achievements of the 1996 IRP, 2) to identify changed conditions for water resource development and 3) to update the resource targets through 2025. It calls for investments in water conservation, recycled, groundwater treatment, storage and water transfers to enhance supply reliability, flexibility and diversity.

In the 2015 IRP Update, MWD identified changes to the long-term plan and established direction to address the range of potential changes in water supply planning. The IRP also discusses dealing with uncertainties related to impacts of climate change, as well as actions to protect endangered fisheries. The Findings and Conclusions in the MWD 2015 IRP Update state that MWD's reliability goal that full-service demands at the retail level will be satisfied for all foreseeable hydrologic conditions remains unchanged. MWD will accomplish this through its core resources strategies. The 2015 IRP Update emphasizes an evolving approach and suite of actions to address the water supply challenges that are posed by uncertain weather patterns, regulatory and environmental restrictions, water quality impacts and changes in the state and the region. MWD's Adaptive Resource Management Strategy includes three components: Core Resources Strategy, Supply Buffer Implementation and Foundational Actions which together provides the basis for the 2015 IRP Update. The 2015 IRP Update expands the concept of developing a planning buffer from the 2004 IRP Update by implementing a supply buffer equal to 10 percent of the total retail demand. MWD will collaborate with its member agencies to implement this buffer through compliance with Senate Bill 7 which calls for the state to reduce per capita water use 20 percent by the year 2020.

Estimates of demands on MWD for the 2015 UWMP were derived by first estimating the total retail demands for the region and then factoring in impacts of conservation. MWD also uses projections of local supplies and expected local supply programs to arrive at its total demands. MWD estimates demands for single dry year, multiple dry years and average years. MWD's 2015 UWMP and IRP Update summarizes the reliability analyses which demonstrate that MWD can maintain reliable supplies under conditions that have existed in past dry periods throughout the period 2015 through 2035.

MWD performs water shortage planning in its WSDM Plan which guides MWD's planning and operations during both shortage and surplus conditions. Furthermore, MWD developed the Water Supply Allocation Plan (WSAP) (February 2009, updated December 2014) which provides a standardized methodology for allocation of MWD's supplies during times of shortage. The WSDM Plan distinguishes between shortages, severe shortages and extreme shortages. These terms have specific meanings relating to MWD's ability to deliver water and the actions it takes. In June 2008, MWD's Board adopted a Water Supply Condition Framework to communicate the urgency of the region's water supply situation and the need for further water conservation to reduce regional demands, MWD uses the WSDM Plan and Framework to determine if a WSAP is recommended.

On April 14, 2015, MWD approved the implementation of its WSAP at a level 3 Regional Shortage Level and an effective 15% reduction in regional deliveries effective July 1, 2015, through June 30, 2016. As a result of IRWD's diversified water supplies, IRWD is only reliant on MWD for about 20% of its total supplies. As discussed in Chapter 6 "Exchanges or Transfers", in 2014, IRWD and MWD entered into an agreement for transferring some of IRWD's banked water into IRWD's service area. In 2015 just prior to MWD's effective WSAP date, IRWD recovered and delivered 1,000 AF of its non-SWP water to its service area which was used as extraordinary supply to supplement reduced imported supplies during MWD's WSAP. IRWD made use of this water starting July 1, 2015 through February 2016.

Generally, under shortage scenarios, IRWD may need to supplement supplies with production of groundwater, which can exceed the applicable basin production percentage on a short-term basis, providing additional reliability during dry years or emergencies. In addition, IRWD can also recovery and deliver supplemental water stored in its water banking projects in Kern County, California, to IRWD's service area under a short-term MWD allocation. IRWD may also convert non-potable demands served by potable water to recycled water as a way to conserve potable water.

Groundwater Supply

As discussed in Chapter 6, OCWD's planning documents examine future Basin conditions and capabilities, water supply and demand, and identified projects to meet increased replenishment needs of the Basin. With the implementation of OCWD's preferred projects in its Long Term Facilities Plan, OCWD expects the Basin yield in the year 2035 to be increased. The amount that can be produced will be a function of which projects will be implemented by OCWD and how much increased recharge capacity is created by those projects, total demands by all producers, and the resulting basin pumping percentage that OCWD sets based on these factors. (see also Chapter 6).

Replenishment supplies for the Basin include capture of increasing Santa Ana River flows, purified recycled water, purchases of replenishment water from MWD, and expansion of local supplies. OCWD's Groundwater Replenishment System (GWRS) is OCWD's recycled water purification system that has been in operation since 2008. Wastewater is purified using a three-step process to produce high-quality water used to recharge the Basin and for injection into the seawater intrusion barrier. The GWRS was expanded in 2015 from 72,000 AF per year to 100,000 AF per year.

OCWD is required annually to investigate the condition of the Basin, assess overdraft and accumulated overdraft, and determine the amount of water necessary for replenishment. The Basin is managed to allow utilization of up to 500,000 AF of storage capacity of the basin during dry periods, acting as an underground reservoir and buffer against drought. OCWD operates the basin to keep the target dewatered basin storage at 200,000 AF as an appropriate accumulated overdraft. Overdraft varies over time as the Basin is managed to keep it in balance over the long term. Within the Basin, production of groundwater can exceed applicable basin production percentages on a short-term basis, providing additional reliability during dry years or emergencies.

Non-Potable Water Management

Recycled water has proven to be an effective "drought-proof" reliable supply as a result of the fact that sewage flows remain virtually unaffected by dry years. As mentioned, IRWD expanded the MWRP in 2014, to provide additional recycled water as demands and sewage flows increase in the future.

As with the potable system, having several sources of supply provides reliability in the recycled water system. Those sources include recycled water from the MWRP and LAWRP, untreated

water from MWD, local runoff and some local groundwater. Reliability is further enhanced by seasonal storage capacity in Rattlesnake Reservoir, Sand Canyon Reservoir, San Joaquin Reservoir, Syphon Reservoir, and Irvine Lake.

Currently only a small portion of IRWD's non-potable supply, native water captured in Irvine Lake, is reduced in single-dry and multiple-dry years. Given the dependence of native water on rainfall for Irvine Lake, for purposes of water supply reliability, only a small portion of IRWD's share of 28,000 AFY of native water rights (4,000 AFY in normal years and 1,000 AFY in dry years) is shown in available supplies, based on averaging of historical data. As discussed in Chapter 6, IRWD is currently constructing the Baker Water Treatment Plant (WTP), a joint regional project with four other south Orange County water districts (El Toro Water District, Moulton Niguel Water District, Santa Margarita Water District and Trabuco Canyon Water District). The project will provide increased water supply reliability by increasing local treatment capability from multiple water supply sources including imported untreated water from MWD and through the local surface water in Irvine Lake. The Baker WTP is expected to be online in fall 2016, and therefore all Irvine Lake surface water will be treated for potable use and will no longer be a supplemental recycled water supply.

8. WATER SHORTAGE CONTINGENCY PLANNING

Law

10632 (a) The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

10632 (a) (1) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.

10632 (a) (2) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year sequence for the agency's water supply.

10632 (a) (3) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

10632 (a) (4) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

10632 (a) (5) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

10632 (a) (6) Penalties or charges for excessive use, where applicable.

10632 (a) (7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), inclusive, on the revenues and expenditures of the urban water suppliers, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

10632 (a) (8) A draft water shortage contingency resolution or ordinance.

10632 (a) (9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

10632 (b) Commencing with the urban water management plan update due July 1, 2016, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

Health and Safety Code Section 115921

As used in this article the following terms have the following meanings:

(a) “Swimming pool” or “pool” means any structure intended for swimming or recreational bathing that contains water over 18 inches deep. “Swimming pool” includes in-ground and aboveground structures and includes, but is not limited to, hot tubs, spas, portable spas, and non-portable wading pools.

8.1 Stages of Action

IRWD’s response to inadequate water supply varies depending on the magnitude and duration of the shortfall. In the event of a water shortage situation, IRWD would rely on its Water Shortage Contingency Plan (WSCP), which was most recently revised and adopted in October 2014, and is included in Appendix G. IRWD is currently preparing an updated WSCP, which is anticipated to be completed in 2016.

The WSCP provides guidelines for responses to varying levels of supply shortages ranging from Level 1 to Level 4, as shown in the following DWR DWR Table 8-1. The WSCP includes actions that can be implemented to reduce demands down to specific levels in accordance with reduced supply availability. The stages of action identified in the WSCP have been included in IRWD’s Rules and Regulations (Section 15) which states,

“The measures may be applied individually or in combination and may vary according to the severity and duration of the shortage. Other measures may be applied in lieu of or in addition to those described in the WSCP.”

Stages of the WSCP are enacted at the direction of IRWD’s Board of Directors depending on the level and duration of the water shortage. The Board evaluates water supply conditions and, if it determines that a shortage exists, declares the corresponding level of the WSCP. As part of the declaration, it is at the discretion of the Board to implement specific water shortage restrictions, prohibitions, and demand management measures. In addition, the WSCP also contains basic measures that are always in effect, which are considered by IRWD to be good water management practices. These basic measures are also defined in IRWD’s Rules and Regulations (Section 15). Additional details corresponding to each of the Levels are provided in the following paragraphs.

Basic Measures Always in Effect

There are five basic measures that are always in effect in IRWD’s service area, which are listed below:

- Inform the public consciousness in order to help reduce water demand
- Prevention of irrigation run-off and water waste
- Leak prevention
- Ban on washing down hard or paved surfaces, except when necessary to alleviate safety or sanitary hazards
- Ban on wasting water

In addition, IRWD has a budget-based rate structure that is based on the cost of service, which also limits the amount of water allocated to each customer to an amount that is reasonable for the customer’s needs and property characteristics, reducing wasteful use of water.

Level 1: Shortage Warning

Level 1 is a shortage warning and low-level shortage condition intended to address supply reductions of up to 10%. Measures selected under this level would be designed to achieve the following objectives:

- Increase public awareness of water supply situation and conservation opportunities
- Encourage diligent repair of water leaks
- Reduce over-budget water use
- Reduce outdoor over-irrigation

The measures used in Level 1 are primarily voluntary actions that modify customer behavior resulting from an enhanced public awareness campaign. In addition, increased outreach is targeted toward customers that use water in excess of water budget amounts, to help them identify the source of their overuse, and correct the problem should be sufficient to meet the objectives in Level 1.

Level 2: Significant Shortage Condition

Level 2 is a significant shortage condition intended to address supply shortages between 10-25%. Measures selected under Level 2 would be designed to incorporate the objectives listed under Level 1, and achieve the following further reductions in use:

- Review of water budgets and potential adjustments to reduce outdoor irrigation and agricultural uses by 30%, or a percentage to be specified in the shortage declaration, based on a supply and demand analysis
- Discourage filling of fountains, pools, and water features and other discretionary uses

The use of water budgets and tier threshold adjustments is expected to be sufficient to achieve the necessary demand reduction objectives in a Level 2 shortage. Adjustments to the water budgets would employ the demand management/water budget adjustment strategies described in detail in Appendix G.

Level 3: Severe Shortage Condition

Level 3 is a severe shortage condition intended to address supply shortages ranging from 25-40%. Measures selected under Level 3 would be designed to incorporate the objectives listed under Level 2, and achieve the following further reduction in use:

- Further reductions in and/or eliminations of non-essential uses
- Further reduce outdoor irrigation and agricultural uses by 60% or a percentage to be specified in the shortage declaration, based on analysis of supply and demand
- Reduction in CII use by 10%, or a percentage to be specified in the shortage declaration, based on an analysis of supply and demand
- Elimination of specific municipal uses such as street cleaning, hydrant flushing, water-

based recreation, etc.

- Activation of an IRWD Task Force to investigate and consult with high-volume users (i.e. public authorities, universities, community associations, etc.) to assist in reducing the water demands of their properties

Level 4: Crisis Shortage Condition

Level 4 is a crisis shortage condition occurring when supply shortages exceed 40%; this level would address a 50% reduction in water supply. Measures selected would be designed to incorporate the objectives under Level 3, and achieve the following further reductions in use:

- Cease all outdoor water uses for landscape and agriculture, subject to reserved rights relating to local wells

A Level 4 shortage would likely require further adjustments to water budgets and the use of all Demand Management/Budget-Based Rates strategies described in Part II of the WSCP at the discretion of the Board. In addition, the Board may determine that it is necessary to use mandatory restrictions and possible discontinuation of non-health and safety related service in order to achieve the necessary demand reductions in a Level 4 shortage.

DWR Table 8-1: Stages of Water Shortage Contingency Plan

Stage	Complete Both	
	Percent Supply Reduction ¹ <i>Numerical value as a percent</i>	Water Supply Condition <i>(Narrative description)</i>
<i>Add additional rows as needed</i>		
1	Up to 10%	Level 1: Shortage warning/low level shortage
2	10-25%	Level 2: Significant shortage condition
3	25-40%	Level 3: Severe shortage condition
4	Greater than 40%	Level 4: Crisis shortage condition
¹ One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.		
NOTES: Stage 4 covers a water shortage condition of 50%		

8.2 Recent Enactment of IRWD's WSCP

As a result of low precipitation levels in California since 2012, on January 17, 2014 the Governor proclaimed a Drought State of Emergency, which, among other things asked all Californians to reduce water consumption by 20%. In September 2014 IRWD's Board responded to the drought and the Governor's State of Emergency by declaring a Level 1 Shortage Warning. In response to worsening drought conditions, on April 1, 2015 the Governor issued an Executive Order that mandated a 25% statewide reduction in urban potable water use compared to 2013 water use levels. For IRWD, the State Water Resources Control Board (State Board) mandated a water use reduction target of 16% compared to 2013 levels, entering into effect on May 5, 2015. In July 2015, IRWD's Board of Directors Adopted Resolution No. 2015-18, provided in Appendix H, declaring a Level 2 Shortage Condition aimed at reducing demands by 10-25% in response to the State Board's mandate.

The Level 2 Shortage Condition incorporated all of the basic measures that are always in effect, Level 1 measures, and Level 2 measures. The specific Level 2 response measures that went into effect in July 2015 include:

- Customers shall reduce potable landscape watering by up to 50 percent;
- Swimming pools shall be filled to a lower level to minimize water loss due to splashing.
- Discretionary maintenance requiring refilling of swimming pools shall be prohibited. Filling newly constructed pools and refilling pools for required, non-discretionary maintenance are not subject to the ban;
- Commercial conveyor and in-bay car wash systems must reuse water if equipped to do so;
- Recycled water shall be required for construction activities, including earthwork, dust control and clean-up. IRWD may, at its discretion, waive this requirement if it can be demonstrated to IRWD's satisfaction that compliance with the requirement imposes undue hardship;
- The use of recycled water is required for street sweeping activities. IRWD may, at its discretion, waive this requirement if it can be demonstrated to IRWD's satisfaction that compliance with the requirement imposes undue hardship;
- Common interest associations shall not fine or assess owners of separate interests for reducing or eliminating the watering of vegetation or lawns, unless the association uses only recycled water for irrigation of the association's common areas and recycled water is also available at the irrigated area of the separate interest; and
- IRWD, by separate action, shall implement demand management measures through adjustments in the budget-based pricing structure (on June 22, 2015, the Board adopted No. 2015-17 implementing such adjustments).

8.3 Catastrophic Supply Interruption Plan

IRWD's response to a catastrophic interruption of water supply would depend on the cause, severity and anticipated duration of the emergency. Any potential shortage resulting in a reduction of available supplies can be addressed through a combination of alternative supplies and storage. Since IRWD's major potable water sources include both imported water (including

IRWD's groundwater banking) and local groundwater, it is unlikely that both sources would be out simultaneously.

Since IRWD does not operate a regulating reservoir to meet seasonal variations in water demand, IRWD's policy is to supply the maximum daily potable demand, thus meeting the worst case demand scenario. Daily fluctuations are met by local storage within the distribution system.

Interruption in Imported Supplies

Interruption in source water deliveries to IRWD could occur as a result of a planned outage or emergency source outage. To plan for an outage, MWD member agencies reference the planning criteria from MWD's Administrative Code for member agency outage. As part of planning for an outage, each member agency including the MWDOC, IRWD's MWD-member agency, should have a seven-day supply of water in case of an interruption of MWD deliveries.

IRWD is currently completing an updated system reliability study. The intent of the updated water reliability study is to assist IRWD in defining appropriate levels of potable water reliability under different water supply and demand scenarios. The study includes an analysis of how imported water supply shortages, climate change, facilities constraints and outages, and emergencies could affect IRWD's ability to deliver water to its customers. Once completed, information from the reliability study will be used to inform IRWD's 2016 update to its WSCP.

Water Banking

IRWD's water resources reliability program relies on diversifying water supplies which includes the development of water banking facilities to provide a contingency, supplemental supply for extended drought or supply interruptions when imported supplies may be restricted. As described more fully in Section 6.7, IRWD has constructed a fully operational water banking program that makes it possible for IRWD and its banking partners to store excess water during "wet" hydrologic periods. The stored water is then available for use during "dry" periods to offset reduced water supplies under periods of severe drought or during periods of supply interruptions.

In 2015, IRWD was able to demonstrate the reliability benefits of its water banking program as discussed in Chapter 6 under "Imported Water Management". On April 14, 2015, MWD approved the implementation of its WSAP at a level 3 Regional Shortage Level and an effective 15% reduction in regional deliveries effective July 1, 2015, through June 30, 2016. Prior to the WSAP implementation, in 2014, IRWD and MWD entered into an agreement for transferring some of IRWD's banked water into IRWD's service area. IRWD was able to recover and deliver 1,000 AF of its non-SWP water to its service area which was used as extraordinary supply to supplement reduced imported supplies during MWD's WSAP. IRWD made use of this water starting July 1, 2015 through February 2016. As of June 30, 2015, IRWD has approximately 22,000 AF of water in storage through its water banking program.

Baker Water Treatment Plant

The 28.1 mgd Baker Water Treatment Plant is a joint regional project by five South Orange County water districts, including IRWD. The project will provide increased reliability by increasing local treatment capacity and providing the opportunity to treat local raw water from Irvine Lake. The project will mitigate potential impacts from MWD's extended shutdowns of treatment plants or treated water delivery lines.

Service Area Interties

IRWD has existing interties between its Lake Forest service area and its main service area, which provide a positive service delivery benefit by increasing the sources of supply of water and the opportunities to share and expand the use of recycled water. The interties provide expanded opportunities to increase regional facility operational efficiency and reliability by opening existing "emergency" interconnections on a regular basis to increase access to water supply and allocating reservoir storage to support all systems, thereby allowing flexibility of water operations and reducing the need for redundant storage capacity.

On an inter-county basis, IRWD has emergency water interconnections with several neighboring water suppliers providing a means to exchange and transfer water between agencies. Currently, IRWD has 23 interconnections: four with City of Newport Beach; one with East Orange County Water District; two with Santa Margarita Water District; one with Trabuco Canyon Water District; one with the City of Tustin; four with Mesa Consolidated Water District; six with the City of Orange; one with the City of Costa Mesa; and three with El Toro Water District.

IRWD is also a member of the Water Emergency Response Organization of Orange County (WEROC) and the State Emergency Management System (SEMS). IRWD personnel have been cross-trained in emergency planning for water, wastewater and recycled water systems. In the potable water system, there will be access to multiple sources of supply and storage facilities. Existing "emergency" interconnections can be opened to regular service, which will increase access and reliability of water supply. Reservoir storage can be allocated to cross support all systems, which will increase reliability and flexibility of water operations and reduce the need for redundant storage capacity.

IRWD plans for and responds to emergency incidents, including power outage, earthquakes, fires, floods and hazardous materials incidents. IRWD Table 6 below provides a summary of actions in response to possible catastrophes, which are intended to minimize the impacts of a water supply interruption on IRWD's service area.

IRWD Table 6: Preparation Actions for a Catastrophe

Possible Catastrophe	Summary of Actions
Regional power outage	Request information from So. Cal Edison on estimated down time; if backup generation is available assess ability to supply fuel for extended periods; estimate potable water requirements under emergency condition and determine if needs can be met; increase disinfectant residual as a precaution of potential contamination; notify affected users; issue "Boil Water" or "Do Not Drink" orders as needed; initiate back up portable pumping equipment as needed to serve areas of limited storage. Notify customers, media, state and local authorities if service is disrupted or significant demand management is necessary.
Earthquake	Activate Emergency Operations Center (EOC); Contact emergency assistance (local police, local fire) as necessary; notify customers, media, state and local authorities if service is disrupted or significant demand management is necessary; contact neighboring water agencies for mutual aid arrangements and open connections if needed. Issue "Boil Water" or "Do Not Drink" orders as needed.
Flood	Contact local representative of National Weather Service for information on exact location and probable extent (stage) of flooding relative to utility facilities. Activate EOC; elevate in-place or remove water-sensitive equipment; assemble mobile stand-by generators and auxiliary water pumps; install sewer backflow valves; notify neighboring utilities of emergency response support if help needed; notify customers, media, city and other authorities that service may be disrupted or that demand reductions may be necessary.
Water Supply Interruption	Depending on the percentage of water reduction needed after accounting for potential mitigation from the Baker Water Treatment Plant (i.e. 5% to 50%) IRWD will institute its water prohibitions within its water shortage contingency plan. Take action to provide alternate drinking water supply and fire protection, including local interconnections with neighboring sources, area water haulers, temporary storage options, etc. Chlorine residuals increased temporarily as needed. Valve off portions of the distribution system until above ground storage tanks are refilled. Issue "Boil Water" or "Do Not Drink" orders as needed.
Structural damage from explosive device	Perform damage assessment, determine how damage affects the system; isolate damaged area from rest of system and take measures to bypass damaged area. Based on extent of damage consider alternative treatment schemes if necessary. Physically secure system and implement security procedures throughout the system. Notify local law enforcement and Department of Health Services (DHS). Issue "Boil Water" or "Do Not Drink" orders as needed.
Threat of or possible contamination to water system	Notify local law enforcement and DHS; take actions to isolate portions of system containing suspect water; issue "Boil Water" or "Do Not Drink" orders as needed; take action to provide alternate drinking water supply and fire protection.

8.4 Mandatory Prohibitions

Certain prohibitions contained in IRWD's Rules and Regulations (Section 15) are in effect at all times regardless of whether any declared shortage condition is in effect. IRWD further defines mandatory restrictions and prohibitions in its WSCP based on declared water shortage level as indicated in the following DWR Table 8-2.

2015 URBAN WATER MANAGEMENT PLAN
IRVINE RANCH WATER DISTRICT

DWR Table 8-2: Restrictions and Prohibitions on End Uses

Stage	Restrictions and Prohibitions on End Users	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
Ongoing	Other	Gutter flooding - No water shall be allowed to run or escape from property if it can be prevented	Yes
Ongoing	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	No person shall permit leaks of water that he has the authority to eliminate	Yes
Ongoing	Other - Prohibit use of potable water for washing hard surfaces	Including by not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys	Yes
Ongoing	Other	No person shall cause or permit water under his control to be wasted	Yes
Ongoing	Other	Potable water shall not be used for single-pass cooling	Yes
Ongoing	Water Features - Restrict water use for decorative water features, such as fountains	Non-recirculating fountains and water features using potable water shall not be used	Yes
1	Other	No person shall use a hose to wash a motor vehicle, except when the hose is fitted with a shut-off nozzle	Yes
2	Other water feature or swimming pool restriction	No person shall drain and re-fill a pool for discretionary maintenance that can be deferred	Yes
2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Each customer shall survey plumbing every two months and eliminate water loss resulting from leaky plumbing fixtures	Yes
2	Other	Each person is encouraged to restrict showers to five minutes or less; fill the bath tub no more than one-quarter full	Yes
2	Other	Customers are encouraged to refrain from running water unnecessarily	Yes
2	Other	Customers are encouraged to run only full loads of laundry and dishes	Yes
2	Landscape - Prohibit certain types of landscape irrigation	Customers shall reduce potable landscape watering by up to 50%.	Yes
2	Other water feature or swimming pool restriction	Customers shall fill swimming pools to a lower level to minimize water loss due to splashing	Yes

2015 URBAN WATER MANAGEMENT PLAN
IRVINE RANCH WATER DISTRICT

Stage	Restrictions and Prohibitions on End Users	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
2	Other	Commercial conveyor and in-bay car wash systems must reuse water if equipped to do so, and shall repair and maintain the equipment in a manner that allows for the operation of the reuse system	Yes
2	Other	The use of recycled water shall be required for construction activities	Yes
2	Other	The use of recycled water is required for street sweeping activities	Yes
2	Other	No fines will be assessed by common interest developments associations for reducing or eliminating the watering of vegetation or lawns with potable water	Yes
4	Landscape - Prohibit all landscape irrigation	Ban outdoor irrigation with potable supplies	Yes
4	Other	Ban on car-washing	Yes
4	Other water feature or swimming pool restriction	Ban pool filling	Yes

8.5 Consumption Reduction Methods

IRWD recognizes that it is best to caution of a water shortage as early as possible, at a minimal level, to encourage voluntary rationing and to gain public support and participation, and reduce the likelihood of more severe shortage levels later. Responses to water shortages must be made early on to prevent severe rationing and economic impacts. An example of how IRWD responds to water shortage conditions is provided above in the section titled, “Recent Enactment of IRWD’s WSCP.”

IRWD would employ a range of measures in response to potential shortages depending on the level and duration. While the measures will be applied incrementally, IRWD’s WSCP builds in a level of flexibility to adopt additional measures to ensure the appropriate level of demand reduction. Under IRWD’s budget-based conservation rate structure that is always in effect, customer water budgets are limited to the amount that is reasonable for the customer’s needs and property characteristics, and reflect the exclusion of these types of wasteful water uses.

The use of IRWD’s budget-based rates and the assessment of higher rates for over-budget or wasteful use provides IRWD with an additional strategy to help achieve demand reductions.

In order to achieve the necessary demand reductions, IRWD’s measures will progress from voluntary reductions to reduction of discretionary uses through financial incentives or restrictions to reduction of non-discretionary uses through financial incentives or restrictions

based on the level of the shortage. Most shortages, unless extreme (Level 4 or system outage), can be addressed with a combination of voluntary measures and a reduction of discretionary uses through financial incentives.

It should be noted that IRWD has implemented on-going water use efficiency and outreach programs since the early 1990's, and those efforts combined with the budget-based tiered rates, have resulted in somewhat hardened levels of demand. IRWD will employ additional strategies, discussed in detail in the WSCP, to achieve the necessary demand reductions in a shortage situation.

An excess use charge based upon the budget-based rate structure is sufficient to encourage demand reduction to required levels. IRWD also has the ability to establish restrictions on water use or to discontinue service in the case of repeat violators under the Water Code of the State of California.

It should be noted that the majority of IRWD's landscape accounts are served with recycled water, which is considered to be drought tolerant supply. Therefore, if no shortage of recycled water supplies exists, consumption reductions may only apply to potable water accounts and raw water accounts (mostly agricultural) since these may be dependent on imported non-potable supplies which would most likely be reduced in a drought.

Through the adopted resolutions, IRWD has provisions for consumption reduction methods to be implemented if necessary based on the water shortage level declared. The consumption reduction measures used by IRWD and included in the WSCP are summarized in the following DWR Table 8-3.

2015 URBAN WATER MANAGEMENT PLAN
IRVINE RANCH WATER DISTRICT

DWR Table 8-3: Stages of WSCP – Consumption Reduction Methods

Stage	Consumption Reduction Methods by Water Supplier <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference (optional)
Add additional rows as needed		
Ongoing	Provide Rebates on Plumbing Fixtures and Devices	As available
Ongoing	Provide Rebates for Landscape Irrigation Efficiency	As available
Ongoing	Provide Rebates for Turf Replacement	As available
1	Expand Public Information Campaign	General conservation efforts including dedicated pages on IRWD's website, information provided in the Pipelines customer newsletter, and drought-related presentations to groups such as city council, community associations, chambers of commerce, business groups, and schools
1	Offer Water Use Surveys	Target over-allocation customers for surveys/assistance
1 or 2	Implement or Modify Drought Rate Structure or Surcharge	Review and adjust customer allocations and/or billing tiers as necessary
2	Other	Reduce potable and untreated irrigation and ag allocations by 30% or other percentage to be specified
3	Other	Reduce potable and untreated irrigation and ag allocations by 60% or other percentage to be specified
3	Other	Reduce CII allocations by 10% or other percentage to be specified
3	Decrease Line Flushing	Elimination of specific municipal uses such as hydrant flushing
3	Other	Elimination of specific municipal uses such as street cleaning and water-based recreation
3 or 4	Implement or Modify Drought Rate Structure or Surcharge	Increase rates for over-allocation tiers
4	Implement or Modify Drought Rate Structure or Surcharge	Further rate increase to achieve necessary reduction
4	Other	Further reduction of allocations and tightening of tiers and to achieve necessary reduction
4	Other	Eliminate non-recycled water outdoor use (100% reduction)
4	Other	Ban on car washing and pool-filling
4	Other	Mandatory restrictions and enforcement, as necessary

Extreme Shortage Measures

A Level 4 shortage of up to 50%, would require further adjustments to billing water budgets and the use of all the Demand Management/Budget-Based Rates strategies described in the WSCP. In addition, IRWD may determine that it is necessary to use mandatory restrictions and possible discontinuation of non-health and safety related service in order to achieve the necessary demand reductions in a Level 4 shortage. In addition to the measures implemented in all prior stages, IRWD may impose any combination of the following mandatory measures and rationing to alleviate demands. Additional detail is provided in the WSCP (refer to Appendix G).

1. *Potable Irrigation Ban*: Outdoor irrigation would be the initial target for any demand reductions. Demand reductions or eliminations that cannot be met through voluntary measures and financial incentives related to adjustments in the budget based rate structure, would be attained through a ban on potable irrigation.
2. *Ban on car-washing and pool-filling*: Demand reductions on car-washing and pool filling that cannot be achieved through voluntary measures and financial incentives related to adjustments in the budget-based rate structure would be attained through a ban on these actions.
3. *Flow restrictors*: Under extreme conditions of noncompliance, IRWD could install flow restrictors in individual service lines. Thus, water would be available for drinking, cooking, sponge baths, and slow fill of toilet tanks, but showers and other high volume type uses would not be possible. Under these conditions individual customer reaction would be severe. It would probably be necessary to augment the customer service field service staff to maintain surveillance of these services to assure that unauthorized changes are not made by the customer.
4. *Mandatory Restrictions and Fines*: IRWD's ability to establish restrictions on water use and to possibly discontinue non-health and safety related service in the case of repeat violators is provided for under the Water Code of the State of California Chapters 3 and 3.5).

8.6 Penalties for Excessive Use

IRWD's Rules and Regulations (Section 15) provide for enforcement and penalties that may apply to violators during a water shortage. An excess use charge based upon the budget-based rate structure, which is always in effect, is sufficient to encourage demand reduction to required levels. Depending on the level of shortage, IRWD may reduce customer billing water budgets, tighten the tiers, increase rates, or some combination of those strategies to obtain the necessary reductions. IRWD also has the ability to establish restrictions on water use or to discontinue service in the case of repeat violators under the Water Code of the State of California. Penalties for IRWD are identified based on the shortage conditions in the following IRWD Table 7.

IRWD Table 7: WSCP – Penalties and Charges

Penalties or Charges	Stage When Penalty Takes Effect
Penalty for excess use	4
Charge for excess use (over-budget billing tiers)	Always in Effect
Installation of flow restrictor	Extreme noncompliance

8.7 Analysis of Impacts on Revenue and Expenditures

The California Code Section 10632(a)(7) requires an analysis of the impacts of each of the actions taken for conservation and water restriction on the revenues and expenditures of the water supplier. IRWD's WSCP does not provide a detailed analysis of revenue and expenditure impacts of water shortages because IRWD's billing structure is designed to be insulated from revenue swings resulting from deviations between actual and budgeted water sales and from declining or reduced water sales. IRWD's billing structure consists of a fixed meter charge and a commodity charge based on the number of units of water used. Meter charges are set to meet IRWD's fixed costs of operation (e.g. salaries, supplies, etc.). The base commodity charge is set to match the cost of producing and purchasing water. Therefore, IRWD can recover its fixed costs regardless of the quantity of water sold, whereas the water sales at any level will cover the costs of providing water. This system has proven to be effective in balancing revenue and expenditures. The following IRWD Tables 8 and 9 show components of revenue and expenditure impacts that have been evaluated by IRWD and found no impact on IRWD revenues and expenditures.

IRWD Table 8: Actions and Conditions the Impact Expenditures

Type	Anticipated Revenue Reduction
Reduced sales	No Impact
Development of reserves	No Impact
Impact of supplier's higher rates (Tier 2)	No Impact
Category	Anticipated Cost
Change in quantity of sales	No Impact
Increased staff salaries/overtime	No Impact
Increased costs of new supplies/transfers/exchanges	No Impact

IRWD Table 9: Proposed Measures to Overcome Revenue Impacts

Names of Measures	Summary of Effects
Review of rate adjustment	IRWD can revise its rate structure during water shortage stages which can increase commodity sale revenues if needed to offset MWD shortage tier rates.
Reserves	IRWD maintains reserves that can stabilize water rates during times of reduced water sales
Reduce overhead or decreased capital expenditures	If necessary, IRWD can reduce overhead and postpone capital expenditures
Reserves	IRWD maintains reserves that can be used to overcome expenditure impacts caused by water shortage.
Reduce overhead or decreased capital expenditures	If necessary, IRWD can reduce overhead and postpone capital expenditures

Pricing Policy

IRWD's pricing policy is based on the cost of service, but also discourages wasteful uses of water. The pricing policy is evaluated on a yearly basis and adjusted as warranted.

The Budget-Based Rate Structure developed by IRWD is intended to ensure that the cost of water is based on how much water customers use, and whether customers stay within their monthly water budget, but also functions as a tool to promote water use efficiency commensurate with water supply conditions and is supported by cost of service. The structure includes a four-tiered system for residential customers and a two-tiered system for nonresidential customers, and charges progressively higher rates for progressively higher amounts of water used. Usage blocks for residential customers are based upon the type of dwelling and irrigated landscape. Landscape irrigation water budgets are based on site acreage and actual weather data.

The pricing policy for potable, non-agricultural use consists of three charges:

- (1) Monthly service charge
- (2) Commodity charge
- (3) Pumping Surcharge

The monthly service charge varies with the size of the water meter connection. This charge is intended to recover the operating and maintenance costs incurred. The variable ascending commodity charge recovers the cost of purchased and pumped water. This structure establishes an increasing unit cost per 100 cubic feet of water, as described in the next section. The pumping surcharge is added to the commodity rate of those users who reside at higher elevation areas. The surcharge is based on prevailing energy costs.

In an effort to promote water conservation, IRWD all customer types and sources of water are billed using budget based rates. The untreated water pricing for agricultural customers does not include a service charge, only a commodity charge to recover the cost of water purchases, although a service charge is assessed for non-agricultural untreated water customers. The

recycled water pricing policy for customers includes a monthly service charge identical to the potable system and a lower commodity rate based on a lower cost of service. Moreover, as an incentive to reduce water consumption, IRWD provides a reduced sewer service charge for residential customers who use less domestic water.

IRWD prepares monthly reports, which outline water use by customer type. These reports are used to evaluate water use trends and track conservation efforts.

8.8 Mechanism for Determining Actual Reductions in Water Use

IRWD is fully metered allowing for detailed accounting of water use in the service area. Monthly meter reads provide IRWD with a significant quantity of data for tracking and reporting actual reductions in water use in response to a water shortage. For example, in response to the current drought, IRWD has implemented water budgets designed to achieve the necessary reductions in water use. Each month IRWD determines how much water each customer has used in relation to their budget. This comparison is used to track attainment of water use reduction goals for the agency and is included in the customer's bill to encourage compliance with the water budgets.

8.9 Water Shortage Contingency Resolution

In October 2014, the IRWD Board adopted Resolution No. 2014-46 approving an amended WSCP. A copy of the Resolution is included in Appendix H. IRWD is currently in the process of updating the amended 2014 WSCP; a comprehensive update to the WSCP is anticipated to be completed in 2016.

8.10 Minimum Supply Next Three Years

The UWMP Act requires quantification of the minimum water supply available during the next three years (2016 to 2018) based on the driest three-year historic sequence for IRWD's water supply. For IRWD's supplies, the driest three-year historic sequence is based on MWD's Regional UWMP historic sequence (1990-1992). DWR Table 8-4 shows IRWD's expected minimum supply during the next three years.

DWR Table 8-4: Minimum Supply Next Three Years

	2016	2017	2018
Available Water Supply	91,100	91,100	91,100

8.11 Features Artificially Supplied With Water

IRWD adopted a resolution in 2014 adopting the current water shortage contingency plan, which bans non-circulating systems in water features and regulates water use in swimming pools.

9. DEMAND MANAGEMENT MEASURES

Law

10631(f) Provide a description of the supplier's water demand management measures. The description shall include all of the following:

(1)(A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measures implemented over the past five years. The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

(B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures: (i) Water waste prevention ordinances; (ii) Metering; (iii) Conservation pricing; (iv) Public education and outreach; (v) Programs to assess and manage distribution system real loss; (vi) Water conservation program coordination and staffing support; (vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

10631(i) For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivision (f) by complying with all the provision of the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.

9.1 Demand Management Measure Implementation

Water resource stewardship has been a hallmark of IRWD since its inception. The District set an aggressive tone to promote the efficient use of all water resources beginning in the late 1980's and into the drought of the early 1990's. This effort, which included intensive communication with the various customer groups and some of the first home water audit and ultra-low flush toilet programs in the state, culminated in the adoption of the budget -based rate structure by the IRWD Board in 1991. IRWD's rate structure successfully promotes ongoing conservation and provides the District with revenue stability. It provides a revenue source for IRWD's water use efficiency programs, while providing customers with among the lowest rates in Orange County.

Budget-Based Rate Structure

IRWD's budget-based rate structure was instituted in 1991 to promote the efficient use of water, and is designed to provide customers a significant economic incentive to use the proper amount of water required to serve indoor, landscape, commercial/industrial and institutional demands. This is accomplished by setting a customized monthly water budget for each customer account that is based upon a variety of factors such as: irrigated area, daily weather characteristics, number of residents, industrial or commercial business type, and other more unique characteristics such as the presence of a pool, livestock or specialized industrial equipment. The

bases for the water budgets were reviewed and updated in 2015 to reflect changes in plumbing codes, water use efficiency practices, and the 2015 Emergency Drought Regulation which mandated an aggregate 25% statewide reduction in potable water use from 2013 levels.

Water is sold to customers under a four tier structure based upon their monthly water budget which varies for landscape use relative to weather patterns. Customers using water within budget purchase water in the lower two tiers and are rewarded with very low water bills. Customers using in excess of their budget also purchase water in one to two steeply ascending upper tiers, resulting in relatively high water bills and a strong pricing signal for excessive use. IRWD's 2015 domestic residential commodity rates for each of the four tiers are shown below (IRWD Table 10).

IRWD Table 10: IRWD's 2015 Residential Tiered Rates

Tier	Rate Per CCF	Use (As a Percent of Budget)
Low Volume	\$1.11	0-40%
Base Rate	\$1.62	41-100%
Inefficient	\$3.92	101-130%
Wasteful	\$14.53	131% +

Rates Effective July 1, 2015

Revenue Stability

IRWD also assesses a monthly fixed charge based upon meter size. This fixed charge provides adequate funding for all operating costs other than the water commodity itself and the district's water use efficiency and related programs. As such, IRWD enjoys revenue stability regardless of the amount of water sold or the degree of conservation experienced from customers' water use efficiency practices.

Revenue from higher tier, over-allocation water use funds tailored programs and rebates for long-term improvements in water use efficiency and to support IRWD's urban runoff source control and treatment programs. The rate structure is designed to derive sufficient revenues from the over-allocation use tiers to completely fund these programs.

Price Signal to Reduce Water Waste

The rate structure not only signals customers when they are over-using water, but also signals IRWD as to which customers need the greatest degree of attention. This two-way communication helps IRWD focus its financial and staff resources efficiently. Customer service is also emphasized. For example, billing adjustments are provided for customers that have over-allocation use related to leaks if the customer shows evidence of the leak repair. In addition, customers that have habitual over-allocation use are contacted by IRWD staff and offered leak detection services, as well as water use efficiency education and assistance.

Rate Structure Results

Since the introduction of IRWD's allocation-based rate structure in 1991, the following has been observed:

- The rate structure had an immediate effect on the landscape account usage with a 0.5 acre-foot per acre reduction in the first six months following its adoption.
- For landscape accounts, water consumption has dropped 31.5% solely attributable to the rate structure (Kennedy/Jenks 2008). Additional programs and incentives have resulted in a total reduction of 43%, from 4.4 to 2.5 acre-feet per acre since 1991. The associated energy savings with the reduction in imported water requirements is estimated at 1,250 kilowatt hours/acre/year.
- Residential demands have dropped 7% since 1991 as result of the implementation of the allocation-based rate structure (Kennedy/Jenks 2008). The associated energy savings with the reduction in imported water requirements is estimated at 70 kilowatt hours per capita per year.
- Urban runoff (dry weather flow) in the major creek system has only nominally increased, while irrigated acreage has increased over 400%, from 3,300 acres in 1991 to 15,500 acres, presently.
- As a result of the strong economic signal provided with the rate structure and proactive customer outreach, fewer than 3% of residential customers currently pay the highest tier charges in any given month.
- Both residential and non-residential customers give IRWD high marks in customer satisfaction, with customer service rating of “excellent” from 87.1% of surveyed customers.
- The reductions in per capita and landscape water use have reduced IRWD’s dependence on expensive imported water.
- Secondary benefits include reductions in urban runoff flows, energy savings and reduced green-house gas (GHG) emissions.

9.2 Water Use Efficiency Programs

IRWD and its customers understand that smart water use needs to be a way of life in Southern California, in wet and drought years alike. We are committed to providing the most cutting-edge water use efficiency programs. Over the decades we’ve worked to become even wiser about using water. IRWD encourages its customers – as well as its partners, vendors, suppliers, and employees – to use water wisely.

IRWD implements a wide-range of conservation programs, designed to target all customer sectors. Programs are developed to be consistent with the objectives of IRWD’s Water Conservation Plan. They are continually evaluated to maximize water savings, and modified to integrate the latest water efficient technologies and practices. Specific programs that IRWD relies upon to meet its demand management, promote water conservation, and to meet its 2020 targets are listed below.

Programs

- Free on-site assistance and customized reports for customers in all sectors to help identify opportunities for water savings, eliminate water waste, and to recommend appropriate programs and strategies to reduce water demands.

- Water Smart Reports that provide enhanced customer engagement through multiple communication methods.
- Turf replacement installation and rebate programs.
- Rebates for weather-based irrigation controllers, drip irrigation and rain barrels.
- Direct installation programs and rebates for high efficiency plumbing devices.
- Rebates for high efficiency clothes washers.
- Rebates for commercial and industrial efficiency devices, such as cooling tower conductivity controllers
- Performance based incentive program for commercial, industrial and institutional (CII) customers to upgrade equipment and improve their water processes to provide greater water use efficiency. High use CII accounts are targeted for participation in the program.
- Fix A Leak courtesy adjustment program.
- Robust system water loss and meter testing programs.

Workshops and Tours

IRWD offers many workshops and tours to its customers as a part of ongoing outreach. We hold monthly workshops targeted toward helping customers reduce outdoor water use and replace turf with drought tolerant plants. Recent efforts have included successful partnerships with U.C. Cooperative Extension and the Master Gardeners to promote landscape water use efficiency:

Public Outreach and Social Media

IRWD's public outreach is aimed at promoting voluntary water conservation, something which IRWD has always done. IRWD's *Always Water SmartRightScape* program is always in effect which focuses on outdoor water efficiency using the Right Plants, Right Equipment and Right Irrigation Schedule. Conservation is a constant ethic and goal, promoted throughout the service area, regardless of drought conditions.

IRWD makes extensive use of its redesigned website www.rightscapenow.com and use of social media, including the use of Facebook and Twitter, to continually remind customers of the conservation message. The website heavily features conservation and easy to use irrigation scheduling guideline, information on tactical incentives, and a new Beautiful Landscapes section which focuses on the three components of a RightScape landscape and water efficient irrigation. IRWD also informs its customers through billing inserts, mailers, water conservation booths, newsletters, postcards, community association meetings, and local public events.

Education Programs

The District has provided free innovative student water education programs since the mid-1970's. These programs are available to students and teachers from kindergarten through college in any public, private or home school within IRWD's service area. From student education programs to resident tours to exciting education partnerships, IRWD's commitment to community education is boundless. Today, through an exciting partnership with the Discovery Science Center, we offer exceptional education programs meeting California curriculum content

standards and bringing water education to life for the students in IRWD's service area. IRWD also offers customized programs for high school and college classes highlighting a wide variety of topics related to water and environmental resources.

Strategies to Meet 2020 Target

IRWD has already met and exceeded its 2020 target. IRWD intends to continue its implementation of its effective demand reduction programs as part of its overall long-term water resource strategy.

9.3 California Urban Water Conservation Council Reports

IRWD is a signatory to the Memorandum of Understanding Regarding Water Conservation in California (MOU) and therefore has submitted the annual report required by the California Urban Water Conservation Council (CUWCC) pursuant to section 10631(i) in order to comply with all of the requirements of 10631 subdivision (f). In Appendix I IRWD has provided the CUWCC reports for the last reporting cycle, which covered Fiscal Year 2013-14 and Fiscal Year 2014-15. Also included in Appendix I are the coverage reports from the CUWCC documenting that IRWD is on track with the MOU coverage requirements and is in full compliance.

10. PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

Law

10642...Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

10608.26(a) Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.

10643 An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

10644(a) An urban water supplier shall submit to the department, The California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

10645 Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

Inclusion of All 2015 Data

IRWD's 2015 UWMP reports the water use and planning data on a fiscal year basis. The water use and required data in IRWD's UWMP is shown as through June 30, 2015. This 2015 UWMP serves as an update to IRWD's 2010 plan.

Notice of Public Hearing

Pursuant to Water Code Sections 10621(b) and 10642, IRWD provided notice to the seven cities, County of Orange and the public of IRWD's planned public hearing. The public hearing provides an opportunity for the cities, county served by IRWD and any interested party an opportunity to provide input on the UWMP prior to its adoption. IRWD's notifications are described below.

As stated in Section 2.6, during the preparation of the 2015 UWMP, IRWD notified, in writing, all of the cities within IRWD's service area and the County of Orange of IRWD's update to the plan and provided the opportunity for the cities and county to submit comments during the update process. As required, this notification was dated, more than 60 days prior to the public

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hearing date of June 13, 2016. Copies of the letters notifying the cities and County of Orange of IRWD's update to the UWMP are included in Appendix C. [REDACTED]

On May 25, 2016, IRWD notified all of the cities within IRWD's service area and the County of Orange of IRWD's scheduled public hearing. This notification is also included in Appendix C. The list of cities and County and notifications by IRWD are shown below in DWR Table 10-1.

DWR Table 10-1: IRWD Notification to Cities and Counties

City Name	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
Irvine, Tustin, Orange,	☒	☒
Lake Forest, Newport Beach	☒	☒
Costa Mesa	☒	☒
County Name <i>Drop Down List</i>	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
Orange County	☒	☒
	☐	☐

In accordance with Government Code 6066, on May 30 and June 6, 2016, IRWD published the following notice in the Orange County Register that it will hold a public hearing on June 13, 2016.

NOTICE OF PUBLIC HEARING
IRVINE RANCH WATER DISTRICT ADOPTION OF
2015 URBAN WATER MANAGEMENT PLAN

Notice is hereby given that the Board of Directors of Irvine Ranch Water District will conduct a public hearing at 5:00 p.m. on June 13, 2016, in the District office located at 15600 Sand Canyon Avenue, Irvine, California for the purpose of receiving public comments concerning the proposed adoption of IRWD's 2015 Urban Water Management Plan, as required under the California Urban Water Management Planning Act. Any person desiring to make comments or present information to the Board may make an oral presentation at the public hearing or may submit written comments or information for the Board's consideration by delivering them to the District office prior to the time of the hearing. A draft of the Plan is available for review on IRWD's Web site (www.irwd.com) or at the District office at the above address.

Leslie Bonkowski
District Secretary

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As required, this public notice included the time and place of hearing, as well as the location where the plan is available for inspection. The draft UWMP was made available for public review on IRWD's website at www.irwd.com and copies available through request at IRWD's offices.

Public Hearing and Adoption

IRWD held a public hearing to adopt the UWMP on June 13, 2016. The public hearing provided an opportunity for the public to provide input to the plan before it was adopted. [REDACTED]. The adoption of the UWMP was combined with the public hearing. Following the public hearing, the UWMP was adopted by IRWD's Board of Directors on June 13, 2016. IRWD's adoption resolution is included under Appendix B.

Plan Submittal and Public Availability

Pursuant to Water Code Section 10621(d), within 30 days of adoption and by July 1, 2016, IRWD submitted its 2015 UWMP to the DWR on [REDACTED]. IRWD's complete UWMP and separate standardized tables were submitted electronically to DWR.

IRWD completed the following UWMP checklist to confirm that the required elements have been included in the UWMP. Page information on the checklist indicates where the required element can be found with the UWMP. This completed checklist has been submitted to DWR to support its review of the UWMP.

As required, within 30 days of adoption, on [REDACTED], IRWD submitted a CD and hard copy of the adopted 2015 UWMP to the California State Library at:

**California State Library
Government Publications Section
P.O. Box 942837
Sacramento, CA 94237-0001
Attention: Coordinator, Urban Water Management Plans**

Pursuant to Water Code Section 10635(b), not later than 30 days after adoption, on [REDACTED], IRWD submitted a copy of the adopted 2015 UWMP to the cities of Irvine, Tustin, Orange, Lake Forest, Newport Beach, Costa Mesa, Santa Ana and to the County of Orange.

Pursuant to Water Code Section 10645, not later than 30 days after filing a copy of its UWMP with the DWR, IRWD the 2015 UWMP available to the public review during normal business hours. In addition, IRWD has provided the adopted UWMP available on IRWD's website www.irwd.com.

Checklist Arranged by Water Code Section

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	Section 5.1
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Chapter 5 and App E	Section 5.6
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	Section 5.9
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	Section 5.8
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	Section 5.3
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	Chapter 10
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	N/A
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	Section 5.8
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	N/A

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10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	Section 2.6
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	Chapters 6 and 7
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	Section 2.6 Chapter 10
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	Chapter 10
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	Section 3.1
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	Section 3.2
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	Section 3.3
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	Section 3.3
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	Section 3.4
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	Sections 6.2 and 6.9
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	Chapter 6
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	Section 6.2
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	Section 6.2

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10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	Section 6.2
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	Section 6.2
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 6.2.4	Section 6.2
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	Sections 6.2 and 6.9
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	Chapter 7
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	Section 7.2
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	Chapter 7
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	Section 6.7
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	Section 4.1
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	Section 4.2
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	Chapter 9

2015 URBAN WATER MANAGEMENT PLAN
IRVINE RANCH WATER DISTRICT

10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	N/A
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	Section 6.8
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	Section 6.6
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	Chapter 9 and Appendix I
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	Section 2.5
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	N/A
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	Section 4.4
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	Section 8.1
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	Section 8.1
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	Section 8.3

2015 URBAN WATER MANAGEMENT PLAN
IRVINE RANCH WATER DISTRICT

10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	Section 8.4
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	Section 8.5
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	Section 8.6
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	Section 8.7
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	Section 9 Appendix G
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	Section 8.8
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	Section 6.5
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	Section 6.5
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	Section 6.5
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	Section 6.5
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	Section 6.5

2015 URBAN WATER MANAGEMENT PLAN
IRVINE RANCH WATER DISTRICT

10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.5.4	Section 6.5
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	Section 6.5
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	Section 6.5
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	Section 7.1
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	Sections 7.2 and 7.3
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	Chapter 10
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	Chapter 10
10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	Chapter 10
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	Chapter 10

2015 URBAN WATER MANAGEMENT PLAN
IRVINE RANCH WATER DISTRICT

10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	Chapter 10
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	Chapter 10
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	Chapter 10
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	Chapter 10
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	Chapter 10

11. VOLUNTARY REPORTING OF ENERGY INTENSITY

Law

CWC 10631.2(a)

In addition to the requirements of Section 10631, an urban water management plan may, but is not required to, include any of the following information:

- (1) An estimate of the amount of energy used to extract or divert water supplies.
- (2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.
- (3) An estimate of the amount of energy used to treat water supplies.
- (4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.
- (5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.
- (6) An estimate of the amount of energy used to place water into or withdraw from storage.
- (7) Any other energy-related information the urban water supplier deems appropriate.

CWC 10631.2 (b)

The department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems. The department may consider studies and calculations conducted by the Public Utilities Commission in developing the methodology.

The energy intensity data provided in Tables O-1C and O-2 have been obtained from IRWD's Embedded Energy Plan, which was commissioned to examine energy use associated with collection, use, reuse, and disposal of water and biosolids in IRWD's service area. The Embedded Energy Plan analyzes historic energy and water data over the time period of 2005-2013 and calculates total energy use and historic embedded energy on an annual basis. The analysis further breaks down water supply into two sub-systems: potable water supply and non-potable water supply. Annualized energy intensity was calculated for each sub-system by aggregating the energy intensities of 108 unique water operations facilities and processes throughout IRWD's system.

2015 URBAN WATER MANAGEMENT PLAN
IRVINE RANCH WATER DISTRICT

DWR Table O-1C: Voluntary Energy Intensity – Multiple Water Delivery Products

Water Delivery Type	Production Volume (AF)	Total Utility (kWh/AF)	Net Utility (kWh/AF)
<i>Retail Potable Deliveries</i>	62668.3	975.0	975.0
<i>Retail Non-Potable (Recycled) Deliveries</i>	30497.6	881.0	881.0
<i>Wholesale Potable Deliveries</i>	-	-	-
<i>Wholesale Non-Potable Deliveries</i>	-	-	-
<i>Agricultural Deliveries</i>	-	-	-
<i>Environmental Deliveries</i>	-	-	-
<i>Other</i>	-	-	-
All Water Delivery Types	0	1856.0	1856.0

DWR Table O-2: Voluntary Energy Intensity – Wastewater & Recycled Water

Reporting Start Date	1/1/2013	Urban Water Supplier Operational Control			
End Date	12/31/2013				
		Water Management Process			
		Collection / Conveyance	Treatment	Discharge / Distribution	Total
<i>Volume of Wastewater Entering Process (AF)</i>		-	-	-	-
<i>Wastewater Energy Consumed (kWh)</i>		-	-	-	-
<i>Wastewater Energy Intensity (kWh/AF)</i>		-	-	-	523.0
<i>Volume of Recycled Water Entering Process (AF)</i>		-	-	-	-
<i>Recycled Water Energy Consumed (kWh)</i>		-	-	-	-
<i>Recycled Water Energy Intensity (kWh/AF)</i>		-	-	-	881.0

The 2013 energy intensity values were used for reporting in this UWMP as they best represent the current energy use of each facility. An average of 1,663 kWh/AF of energy is used for potable water delivered to an IRWD customer. Of that energy needed, 975 kWh/AF are consumed by IRWD-owned facilities, while the remainder is consumed upstream of IRWD by wholesale agencies to import and treat that water. An average of 1,110 kWh/AF of energy is used for non-potable water delivered to an IRWD customer. Of that energy needed, 881 kWh/AF are consumed by IRWD-owned facilities, while the remainder is consumed upstream of IRWD to import supplemental non-potable water. An average of 596 kWh/AF of energy is used to collect and treat sewage from an IRWD customer. Of that energy needed, 523 kWh/AF are consumed by IRWD-owned facilities, while the remainder are consumed downstream of IRWD to further treat sewage at Orange County Sanitation District and Santa Margarita Water District.

2015 URBAN WATER MANAGEMENT PLAN
IRVINE RANCH WATER DISTRICT

Detailed methodologies and calculations for the embedded energy values reported here can be found in the full Embedded Energy Plan, which is available on IRWD's website at <http://www.irwd.com/doing-business/energy-saving-programs>.

APPENDIX A: Reference Documents

Irvine Ranch Water District Urban Water Management Plan

- 1) *Water Resources Master Plan*, Irvine Ranch Water District, Updated 2007
- 2) *2010 Urban Water Management Plan*, Irvine Ranch Water District, June 2011
- 3) *Southern California's Integrated Water Resources Plan*, Metropolitan Water District of Southern California, March 1996
- 4) *2015 Integrated Water Resources Plan Update*, Metropolitan Water District of Southern California, January 2016
- 5) *Master Plan Report*, Orange County Water District, April, 1999
- 6) *Groundwater Management Plan*, Orange County Water District, March, 2004, Updated June 2015
- 7) *Final Draft Long-Term Facilities Plan*, Orange County Water District, January 2006
- 8) *Section 15 of the Rules and Regulations – Water Conservation and Water Supply Shortage Program*, Irvine Ranch Water District, August 2015
- 9) *Water Shortage Contingency Plan*, Irvine Ranch Water District, October 2014
- 10) *2015 Urban Water Management Plan*, Metropolitan Water District of Southern California, March 2016
- 11) *2015 Urban Water Management Plan*, Municipal Water District of Orange County, May 2016

APPENDIX B: Resolution No. 2016-
The Irvine Ranch Water District adopting the
2015 Urban Water Management Plan Update

RESOLUTION NO. 2016 -

IRVINE RANCH WATER DISTRICT
RESCINDING RESOLUTION NO. 2011-19 AND ADOPTING
THE 2015 URBAN WATER MANAGEMENT PLAN
FOR SAID DISTRICT

WHEREAS, Irvine Ranch Water District is a California Water District organized and existing under the California Water District Law; and

WHEREAS, pursuant to Section 10620 et seq. of the California Water Code the District prepared and adopted an Urban Water Management Plan for said District on June 13, 2010; and

WHEREAS, the Board of Directors of the District, pursuant to Section 10621 of the Water Code has reviewed the Plan and directed that it be amended; and

WHEREAS, the amended Plan, entitled “2015 Urban Water Management Plan” has been made available for public inspection and notice of a public hearing thereon has been given pursuant to Section 6066 of the California Government Code; and

WHEREAS, at the time set, the duly noticed public hearing was held and all persons interested were given an opportunity to be heard concerning any matter set forth in the Plan.

NOW, THEREFORE, the Board of Directors of the Irvine Ranch Water District does hereby RESOLVE, DETERMINE and ORDER as follows:

Section 1. Resolution No. 2011-19 adopted the 13th day of June 2011 be and hereby is rescinded in its entirety.

Section 2. The 2015 Urban Water Management Plan of the Irvine Ranch Water District, dated June 2016, is hereby adopted pursuant to Section 10642 of the California Water Code.

Section 3. The District Secretary is directed to file a copy of the 2015 Urban Water Management Plan of the Irvine Ranch Water District with the Department of Water Resources of the State of California, pursuant to Section 10644 of the California Water Code.

ADOPTED, SIGNED and APPROVED this 13th day of June, 2016.

President, IRVINE RANCH WATER DISTRICT
and of the Board of Directors thereof

Secretary, IRVINE RANCH WATER DISTRICT
and of the Board of Directors thereof

APPROVED AS TO FORM:
BOWIE, ARNESON, WILES & GIANNONE
Legal Counsel - IRWD

By: _____

APPENDIX C: Letters to Cities and County within IRWD Service Area
Irvine Ranch Water District
Urban Water Management Plan



IRVINE RANCH WATER DISTRICT

15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

December 23, 2015

Mr. Ernesto Munoz
Public Services Director
City of Costa Mesa
P. O. Box 1200
Costa Mesa, CA 92628-1200

Dear Mr. Munoz:

As you may be aware, pursuant to the California Water Code, Irvine Ranch Water District (IRWD) updates its Urban Water Management Plan every five years in years ending in "0" and "5". This effort helps ensure we can provide our service area including the City of Costa Mesa with a reliable supply of high-quality water to meet current and future demand.

Because comprehensive water resource planning is so critical, the California Water Code mandates all urban water purveyors notify the city or county they serve of this planning effort and solicit any comments in updating the Urban Water Management Plan. Comments may include information on land-use planning decisions in your city that may impact water consumption over the next 20 years.

IRWD's 2015 Urban Water Management Plan, which is due by July 1, 2016, is also being coordinated with the Municipal Water District of Orange County (MWDOC) for inclusion in its Regional Urban Water Management Plan. Metropolitan Water District of Southern California (MWD) supplies imported water from Northern California and the Colorado River to nearly 18 million people in six Southern California counties. MWDOC, a MWD member agency, is the water wholesaler and resource-planning agency for Orange County. The result of these collaborative efforts will be an all-inclusive plan that will assist in better managing one of California's most precious resources.

You may contact Kellie Welch at (949) 453-5604 or Jo Ann Corey at (949) 453-5326 if you should have any comments or questions on IRWD's 2015 Urban Water Management Plan.

Sincerely,

A handwritten signature in blue ink, appearing to read "F. Sanchez", is written over a horizontal line.

Fiona M. Sanchez
Director of Water Resources



IRVINE RANCH WATER DISTRICT

15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

December 23, 2015

Mr. Manuel Gomez
Public Works Director
City of Irvine
P. O. Box 19575
Irvine, CA 92623-9575

Dear Mr. Gomez:

As you may be aware, pursuant to the California Water Code, Irvine Ranch Water District (IRWD) updates its Urban Water Management Plan every five years in years ending in "0" and "5". This effort helps ensure we can provide our service area including the City of Irvine with a reliable supply of high-quality water to meet current and future demand.

Because comprehensive water resource planning is so critical, the California Water Code mandates all urban water purveyors notify the city or county they serve of this planning effort and solicit any comments in updating the Urban Water Management Plan. Comments may include information on land-use planning decisions in your city that may impact water consumption over the next 20 years.

IRWD's 2015 Urban Water Management Plan, which is due by July 1, 2016, is also being coordinated with the Municipal Water District of Orange County (MWDOC) for inclusion in its Regional Urban Water Management Plan. Metropolitan Water District of Southern California (MWD) supplies imported water from Northern California and the Colorado River to nearly 18 million people in six Southern California counties. MWDOC, a MWD member agency, is the water wholesaler and resource-planning agency for Orange County. The result of these collaborative efforts will be an all-inclusive plan that will assist in better managing one of California's most precious resources.

You may contact Kellie Welch at (949) 453-5604 or Jo Ann Corey at (949) 453-5326 if you should have any comments or questions on IRWD's 2015 Urban Water Management Plan.

Sincerely,

A handwritten signature in blue ink, reading "FMSanchez".

Fiona M. Sanchez
Director of Water Resources



IRVINE RANCH WATER DISTRICT

15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

December 23, 2015

Mr. Thomas Wheeler, P.E.
Public Works Director
City of Lake Forest
25550 Commercentre Drive, Suite 100
Lake Forest, CA 92630

Dear Mr. Wheeler:

As you may be aware, pursuant to the California Water Code, Irvine Ranch Water District (IRWD) updates its Urban Water Management Plan every five years in years ending in "0" and "5". This effort helps ensure we can provide our service area including the City of Lake Forest with a reliable supply of high-quality water to meet current and future demand.

Because comprehensive water resource planning is so critical, the California Water Code mandates all urban water purveyors notify the city or county they serve of this planning effort and solicit any comments in updating the Urban Water Management Plan. Comments may include information on land-use planning decisions in your city that may impact water consumption over the next 20 years.

IRWD's 2015 Urban Water Management Plan, which is due by July 1, 2016, is also being coordinated with the Municipal Water District of Orange County (MWDOC) for inclusion in its Regional Urban Water Management Plan. Metropolitan Water District of Southern California (MWD) supplies imported water from Northern California and the Colorado River to nearly 18 million people in six Southern California counties. MWDOC, a MWD member agency, is the water wholesaler and resource-planning agency for Orange County. The result of these collaborative efforts will be an all-inclusive plan that will assist in better managing one of California's most precious resources.

You may contact Kellie Welch at (949) 453-5604 or Jo Ann Corey at (949) 453-5326 if you should have any comments or questions on IRWD's 2015 Urban Water Management Plan.

Sincerely,

A handwritten signature in blue ink that reads "FMSanchez".

Fiona M. Sanchez
Director of Water Resources



IRVINE RANCH WATER DISTRICT

15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

December 23, 2015

Mr. David Webb
Public Works Director
City of Newport Beach
P.O. Box 1768
Newport Beach, CA 92658-8915

Dear Mr. Webb:

As you may be aware, pursuant to the California Water Code, Irvine Ranch Water District (IRWD) updates its Urban Water Management Plan every five years in years ending in "0" and "5". This effort helps ensure we can provide our service area including the City of Newport Beach with a reliable supply of high-quality water to meet current and future demand.

Because comprehensive water resource planning is so critical, the California Water Code mandates all urban water purveyors notify the city or county they serve of this planning effort and solicit any comments in updating the Urban Water Management Plan. Comments may include information on land-use planning decisions in your city that may impact water consumption over the next 20 years.

IRWD's 2015 Urban Water Management Plan, which is due by July 1, 2016, is also being coordinated with the Municipal Water District of Orange County (MWDOC) for inclusion in its Regional Urban Water Management Plan. Metropolitan Water District of Southern California (MWD) supplies imported water from Northern California and the Colorado River to nearly 18 million people in six Southern California counties. MWDOC, a MWD member agency, is the water wholesaler and resource-planning agency for Orange County. The result of these collaborative efforts will be an all-inclusive plan that will assist in better managing one of California's most precious resources.

You may contact Kellie Welch at (949) 453-5604 or Jo Ann Corey at (949) 453-5326 if you should have any comments or questions on IRWD's 2015 Urban Water Management Plan.

Sincerely,

Fiona M. Sanchez
Director of Water Resources



IRVINE RANCH WATER DISTRICT

15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

December 23, 2015

Mr. Joseph DeFrancesco
Public Works Director
City of Orange
P.O. Box 449
Orange, CA 92866-1591

Dear Mr. DeFrancesco:

As you may be aware, pursuant to the California Water Code, Irvine Ranch Water District (IRWD) updates its Urban Water Management Plan every five years in years ending in "0" and "5". This effort helps ensure we can provide our service area including the City of Orange with a reliable supply of high-quality water to meet current and future demand.

Because comprehensive water resource planning is so critical, the California Water Code mandates all urban water purveyors notify the city or county they serve of this planning effort and solicit any comments in updating the Urban Water Management Plan. Comments may include information on land-use planning decisions in your city that may impact water consumption over the next 20 years.

IRWD's 2015 Urban Water Management Plan, which is due by July 1, 2016, is also being coordinated with the Municipal Water District of Orange County (MWDOC) for inclusion in its Regional Urban Water Management Plan. Metropolitan Water District of Southern California (MWD) supplies imported water from Northern California and the Colorado River to nearly 18 million people in six Southern California counties. MWDOC, a MWD member agency, is the water wholesaler and resource-planning agency for Orange County. The result of these collaborative efforts will be an all-inclusive plan that will assist in better managing one of California's most precious resources.

You may contact Kellie Welch at (949) 453-5604 or Jo Ann Corey at (949) 453-5326 if you should have any comments or questions on IRWD's 2015 Urban Water Management Plan.

Sincerely,

A handwritten signature in blue ink that reads "F. Sanchez".

Fiona M. Sanchez
Director of Water Resources



IRVINE RANCH WATER DISTRICT

15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

December 23, 2015

Mr. Douglas Stack
Public Works Director
City of Tustin
300 Centennial Way
Tustin, CA 92780

Dear Mr. Stack:

As you may be aware, pursuant to the California Water Code, Irvine Ranch Water District (IRWD) updates its Urban Water Management Plan every five years in years ending in "0" and "5". This effort helps ensure we can provide our service area including the City of Tustin with a reliable supply of high-quality water to meet current and future demand.

Because comprehensive water resource planning is so critical, the California Water Code mandates all urban water purveyors notify the city or county they serve of this planning effort and solicit any comments in updating the Urban Water Management Plan. Comments may include information on land-use planning decisions in your city that may impact water consumption over the next 20 years.

IRWD's 2015 Urban Water Management Plan, which is due by July 1, 2016, is also being coordinated with the Municipal Water District of Orange County (MWDOC) for inclusion in its Regional Urban Water Management Plan. Metropolitan Water District of Southern California (MWD) supplies imported water from Northern California and the Colorado River to nearly 18 million people in six Southern California counties. MWDOC, a MWD member agency, is the water wholesaler and resource-planning agency for Orange County. The result of these collaborative efforts will be an all-inclusive plan that will assist in better managing one of California's most precious resources.

You may contact Kellie Welch at (949) 453-5604 or Jo Ann Corey at (949) 453-5326 if you should have any comments or questions on IRWD's 2015 Urban Water Management Plan.

Sincerely,

Fiona M. Sanchez
Director of Water Resources



IRVINE RANCH WATER DISTRICT

15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

December 23, 2015

Mr. Shane Silsby, P.E.
Public Works Director
County of Orange
P.O. Box 4048
Santa Ana, CA 92702-4048

Dear Mr. Silsby:

As you may be aware, pursuant to the California Water Code, Irvine Ranch Water District (IRWD) updates its Urban Water Management Plan every five years in years ending in "0" and "5". This effort helps ensure we can provide our service area including the County of Orange with a reliable supply of high-quality water to meet current and future demand.

Because comprehensive water resource planning is so critical, the California Water Code mandates all urban water purveyors notify the city or county they serve of this planning effort and solicit any comments in updating the Urban Water Management Plan. Comments may include information on land-use planning decisions in your city that may impact water consumption over the next 20 years.

IRWD's 2015 Urban Water Management Plan, which is due by July 1, 2016, is also being coordinated with the Municipal Water District of Orange County (MWDOC) for inclusion in its Regional Urban Water Management Plan. Metropolitan Water District of Southern California (MWD) supplies imported water from Northern California and the Colorado River to nearly 18 million people in six Southern California counties. MWDOC, a MWD member agency, is the water wholesaler and resource-planning agency for Orange County. The result of these collaborative efforts will be an all-inclusive plan that will assist in better managing one of California's most precious resources.

You may contact Kellie Welch at (949) 453-5604 or Jo Ann Corey at (949) 453-5326 if you should have any comments or questions on IRWD's 2015 Urban Water Management Plan.

Sincerely,

A handwritten signature in blue ink that reads "Fiona M. Sanchez".

Fiona M. Sanchez
Director of Water Resources



IRVINE RANCH WATER DISTRICT

15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

May 25, 2016

Ernesto Munoz
Public Services Director
City of Costa Mesa
P. O. Box 1200
Costa Mesa, CA 92628-1200

Dear Mr. Munoz:

As you may be aware, pursuant to the California Water Code, Irvine Ranch Water District (IRWD) updates its Urban Water Management Plan every five years in years ending in "0" and "5". This effort helps ensure we can provide our service area, including the City of Costa Mesa, with a reliable supply of high-quality water to meet current and future demand.

Because comprehensive water resource planning is so critical, the California Water Code mandates all urban water purveyors notify the city or county they serve of this planning effort and solicit any comments in updating the Urban Water Management Plan. Comments may include information on land-use planning decisions in your city that may impact water consumption over the next 20 years.

IRWD's 2015 Urban Water Management Plan, which is due by July 1, 2016, is also being coordinated with the Municipal Water District of Orange County (MWDOC) for inclusion in its Regional Urban Water Management Plan. Metropolitan Water District of Southern California (MWD) supplies imported water from Northern California and the Colorado River to nearly 18 million people in six Southern California counties. MWDOC, a MWD member agency, is the water wholesaler and resource-planning agency for Orange County. The result of these collaborative efforts will be an all-inclusive plan that will assist in better managing one of California's most precious resources.

IRWD will hold a public hearing on the draft 2015 UWMP on June 13, 2016 when the Board of Directors will consider its adoption. A copy of the draft 2015 UWMP is available on the District's website, www.irwd.com or a hard copy is available for review at IRWD. Comments on the draft 2015 Urban Water Management Plan may be mailed to Jo Ann Corey, Engineering Technician or Kellie Welch, Water Resources Manager by June 10, 2016.

Sincerely,

Fiona M. Sanchez
Director of Water Resources



IRVINE RANCH WATER DISTRICT

15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

May 25, 2016

Mr. Manuel Gomez
Public Works Director
City of Irvine
P. O. Box 19575
Irvine, CA 92623-9575

Dear Mr. Gomez:

As you may be aware, pursuant to the California Water Code, Irvine Ranch Water District (IRWD) updates its Urban Water Management Plan every five years in years ending in "0" and "5". This effort helps ensure we can provide our service area, including the City of Irvine, with a reliable supply of high-quality water to meet current and future demand.

Because comprehensive water resource planning is so critical, the California Water Code mandates all urban water purveyors notify the city or county they serve of this planning effort and solicit any comments in updating the Urban Water Management Plan. Comments may include information on land-use planning decisions in your city that may impact water consumption over the next 20 years.

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Sincerely,

Fiona M. Sanchez
Director of Water Resources



IRVINE RANCH WATER DISTRICT

15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

May 25, 2016

Mr. Thomas Wheeler, P.E.
Public Works Director
City of Lake Forest
25550 Commercentre Drive, Suite 100
Lake Forest, CA 92630

Dear Mr. Wheeler:

As you may be aware, pursuant to the California Water Code, Irvine Ranch Water District (IRWD) updates its Urban Water Management Plan every five years in years ending in "0" and "5". This effort helps ensure we can provide our service area, including the City of Lake Forest, with a reliable supply of high-quality water to meet current and future demand.

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Sincerely,

Fiona M. Sanchez
Director of Water Resources



IRVINE RANCH WATER DISTRICT

15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

May 25, 2016

Mr. Harvey DeLaTorre
Municipal Water District of Orange County
P.O. Box 20895
Fountain Valley, CA 92728

Dear Mr. DeLaTorre:

As you may be aware, pursuant to the California Water Code, Irvine Ranch Water District (IRWD) updates its Urban Water Management Plan every five years in years ending in "0" and "5". This effort helps ensure we can provide our service area with a reliable supply of high-quality water to meet current and future demand.

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Sincerely,

A handwritten signature in black ink, appearing to read "Fiona M. Sanchez", written in a cursive style.

Fiona M. Sanchez
Director of Water Resources



IRVINE RANCH WATER DISTRICT

15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

May 25, 2016

Mr. David Webb
Public Works Director
City of Newport Beach
P.O. Box 1768
Newport Beach, CA 92658-8915

Dear Mr. Webb:

As you may be aware, pursuant to the California Water Code, Irvine Ranch Water District (IRWD) updates its Urban Water Management Plan every five years in years ending in "0" and "5". This effort helps ensure we can provide our service area, including the City of Newport Beach, with a reliable supply of high-quality water to meet current and future demand.

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Sincerely,

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Fiona M. Sanchez
Director of Water Resources



IRVINE RANCH WATER DISTRICT

15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

May 25, 2016

Mr. Shane Silsby, P.E.
OC Public Works Director
County of Orange
P.O. Box 4048
Santa Ana, CA 92702-4048

Dear Mr. Silsby:

As you may be aware, pursuant to the California Water Code, Irvine Ranch Water District (IRWD) updates its Urban Water Management Plan every five years in years ending in "0" and "5". This effort helps ensure we can provide our service area, including the County of Orange, with a reliable supply of high-quality water to meet current and future demand.

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Sincerely,

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Fiona M. Sanchez
Director of Water Resources



IRVINE RANCH WATER DISTRICT

15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

May 25, 2016

Mr. Joseph DeFrancesco
Public Works Director
City of Orange
P.O. Box 449
Orange, CA 92866

Dear Mr. DeFrancesco:

As you may be aware, pursuant to the California Water Code, Irvine Ranch Water District (IRWD) updates its Urban Water Management Plan every five years in years ending in "0" and "5". This effort helps ensure we can provide our service area, including the City of Orange, with a reliable supply of high-quality water to meet current and future demand.

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Sincerely,

Fiona M. Sanchez
Director of Water Resources



IRVINE RANCH WATER DISTRICT

15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

May 25, 2016

Mr. Douglas Stack
Public Works Director
City of Tustin
300 Centennial Way
Tustin, CA 92780

Dear Mr. Stack:

As you may be aware, pursuant to the California Water Code, Irvine Ranch Water District (IRWD) updates its Urban Water Management Plan every five years in years ending in "0" and "5". This effort helps ensure we can provide our service area, including the City of Tustin, with a reliable supply of high-quality water to meet current and future demand.

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Sincerely,

Fiona M. Sanchez
Director of Water Resources

APPENDIX D: Water Loss Reporting
Irvine Ranch Water District
Urban Water Management Plan



Water Audit
A-113



AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

American Water Works Association.

Water Audit Report for: **Irvine Ranch Water District**

Reporting Year: **2014-2015** **7/2014 - 6/2015**

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 78 out of 100 ***

System Attributes:

Apparent Losses:	1,379.159	acre-ft/yr
+ Real Losses:	2,711.594	acre-ft/yr
= Water Losses:	4,090.753	acre-ft/yr

? Unavoidable Annual Real Losses (UARL): **2,269.55** acre-ft/yr

Annual cost of Apparent Losses: **\$1,171,486**

Annual cost of Real Losses: **\$2,303,282** Valued at Customer Retail Unit Cost
Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial:

Non-revenue water as percent by volume of Water Supplied:	7.1%	
Non-revenue water as percent by cost of operating system:	15.1%	Real Losses valued at Customer Retail Unit Cost

Operational Efficiency:

Apparent Losses per service connection per day:	12.06	gallons/connection/day
Real Losses per service connection per day:	23.70	gallons/connection/day
Real Losses per length of main per day*:	N/A	
Real Losses per service connection per day per psi pressure:	0.28	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): **2,711.59** acre-feet/year

? Infrastructure Leakage Index (ILI) [CARL/UARL]: **1.19**

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline

APPENDIX E: Copy of SBx7-7 Tables

Irvine Ranch Water District Urban Water Management Plan

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	97,216	Acre Feet
	2008 total volume of delivered recycled water	14,358	Acre Feet
	2008 recycled water as a percent of total deliveries	14.77%	Percent
	Number of years in baseline period ^{1, 2}	15	Years
	Year beginning baseline period range	1991	
	Year ending baseline period range ³	2005	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2004	
	Year ending baseline period range ⁴	2008	
¹ If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period.			
² The Water Code requires that the baseline period is between 10 and 15 years. However, DWR recognizes that some water suppliers may not have the minimum 10 years of baseline data.			
³ The ending year must be between December 31, 2004 and December 31, 2010.			
⁴ The ending year must be between December 31, 2007 and December 31, 2010.			

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☐	1. Department of Finance (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
☐	2. Persons-per-Connection Method
☐	3. DWR Population Tool
☒	4. Other DWR recommends pre-review
IRWD used data from Cal State Fullerton's Center for Demographic Research. Peter Brostrom at DWR stated the method is approved by DWR for agencies in the Municipal Water District of Orange County's regional plan, which includes IRWD.	

SB X7-7 Table 3: Service Area Population		
Year		Population
10 to 15 Year Baseline Population		
Year 1	1991	204,798
Year 2	1992	210,357
Year 3	1993	215,469
Year 4	1994	219,040
Year 5	1995	222,058
Year 6	1996	225,982
Year 7	1997	231,284
Year 8	1998	237,055
Year 9	1999	242,816
Year 10	2000	250,574
Year 11	2001	256,610
Year 12	2002	266,937
Year 13	2003	275,710
Year 14	2004	282,869
Year 15	2005	293,616
5 Year Baseline Population		
Year 1	2004	282,869
Year 2	2005	293,616
Year 3	2006	302,909
Year 4	2007	310,777
Year 5	2008	320,764
2015 Compliance Year Population		
2015		379,510

SB X7-7 Table 4: Annual Gross Water Use *

Baseline Year <i>Fm SB X7-7 Table 3</i>		Volume Into Distribution System <i>This column will remain blank until SB X7-7 Table 4-A is completed.</i>	Deductions					Annual Gross Water Use
			Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water <i>This column will remain blank until SB X7-7 Table 4-B is completed.</i>	Water Delivered for Agricultural Use	Process Water <i>This column will remain blank until SB X7-7 Table 4-D is completed.</i>	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1991	67,918	-	-	396	18,013	-	49,509
Year 2	1992	65,724	-	-	479	19,594	-	45,651
Year 3	1993	63,660	-	-	470	16,249	-	46,941
Year 4	1994	62,710	-	-	493	12,543	-	49,674
Year 5	1995	61,737	-	-	504	10,048	-	51,185
Year 6	1996	69,305	160	-	368	12,605	-	56,172
Year 7	1997	78,825	220	-	389	15,312	-	62,905
Year 8	1998	67,513	118	-	356	12,106	-	54,933
Year 9	1999	76,487	207	-	251	13,794	-	62,235
Year 10	2000	84,465	217	-	250	16,406	-	67,593
<i>Year 11</i>	2001	77,170	197	-	272	11,413	-	65,288
<i>Year 12</i>	2002	81,072	1,732	-	300	12,523	-	66,517
<i>Year 13</i>	2003	73,335	786	-	425	10,748	-	61,376
<i>Year 14</i>	2004	79,535	590	-	453	10,797	-	67,695
<i>Year 15</i>	2005	73,160	369	-	500	8,654	-	63,638
10 - 15 year baseline average gross water use								58,087
5 Year Baseline - Gross Water Use								
Year 1	2004	79,535	590	-	437	10,797	-	67,711
Year 2	2005	73,160	369	-	487	8,654	-	63,651
Year 3	2006	75,826	440	-	391	9,599	-	65,397
Year 4	2007	86,794	199	-	527	10,587	-	75,481
Year 5	2008	82,858	191	-	342	8,799	-	73,526
5 year baseline average gross water use								69,153
2015 Compliance Year - Gross Water Use								
2015		71,451	162	-	10,110	6,153	-	55,026
* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3								

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)

Complete one table for each source.

Name of Source		Imported Treated Water		
This water source is:				
☐	The supplier's own water source			
☒	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment * <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1991	33,226		33,226
Year 2	1992	24,792		24,792
Year 3	1993	26,671		26,671
Year 4	1994	28,490		28,490
Year 5	1995	29,589		29,589
Year 6	1996	33,067		33,067
Year 7	1997	37,144		37,144
Year 8	1998	31,829		31,829
Year 9	1999	34,273		34,273
Year 10	2000	29,585		29,585
Year 11	2001	30,642		30,642
Year 12	2002	28,029		28,029
Year 13	2003	21,076		21,076
Year 14	2004	26,553		26,553
Year 15	2005	20,920		20,920
5 Year Baseline - Water into Distribution System				
Year 1	2004	26,553		26,553
Year 2	2005	20,920		20,920
Year 3	2006	23,375		23,375
Year 4	2007	24,747		24,747
Year 5	2008	21,911		21,911
2015 Compliance Year - Water into Distribution System				
2015	12,952			12,952
* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document				

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Treated Groundwater		
This water source is:				
☒	The supplier's own water source			
☐	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment * <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,991	19524.4		19,524
Year 2	1,992	20918.2		20,918
Year 3	1,993	20968.9		20,969
Year 4	1,994	21088.8		21,089
Year 5	1,995	20564		20,564
Year 6	1,996	21277		21,277
Year 7	1,997	21040.5		21,041
Year 8	1,998	21035.6		21,036
Year 9	1,999	22656.5		22,657
Year 10	2,000	29443		29,443
Year 11	2,001	29950.1		29,950
Year 12	2,002	31998.5		31,999
Year 13	2,003	36822		36,822
Year 14	2,004	35207.3		35,207
Year 15	2,005	37099.8		37,100
5 Year Baseline - Water into Distribution System				
Year 1	2,004	35207.3		35,207
Year 2	2,005	37099.8		37,100
Year 3	2,006	39293		39,293
Year 4	2,007	40146.5		40,147
Year 5	2,008	42075.9		42,076
2015 Compliance Year - Water into Distribution System				
2015	46,306			46,306
* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document				

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Untreated Supply - Irvine Lake		
This water source is:				
☒	The supplier's own water source			
☒	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment <i>* Optional</i> (+/-)	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,991	11944.8		11,945
Year 2	1,992	16677.8		16,678
Year 3	1,993	11576.6		11,577
Year 4	1,994	7838.7		7,839
Year 5	1,995	7247.7		7,248
Year 6	1,996	10479.8		10,480
Year 7	1,997	12575.1		12,575
Year 8	1,998	10145.1		10,145
Year 9	1,999	15754.4		15,754
Year 10	2,000	16703.2		16,703
Year 11	2,001	11204.1		11,204
Year 12	2,002	11080.2		11,080
Year 13	2,003	9675		9,675
Year 14	2,004	9132.7		9,133
Year 15	2,005	7054.7		7,055
5 Year Baseline - Water into Distribution System				
Year 1	2,004	9132.7		9,133
Year 2	2,005	7054.7		7,055
Year 3	2,006	8792.3		8,792
Year 4	2,007	11021.5		11,022
Year 5	2,008	9360.8		9,361
2015 Compliance Year - Water into Distribution System				
2015	3,035			3,035
* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document				
Irvine Lake source includes untreated imported water into the lake plus native water in the lake.				

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Non-potable wells and RWS		
This water source is:				
☒	The supplier's own water source			
☐	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment * <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,991	3223.2		3,223
Year 2	1,992	3336.1		3,336
Year 3	1,993	4443.6		4,444
Year 4	1,994	5291.8		5,292
Year 5	1,995	4336.9		4,337
Year 6	1,996	4481.8		4,482
Year 7	1,997	8066.1		8,066
Year 8	1,998	4503		4,503
Year 9	1,999	3802.9		3,803
Year 10	2,000	8733.8		8,734
Year 11	2,001	5374		5,374
Year 12	2,002	9963.7		9,964
Year 13	2,003	5761.9		5,762
Year 14	2,004	8641.3		8,641
Year 15	2,005	8085.4		8,085
5 Year Baseline - Water into Distribution System				
Year 1	2,004	8641.3		8,641
Year 2	2,005	8085.4		8,085
Year 3	2,006	4366.4		4,366
Year 4	2,007	10878.4		10,878
Year 5	2,008	9510.5		9,511
2015 Compliance Year - Water into Distribution System				
2015	9,158			9,158
* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document				
NOTES: Non-potable wells recycled water supplement				

SB X7-7 Table 4-B: Indirect Recycled Water Use Deduction (For use only by agencies that are deducting indirect recycled water)

Baseline Year <i>Fm SB X7-7 Table 3</i>		Surface Reservoir Augmentation					Groundwater Recharge			Total Deductible Volume of Indirect Recycled Water Entering the Distribution System
		Volume Discharged from Reservoir for Distribution System Delivery	Percent Recycled Water	Recycled Water Delivered to Treatment Plant	Transmission/ Treatment Loss	Recycled Volume Entering Distribution System from Surface Reservoir Augmentation	Recycled Water Pumped by Utility*	Transmission/ Treatment Losses	Recycled Volume Entering Distribution System from Groundwater Recharge	
10-15 Year Baseline - Indirect Recycled Water Use										
Year 1	1991			-		-	396		396	396
Year 2	1992			-		-	479		479	479
Year 3	1993			-		-	470		470	470
Year 4	1994			-		-	493		493	493
Year 5	1995			-		-	504		504	504
Year 6	1996			-		-	368		368	368
Year 7	1997			-		-	389		389	389
Year 8	1998			-		-	356		356	356
Year 9	1999			-		-	251		251	251
Year 10	2000			-		-	250		250	250
Year 11	2001			-		-	272		272	272
Year 12	2002			-		-	300		300	300
Year 13	2003			-		-	425		425	425
Year 14	2004			-		-	453		453	453
Year 15	2005			-		-	500		500	500
5 Year Baseline - Indirect Recycled Water Use										
Year 1	2004			-		-	437		437	437
Year 2	2005			-		-	487		487	487
Year 3	2006			-		-	391		391	391
Year 4	2007			-		-	527		527	527
Year 5	2008			-		-	342		342	342
2015 Compliance - Indirect Recycled Water Use										
2015				-		-	10,110		10,110	10,110
*Suppliers will provide supplemental sheets to document the calculation for their input into "Recycled Water Pumped by Utility". The volume reported in this cell must be less than total groundwater pumped - See Methodology 1, Step 8, section 2.c.										
NOTES: IRWD's percentage of Groundwater Replenishment System, based on percentage of groundwater pumped from OC Basin (managed by Orange County Water District)										

SB X7-7 Table 4-C.4: Process Water Deduction Eligibility

Criteria 4

Disadvantaged Community

Use IRWM DAC Mapping tool

http://www.water.ca.gov/irwm/grants/resources_dac.cfm

California Median Household Income	Service Area Median Household Income	Percentage of Statewide Average	Eligible for Exclusion? Y/N
2015 Compliance Year - Process Water Deduction Eligibility			
2010	\$53,046	0%	YES
A "Disadvantaged Community" is a community with a median household income less than 80 percent of the statewide average.			

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Annual Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1991	204,798	49,509	216
Year 2	1992	210,357	45,651	194
Year 3	1993	215,469	46,941	194
Year 4	1994	219,040	49,674	202
Year 5	1995	222,058	51,185	206
Year 6	1996	225,982	56,172	222
Year 7	1997	231,284	62,905	243
Year 8	1998	237,055	54,933	207
Year 9	1999	242,816	62,235	229
Year 10	2000	250,574	67,593	241
<i>Year 11</i>	2001	256,610	65,288	227
<i>Year 12</i>	2002	266,937	66,517	222
<i>Year 13</i>	2003	275,710	61,376	199
<i>Year 14</i>	2004	282,869	67,695	214
<i>Year 15</i>	2005	293,616	63,638	193
10-15 Year Average Baseline GPCD				214
5 Year Baseline GPCD				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use
Year 1	2004	282,869	67,711	214
Year 2	2005	293,616	63,651	194
Year 3	2006	302,909	65,397	193
Year 4	2007	310,777	75,481	217
Year 5	2008	320,764	73,526	205
5 Year Average Baseline GPCD				204
2015 Compliance Year GPCD				
2015		379,510	55,026	129

SB X7-7 Table 6: Gallons per Capita per Day
Summary From Table SB X7-7 Table 5

10-15 Year Baseline GPCD	214
5 Year Baseline GPCD	204
2015 Compliance Year GPCD	129

SB X7-7 Table 7: 2020 Target Method
Select Only One

Target Method		Supporting Documentation
☒	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D <i>Contact DWR for these tables</i>
☐	Method 3	SB X7-7 Table 7-E
☐	Method 4	Method 4 Calculator

SB X7-7 Table 7-A: Target Method 1
 20% Reduction

10-15 Year Baseline GPCD	2020 Target GPCD
214	171

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target

5 Year Baseline GPCD <i>From SB X7-7 Table 5</i>	Maximum 2020 Target ¹	Calculated 2020 Target ²	Confirmed 2020 Target
204	194	171	171

¹Maximum 2020 Target is 95% of the 5 Year Baseline GPCD
 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target. ²2020

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target <i>Fm SB X7-7 Table 7-F</i>	10-15 year Baseline GPCD <i>Fm SB X7-7 Table 5</i>	2015 Interim Target GPCD
171	214	192

SB X7-7 Table 9: 2015 Compliance								
Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments <i>(in GPCD)</i>					2015 GPCD <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015?
		Enter "0" if Adjustment Not Used			TOTAL Adjustments	Adjusted 2015 GPCD		
		Extraordinary Events	Weather Normalization	Economic Adjustment				
129	192	-	-	-	-	129	129	YES

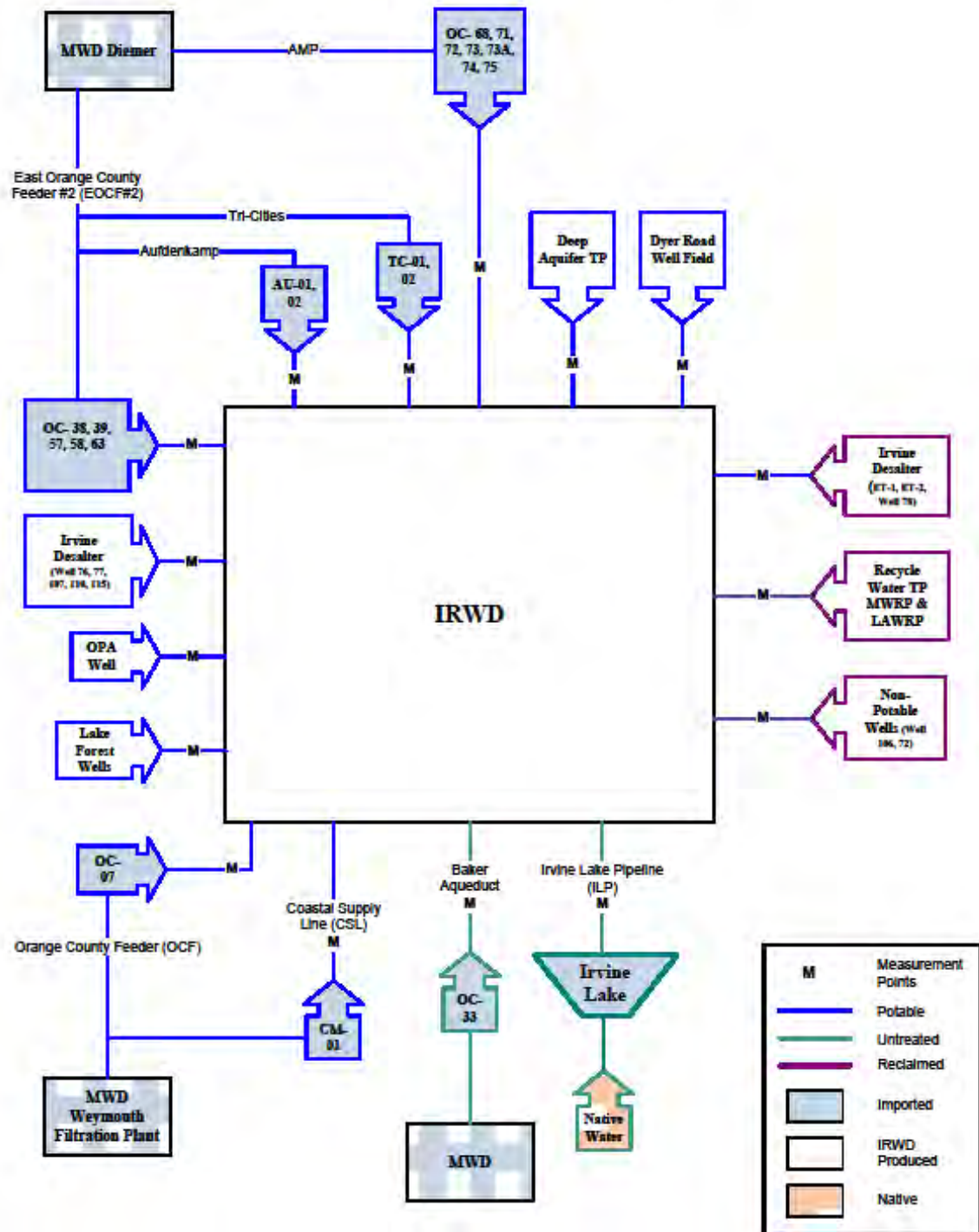
APPENDIX F: Distribution System Schematic

Irvine Ranch Water District

Urban Water Management Plan

IRWD's distribution system boundaries are defined by points at which water enters IRWD's distribution system. Those points include master meters for water imported from Metropolitan Water District of Southern California, master meters on IRWD wells for local groundwater, master meters for untreated water entering the distribution system from Irvine Lake, and meters on wells and treatment plants for other non-potable sources of supply, including recycled water.

IRWD Retail Water Supplier System Schematics



APPENDIX G: Water Shortage Contingency Plan
Irvine Ranch Water District
Urban Water Management Plan

WATER SHORTAGE CONTINGENCY PLAN

October 2014

PART I: EXECUTIVE SUMMARY

Background

IRWD's response to a water supply shortage varies depending on the magnitude and nature of the shortfall. A supply shortage is defined as a reduction in total supplies, typically resulting from one of two conditions:

- Drought conditions that limit availability of imported water or local supplies.
- System interruptions that result from emergency outage conditions.

IRWD's response to any water supply shortage depends on the cause, severity and anticipated duration of the shortage. Use of local supplies, storage and other supply augmentation measures can mitigate shortages, and are assumed to be in use to the maximum extent possible during declared shortage levels. The resultant net shortage levels can be addressed by demand reduction programs, as described in this Plan. This document is intended primarily to address drought supply shortages, however at the discretion of the Board, this Plan may also be used to address system outages, although these are more explicitly addressed in IRWD's Water Supply Reliability Study (June 2008).

Supply Shortage Conditions

Given the assumption that the level of water supply shortage experienced at any point in time is net of mitigating supply factors, two basic considerations emerge in formulating a water shortage plan: (1) the shortage must be offset by demand reduction, and (2) the demand reduction program must be incremental in nature since shortage conditions are normally progressive. This means that a shortage contingency plan should be designed to address varying levels of supply deficits with recommended actions predicated upon the actual deficit level. Therefore this plan develops a shortage response based upon four levels of supply cutbacks:

- *Level One* is a shortage warning and low level shortage condition with supply reductions of up to 10%.
- *Level Two* is a significant shortage condition indicated by shortages between 10 to 25%.
- *Level Three* is a severe shortage condition indicated by shortages ranging from 25 to 40%.
- *Level Four* is a crisis shortage condition resulting when shortages exceed 40%.

Each shortage level will trigger a set of response measures aimed at reducing demand to the level of supply. Steps taken within each level should be considered cumulative; that is, Level Two responses will include most if not all the responses in Level One plus the additional actions necessary to meet the Level Two condition. Level Three will include most if not all the responses in Level Two plus the additional measures necessary to meet a Level Three condition, and so on.

However, if a shortage condition persisted over an extended period of time, it may be necessary to implement a higher level response to sustain required reductions. Thus both the severity of supply reductions and the duration over which the reductions are experienced will determine the appropriate response.

Supply Shortage Response Measures

In addition to basic measures which are always in effect, there are three types of response measures that can be implemented by the District in the event of a supply shortage.

- Voluntary measures through increased public outreach, education and awareness (V)
- Demand management through the use of the District's allocation-based rate structure (D).
- Mandatory measures through restrictions on use and enforcement (M).

In general terms, voluntary customer responses and demand management through the use of the allocation-based rate structure will be used in all four shortage levels identified in this plan. A combination of voluntary and demand management strategies are likely to be sufficient to address virtually all shortage levels. Responses to shortages in Levels Three and Four may also include restrictions on use and enforcement. Below is a summary of anticipated supply shortage response measures.

Supply Shortage Response Measure	IRWD Supply Shortage Level	Voluntary (V), Demand Management (D) or Mandatory (M)
Public Education	Always In Effect	
Prohibition of Gutter Flooding	Always In Effect	
Prohibition of Leaks	Always In Effect	
Prohibition of Water Waste	Always In Effect	
Enhanced Public Awareness Campaign	Level One	V
Target Over-Allocation Customers for Surveys/Assistance	Level One	V
Review and Adjust Customer Allocations and/or Tiers as necessary	Level One/Two	D
Reduce Potable and Untreated Irrigation and Agricultural Allocations by 30% or other percentage specified in the shortage level declaration	Level Two	D
Reduce Potable and Untreated Irrigation Allocations by 60% or other percentage specified in the shortage level declaration	Level Three	D
Reduce Commercial, Industrial and Institutional Potable Allocations by 10% or other percentage specified in the shortage level declaration	Level Three	D
Increase Rates for Over-Allocation Use Tiers	Level Three/Four	D
Further reduction of allocations, tightening of tiers and rate increases to achieve necessary demand reductions	Level Four	D/M
Eliminate Outdoor Use (100% reduction)	Level Four	D/M
Mandatory restrictions and enforcement	Level Four	M

These response measures may be applied singly or in combination and may vary according to the severity and duration of the shortage. Other measures may be applied in lieu of or in addition to those described in this plan. The application of shortage level response measures or restrictions may vary as to type of water service. In the implementation of measures or restrictions on potable water service through the declaration of a shortage level, the District will determine and set forth how and to what extent, if any, such measures or restrictions, or different measures or restrictions, will be applied to non-potable water services furnished by the District. IRWD's Board of Directors will declare the level of shortage based on water supply conditions.

Imported Water Supply Shortage

An imported water supply shortage represents one of the main causes of a supply shortage for the District. In 2008 approximately one-third of IRWD's water supply was imported through Metropolitan Water District of Southern California (MWD). While potential reductions in imported water deliveries from MWD can be mitigated to some extent by the addition of other local supplies, such as increased pumping from groundwater facilities, or the conversion of certain potable water uses to recycled water (see IRWD's Water Resources Master Plan (WRPM) and Urban Water Management Plan (UWMP)), the range of shortages projected herein is assumed to be net of those supply augmentation measures. That is, supply shortages identified as, say 20%, is the actual shortage confronted by the District's customers after supply augmentation factors have been implemented. This plan is intended to develop a set of options to reduce demand; the development of supply augmentation options is outside the scope of this analysis and is addressed in the WRMP and UWMP.

In February 2008 the MWD adopted a Water Supply Allocation Plan based on its declared level of shortage. IRWD has performed analysis relating to varying hydrologic conditions, availability of supply augmentation measures and additional conservation. Based on the results of the modeling, Table 1 illustrates IRWD water shortage levels correlated with MWD's allocation shortage plan.

Table 1: IRWD Water Shortage Levels Correlated with MWD Allocation Stages:

MWD Stage	MWD Supply Shortage	IRWD Reliability Range	IRWD Shortage Level
1	5%	97-100%	1
2	10%	95-100%	1
3	15%	93-100%	1
4	20%	91-100%	1
5	25%	88-99%	1 or 2
6	30%	86-97%	2
7	35%	84-95%	2
8	40%	82-92%	2
9	45%	79-89%	2
10	50%	77-88%	2 or 3

The above table assumes a dry local hydrology for multiple years and limited access to groundwater. Actual correlations may differ depending on local hydrology at the time of the shortage.

PART II: SHORTAGE RESPONSE STRATEGIES

Basic Measures Always In Effect

The following basic measures are considered good water management practices, and are always in effect regardless of whether a shortage level is declared. These measures are contained in IRWD's Rules and Regulations (Section 15):

- (a) *Gutter Flooding* - No person shall cause or permit any water furnished to any property within the District to run or to escape from any hose, pipe, valve, faucet, sprinkler, or irrigation device into any gutter or otherwise to escape from the property if such running or escaping can reasonably be prevented.
- (b) *Leaks* - No person shall permit leaks of water that he has the authority to eliminate.
- (c) *Washing Hard Surface Areas* - Washing down hard or paved surfaces, including, but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards.
- (d) *Waste* - No person shall cause or permit water under his control to be wasted. Wasteful usage includes, but is not limited to, the uses listed in Section 13(a) of Exhibit 1 to the Memorandum of Understanding Regarding Urban Water Conservation in California, dated December 11, 2002, as amended from time to time, or the counterpart of said list contained in any successor document.

Under the District's allocation-based conservation rate structure that is in effect during non-shortage conditions, customer allocations are limited to the amount that is reasonable for the customer's needs and property characteristics, and reflect the exclusion of these types of wasteful water uses.

Water Supply Shortage Response Measures

IRWD would employ a range of measures in response to potential shortages depending on the level and duration. While the measures will be applied incrementally, this Plan builds in a level of flexibility to adopt additional measures to ensure the appropriate level of demand reduction. The use of IRWD's allocation-based rates and the assessment of higher rates for over-allocation or wasteful use provides IRWD with an additional strategy to help achieve demand reductions.

For illustration purposes, Table 2 shows water reductions requirements that would be required during three shortage conditions, using water demand data from 2007 (See Appendix A for total treated and untreated water demands).

Table 2: Water Conservation Requirements – Acre-Feet:

Shortage Percentage	10%	25%	40%
Treated and Untreated Water	6,673	16,683	26,693
Treated Water Only	5,874	14,686	23,497

In order to achieve the necessary demand reductions, IRWD's measures will progress from voluntary reductions to reduction of discretionary uses through financial incentives or restrictions to reduction of non-discretionary uses through financial incentives or restrictions based on the level of the shortage. Most shortages, unless extreme (Level Four or system outage), can be addressed with a combination of voluntary measures and a reduction of discretionary uses through financial incentives.

Response Measures: Voluntary

The single most important step the District can take in implementing voluntary measures is to inform the public consciousness in order to help reduce water demand. It should be noted that the District has implemented on-going water use efficiency and outreach programs since the early 1990's, and those efforts combined with the allocation-based tiered rates, have resulted in somewhat hardened levels of demand. The District will employ additional strategies to achieve the necessary demand reductions in a shortage situation. Most of the effort will be focused on providing additional outreach to high usage tier customers.

1. *Public Outreach:* An outreach program will educate the public and local leaders on the water supply situation; what actions are proposed; what the intended achievements are; and how these actions are to be implemented. This will be accomplished by having key District personnel present to groups such as the city council, community associations, chambers of commerce, business groups, etc. An endorsement of proposed District plans by these groups will assist in obtaining the public support essential in confronting water shortages.

The public at large will be informed through press releases, billing inserts, water conservation booths, community association meetings, newsletters, church groups, etc. Literature will be provided on the shortage condition, conservation methods, and water-saving devices and be distributed through the fire and police stations, libraries, city hall, schools, shopping center,

recreation facilities, etc. Certain behavior modifications, such as those listed below, can help address the need for immediate conservation.

- Survey plumbing every two months and eliminate water loss resulting from leaky plumbing fixtures.
 - Restrict showers to five minutes or less; fill the bath tub no more than one-quarter full.
 - Do not run water unnecessarily while shaving, brushing teeth, bathing, preparing food, etc.
 - Run only full loads of laundry and dishes.
 - Reduce landscape watering.
 - Fill swimming pools to a lower level to minimize water loss due to splashing.
2. *Education Programs:* School programs will focus on the water shortage situation. In addition to the usual District background information, the supply situation and conservation methods will be highlighted. Demonstrations using sample water-saving devices can be given; literature will be distributed.
 3. *Logo:* A water conservation or shortage response logo will be adopted and vigorously promoted as a symbol to influence public attitudes toward water use.
 4. *Media:* Extensive use of all available forms of media will be employed and coordinated with other agencies. This includes public service messages on radio and television and press releases in local newspapers. The messaging and level of response will be correlated with the need for demand reductions.
 5. *Target Over-Allocation Customers:* District staff will ramp up its ongoing outreach efforts to more aggressively target over-allocation customers. Over-allocation use is considered wasteful use; customers in these tiers will be contacted via letter, telephone, e-mail and other means. On-site assistance/audits will help identify the source of the over-allocation use and provide recommendations to address the problem.
 6. *Customer Service:* Customers will be encouraged to work together to save water and to call IRWD's water use efficiency experts if assistance is needed to help find water leaks or to use water more water efficiently. If someone observing water waste within IRWD's service area is

unsure who the property owner is they can call in to IRWD's Customer Service Department for assistance. IRWD staff will contact the customer associated with the property and offer on-site assistance and recommendations to address the problem.

Response Measures: Demand Management and Use of Allocation-Based Rates

The allocation-based tiered rate structure adopted by IRWD in 1991 is intended to function as a tool to promote ongoing water use efficiency. Water is allocated on an individual customer basis established upon specific indoor uses and outdoor irrigation needs. The structure includes a five-tiered system for residential customers and a four-tiered system for non-residential customers, and charges progressively higher rates for progressively higher amounts of water used. Use within a customer's allocation is encouraged through a significantly tiered commodity pricing system which discourages wasteful use. The allocation-based tiered rates provide IRWD with an effective mechanism to alter demand through pricing.

Analysis of Usage and Tiers

A detailed analysis of the usage and tiers, with the most recently available data, is one of the first steps that should be undertaken in developing demand management strategies, including potential adjustments to the tiers and allocations. Appendix A: 2007 Annual Usage and Tier Break-Down shows the annual usage and tier break-down information for treated and untreated water sources, based on data from calendar year 2007. The first two tiers shown (1 and 2) indicate usage within allocation. Tiers 3 to 5 indicate over-allocation use.

Basic water allocations should be reviewed on a periodic basis taking into consideration changes since the most recent review of these allocations, including changes to the plumbing code that improve water use efficiency, water conservation devices and more efficient irrigation systems available to the average customer. Beyond this, there are several mechanisms that can be employed either separately or in combination to achieve the necessary level of demand reductions.

Allocation Adjustment Strategies for Demand Management

1. Adjusting the Tier Thresholds: This strategy does not adjust the actual allocation formula itself, but rather adjusts the percentage thresholds for the over-allocation tiers. The current tiers and thresholds for the various account types are shown in Table 3. Adjusting the tier thresholds downward would have the effect of shifting more use into the higher over-allocation tiers. Customers in these tiers would be subjected to increased rates depending on the extent of their use (percentage of use above allocation). Reducing the tier thresholds would send stronger price signals by moving over-using customers into the higher tiers.

Table 3: Allocation-Based Rates Tier Thresholds

Tier	Percentage of Allocation		
	Residential	Irrigation	Non-Residential
Low Volume	0-40%	0-40 %	N/A
Base	41-100%	41 – 100%	0-100%
Inefficient	101 – 150%	101 – 110%	101 – 110%
Excessive	151 -200%	111 -120%	111 -120%
Wasteful	201% +	121% +	121% +

2. Allocation Adjustments: An adjustment to the allocation entails refining the allocation formula. This can be done either as a simple percentage adjustment or by adjusting a specific portion of the formula. For example, residential allocations are made up of an indoor plus an outdoor allocation component. It is possible to adjust the outdoor component downward to allow for less outdoor irrigation or eliminate it altogether depending on the need for demand reductions. Water allocations could also be set to levels that would eliminate all outdoor water use including irrigation, car washing, pool filing, agricultural use of non-recycled water etc. Under this scenario the indoor component could be left the same or could be altered as necessary.
3. Rate Increases for Over-Allocation Use: This approach entails adopting higher rates for over-allocation use, and would be linked to purchases of imported water at Metropolitan’s penalty rates, among other things.

These three types of allocation adjustments can be established and refined based on customer response in such a way that specified uses are discouraged. The allocations can be established in such a way that

certain uses are not included in the allocation. Customers engaging in these uses would receive over-allocation tier charges on their water bill.

In Levels One and Two, a combination of adjusting the tier thresholds and/or the allocations, as necessary, is likely to be sufficient to achieve the required demand reductions. In Levels Three and Four, those strategies, plus the use of rate increases with stronger price signals for over-allocation use, could be used to achieve further demand reductions. In all cases, adjustments to the allocations, tiers and rates will be at the discretion of the Board, and will be based on an assessment of the supply shortage, customer response and need for demand reductions.

Enforcement Mechanism:

Application of any or a combination of the allocation adjustment strategies will place customers into the higher usage tiers, which acts as a reporting and enforcement mechanism by creating a strong financial incentive for customers to reduce demands. The higher rates for above allocation use reflect and incorporate the cost of additional demand management measures, as well as the additional cost to IRWD of acquiring water supplies in a shortage.

Response Measures: Mandatory

Extreme shortage conditions (severe Level Three and Level Four) may require that the District adopt restrictions and/or ration water for health and safety purposes only. A system outage requires a rapid response based on the fact that there is typically a need for more immediate action to deal with an emergency situation. In a system outage emergency, the IRWD Board of Directors will declare a shortage based upon the projected impact of the system outage. Since adjustments to tiers and allocations typically have a time lag in implementation and effect, those measures will be of limited usefulness in a system outage. Therefore, in addition to the measures always in effect, the Board may impose any combination of the following mandatory measures and rationing to alleviate demands.

1. *Potable Irrigation Ban:* Outdoor irrigation would be the initial target for any demand reductions. Demand reductions or eliminations that cannot be met through voluntary measures and financial incentives related to adjustments in the allocation based rate structure, would be attained through a ban on potable irrigation. Table 4 indicates the potential demand reductions that could be

attained from 30%, 60% and complete elimination of outdoor irrigation. This includes dedicated landscapes, mixed use commercial accounts and residential outdoor irrigation.

Table 4: Potential Water Savings (AF) Based on Irrigation Cutbacks:

% Irrigation Cutback	30%	60%	100%
Potable Irrigation	8,980	17,959	29,932
Untreated Irrigation	351	701	1,169
Total	9,330	18,660	31,101

2. *Ban on car-washing and pool-filling:* Demand reductions on car-washing and pool filling that cannot be achieved through voluntary measures and financial incentives related to adjustments in the allocation-based rate structure would be attained through a ban on these actions.

Enforcement Measures

1. *Flow restrictors:* Under extreme conditions of noncompliance, the District could install flow restrictors in individual service lines. Thus, water would be available for drinking, cooking, sponge baths, and slow fill of toilet tanks, but showers and other high volume type uses would not be possible. Under these conditions individual customer reaction would be severe. It would probably be necessary to augment the customer service field service staff to maintain surveillance of these services to assure that unauthorized changes are not made by the customer.
2. *Mandatory Restrictions and Fines:* The District's ability to establish restrictions on water use and to possibly discontinue non-health and safety related service in the case of repeat violators is provided for under the Water Code of the State of California Chapters 3 and 3.5).

PART III: SHORTAGE RESPONSE PLAN

IRWD Water Supply Shortage Levels

In the event of a shortage, IRWD's Board of Directors, in accordance with the provisions of the California Water Code, will determine and declare the shortage level based on an assessment of the available supplies and demands, and may adjust the measures applied based on response in order to achieve the appropriate level of reduction. The following are the levels of shortage which may be declared; the approximate ranges of conditions the levels represent; and the reductions to be achieved:

Level One (Shortage Warning - up to 10% shortage):

Measures selected would be designed to achieve the following objectives:

Objectives:

- Public awareness of water supply situation and conservation opportunities
- Encourage diligent repair of water leaks
- Reduce over-allocation use
- Reduce outdoor over-irrigation

Measures: The measures used in Level One are primarily voluntary actions that modify customer behavior resulting from an enhanced public awareness campaign. In addition, increased outreach targeted toward over-allocation customers to help them identify the source of their overuse, and correct the problem should be sufficient to meet the objectives in Level One.

Costs and Outcomes: Based on 2007 data, a supply shortage of 10% represents approximately 6,600 AF. Information from the 2007 Annual Usage and Tier Break-Down presented in Appendix A indicates that over allocation use (sum of usage in tiers 3-5) accounts for approximately 4,200 AF of non-recycled water usage. Therefore, reducing the over-allocation use, combined with a strong public awareness campaign is expected to be sufficient to achieve the necessary reductions in Level One. The cost to implement voluntary responses is minimal, especially considering the return in reduced demand on the investment. None of the recommended steps would be difficult to implement or administer. The District has the basic infrastructure to pursue most voluntary measures through the Public Affairs and Conservation Departments. However, the District may need to conduct training and adjust its staff resources to effectively provide additional outreach to high usage tier customers.

Level Two (Significant Shortage Condition - 10-25% shortage): Measures selected would be designed to incorporate the objectives listed under Level One, and achieve the following further reduction in use:

Objectives:

- Review of allocations and potential adjustments to reduce outdoor irrigation and agricultural uses by 30%, or a percentage to be specified in the shortage declaration, based on a supply and demand analysis.
- Discourage filling of fountains, pools and water features and other discretionary uses.

Measures: Use of allocation and tier threshold adjustments is expected to be sufficient to achieve the necessary demand reduction objectives in a Level Two shortage. Adjustments to the allocations would employ the demand management/allocation adjustment strategies described in Part II of the document (pages 8-9).

Costs and Outcomes: A Level Two shortage can be offset by voluntary public response and perhaps minimal additional measures, such as reducing water allocations for non-crucial water uses including irrigation demands. Again using the 2007 Annual Usage and Tier Break-Down in Appendix A, a 30% reduction in potable irrigation and agricultural use (potable and untreated) would reduce the demands by an additional 9,300 AF , which combined with the Level One measures would result in a reduction in total demand of approximately 25%. Currently, there are some agricultural users using treated water within IRWD's service area. However, in the future, this demand is anticipated to decline to zero, in which case additional measures and adjustments to the allocations may be necessary to achieve the necessary Level 2 reductions. Depending on the duration and severity of the Level Two shortage, additional temporary staff in water conservation may be required to increase water awareness campaigns and assist customers with reduced irrigation allocations.

Level Three (Severe Shortage Condition - 25-40% shortage): Measures selected would be designed to incorporate the objectives listed under Level Two, and achieve the following further reduction in use.

Objectives:

- Further reductions in and/or eliminations of non-essential uses.
- Further reduce outdoor irrigation and agricultural uses by 60%, or a percentage to be specified in the shortage declaration, based on an analysis of supply and demand.
- Reduction in commercial, industrial and institutional use by 10%, or a percentage to be specified in the shortage declaration, based on an analysis of supply and demand.

- Elimination of specific municipal uses such as street cleaning, hydrant flushing, water-based recreation, etc.
- Activation of a District Task Force to investigate and consult with high-volume users (i.e. public authorities, universities, community associations, etc.) to assist in reducing the water demands of their properties.

Measures: Again, use of the demand management/allocation-based rate adjustment strategies described in Part II of this document (pages 8-9) will be used as a key tool to achieve these objectives. For example, allocations can be reduced to minimize outdoor use and other discretionary uses by excluding those types of uses from the allocation. If necessary, higher rates for over-allocation use could also be adopted, at the discretion of the Board.

Costs and Outcomes: While it is difficult to precisely estimate the total reduction in demand that would be realized from the cumulative measures taken in Levels One, Two and Three, a Level Three shortage condition could entail significant adjustments to allocations and the implementation of mandatory measures to meet the District's reduction needs. In addition to increasing over-allocation tier charges, all common area landscape irrigation and agricultural irrigation should be reduced drastically, or eliminated completely if necessary by adjusting the water use allocations. Reduction of allocations of treated and untreated water serving irrigation (including residential landscapes) by 60% would reduce total demand by approximately 27% (see Appendix A: 2007 Annual Usage and Tier Break-Down). When one meter serves both internal use and landscaping, monitoring and public support would be needed to ensure that no irrigation takes place. An expanded irrigation group would be effective in these efforts. Untreated or recycled water use would only be reduced as needed based on the impact of reduced wastewater flows to recycled water production. Commercial, industrial and institutional customer allocations would be reduced by up to 10%.

Level Four (Crisis Shortage Condition - more than 40% shortage): Measures selected would be designed to incorporate the objectives listed under Level Three, and achieve the following further reductions in use:

Objectives:

- Cease all outdoor water uses for landscape and agriculture, subject to reserved rights relating to local wells.

Measures: A Level Four shortage would likely require further adjustments to allocations and the use of all the Demand Management/Allocation-Based Rates strategies described in Part II (pages 8-9) at the discretion of the Board. In addition, the Board may determine that it is necessary to use mandatory restrictions and possible discontinuation of non-health and safety related service in order to achieve the necessary demand reductions in a Level Four shortage.

Costs and Outcomes: If over-allocation charges had been previously avoided, this tool would almost certainly be needed at this level of supply deficiencies. Increasing the over-allocation tier charge, formulated upon projected penalty charges imposed by outside supply agencies, could be added to the allocation-based tiered rate structure, sufficient to encourage demand reduction to required levels, pay for an equivalent water conservation project designed to meet the required reduction in demands and provide a source of revenue to purchase additional supplies at penalty rates. Over-allocation usage tier charges would also offset the additional administrative and implementation costs to the district including increased staffing to address shortages and enhancement and expansion of the District's water conservation programs and projects.

Appendix A

2007 Annual Treated and Untreated Water Usage and Tier Break-Down

USER DESCRIPTION	TOTAL (AFY)	Allocation Tier (AFY)				
		1	2	3	4	5
AG-TREATED	975	975	0	0	0	0
AG-UNTREATED	6,669	6,669	0	0	0	0
COMM-TREATED	8,431	8,153	163	114		0
COMM-UNTREATED	9	9	0	0	0	0
CONSTRUCTION	882	882	0	0	0	0
INDUST-TREATED	5,273	5,034	50	32	156	0
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IRRIG-TREATED	6,313	4,442	1,450	81	60	280
IRRIG-UNTREATED	1,164	647	396	22	16	83
MULTI-RESIDENTIAL	10,681	6,608	3,473	425	93	82
PUBLIC AUTHORITY-TREATED	2,652	2,463	26	21	142	0
SINGLE-RESIDENTIAL	23,537	13,138	7,784	1,878	450	287
TOTAL Acre-Feet	66,731	49,166	13,341	2,575	917	733
Percentage	100%	75%	20%	4%	2%	1%

APPENDIX H: Resolution No. 2014-64 Water Shortage Contingency Plan
Irvine Ranch Water District
Urban Water Management Plan

RESOLUTION NO. 2014- 46

RESOLUTION OF THE BOARD OF DIRECTORS OF
IRVINE RANCH WATER DISTRICT ADOPTING
AMENDED WATER SHORTAGE CONTINGENCY PLAN

WHEREAS, California law, as set forth in Government Code Section 10632, requires each urban water supplier's urban water management plan (UWMP) to provide a water shortage contingency analysis including specified elements; and

WHEREAS, Irvine Ranch Water District ("IRWD") initially adopted its Water Shortage Contingency Plan (the "Plan") in 1987, through the adoption of Resolution No. 1987-52 amending Section 15 – "Prohibition of Water Wastage" of IRWD's Rules and Regulations (as currently titled, "Rules and Regulations For Water, Sewer, and Recycled Water and Natural Treatment System Service" and referred to herein as the "Rules and Regulations"); and

WHEREAS, the Plan has been included as an appendix to IRWD's UWMP, and, along with certain information in the UWMP, provides the water shortage contingency analysis elements set forth in Government Code Section 10632; and

WHEREAS, the Plan also serves as the resource and supporting document for the implementation of Section 15 of the Rules and Regulations, now entitled "Water Conservation and Water Supply Shortage Program and Regulations"; and

WHEREAS, the Plan has been updated periodically, through the current version adopted on February 9, 2009 to incorporate conforming revisions relating to the amendment of Section 15 of the Rules and Regulations; and

WHEREAS, the Board of Directors desires to further revise the Plan.

NOW, THEREFORE, THE BOARD OF DIRECTORS OF IRVINE RANCH WATER DISTRICT DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:

Section 1. The amended Irvine Ranch Water District Water Shortage Contingency Plan is hereby adopted.

Section 2. The amended Irvine Ranch Water District Water Shortage Contingency Plan shall serve as a supporting document as referenced in Section 15 of the Rules and Regulations and in the UWMP.

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ADOPTED, SIGNED and APPROVED this 13th day of October, 2014.

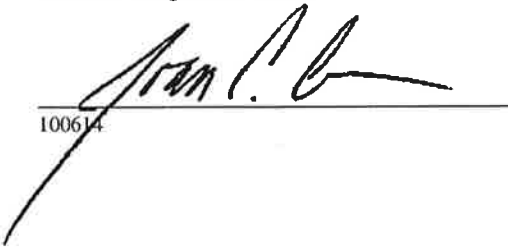


President, IRVINE RANCH WATER
DISTRICT and of the Board of Directors
thereof



Secretary, IRVINE RANCH WATER
DISTRICT and of the Board of Directors
thereof

APPROVED AS TO FORM:
BOWIE, ARNESON, WILES & GIANNONE
IRWD Legal Counsel



100614

STATE OF CALIFORNIA)
) SS.
COUNTY OF ORANGE)

I, Nancy Savedra, Assistant Secretary of the Board of Directors of Irvine Ranch Water District, do hereby certify that the foregoing Resolution was duly adopted by the Board of Directors of said District at a regular board meeting of said Board held on the 13th day of October 2014, and that it was so adopted by the following vote:

AYES:	DIRECTORS	LaMar, Matheis, Reinhart, and Swan
NOES:	DIRECTORS	None
ABSTAIN:	DIRECTORS	None
ABSENT:	DIRECTORS	Withers

(SEAL)



Assistant Secretary of IRVINE RANCH WATER DISTRICT
and of the Board of Directors thereof

STATE OF CALIFORNIA)
) SS.
COUNTY OF ORANGE)

I, Nancy Savedra, Assistant Secretary of the Board of Directors of Irvine Ranch Water District, do hereby certify that the above and foregoing is a full, true and correct copy of Resolution No. 2014-46 of said Board, and that the same has not been amended or repealed.

Dated: _____

Assistant Secretary of IRVINE RANCH WATER DISTRICT
and of the Board of Directors thereof

(SEAL)

WATER SHORTAGE CONTINGENCY PLAN

October 2014

PART I: EXECUTIVE SUMMARY

Background

IRWD's response to a water supply shortage varies depending on the magnitude and nature of the shortfall. A supply shortage is defined as a reduction in total supplies, typically resulting from one of two conditions:

- Drought conditions that limit availability of imported water or local supplies.
- System interruptions that result from emergency outage conditions.

IRWD's response to any water supply shortage depends on the cause, severity and anticipated duration of the shortage. Use of local supplies, storage and other supply augmentation measures can mitigate shortages, and are assumed to be in use to the maximum extent possible during declared shortage levels. The resultant net shortage levels can be addressed by demand reduction programs, as described in this Plan. This document is intended primarily to address drought supply shortages, however at the discretion of the Board, this Plan may also be used to address system outages, although these are more explicitly addressed in IRWD's Water Supply Reliability Study (June 2008).

Supply Shortage Conditions

Given the assumption that the level of water supply shortage experienced at any point in time is net of mitigating supply factors, two basic considerations emerge in formulating a water shortage plan: (1) the shortage must be offset by demand reduction, and (2) the demand reduction program must be incremental in nature since shortage conditions are normally progressive. This means that a shortage contingency plan should be designed to address varying levels of supply deficits with recommended actions predicated upon the actual deficit level. Therefore this plan develops a shortage response based upon four levels of supply cutbacks:

- *Level One* is a shortage warning and low level shortage condition with supply reductions of up to 10%.
- *Level Two* is a significant shortage condition indicated by shortages between 10 to 25%.
- *Level Three* is a severe shortage condition indicated by shortages ranging from 25 to 40%.
- *Level Four* is a crisis shortage condition resulting when shortages exceed 40%.

Each shortage level will trigger a set of response measures aimed at reducing demand to the level of supply. Steps taken within each level should be considered cumulative; that is, Level Two responses will include most if not all the responses in Level One plus the additional actions necessary to meet the Level Two condition. Level Three will include most if not all the responses in Level Two plus the additional measures necessary to meet a Level Three condition, and so on.

However, if a shortage condition persisted over an extended period of time, it may be necessary to implement a higher level response to sustain required reductions. Thus both the severity of supply reductions and the duration over which the reductions are experienced will determine the appropriate response.

Supply Shortage Response Measures

In addition to basic measures which are always in effect, there are three types of response measures that can be implemented by the District in the event of a supply shortage.

- Voluntary measures through increased public outreach, education and awareness (V)
- Demand management through the use of the District's allocation-based rate structure (D).
- Mandatory measures through restrictions on use and enforcement (M).

In general terms, voluntary customer responses and demand management through the use of the allocation-based rate structure will be used in all four shortage levels identified in this plan. A combination of voluntary and demand management strategies are likely to be sufficient to address virtually all shortage levels. Responses to shortages in Levels Three and Four may also include restrictions on use and enforcement. Below is a summary of anticipated supply shortage response measures.

Supply Shortage Response Measure	IRWD Supply Shortage Level	Voluntary (V), Demand Management (D) or Mandatory (M)
Public Education	Always In Effect	
Prohibition of Gutter Flooding	Always In Effect	
Prohibition of Leaks	Always In Effect	
Prohibition of Water Waste	Always In Effect	
Enhanced Public Awareness Campaign	Level One	V
Target Over-Allocation Customers for Surveys/Assistance	Level One	V
Review and Adjust Customer Allocations and/or Tiers as necessary	Level One/Two	D
Reduce Potable and Untreated Irrigation and Agricultural Allocations by 30% or other percentage specified in the shortage level declaration	Level Two	D
Reduce Potable and Untreated Irrigation Allocations by 60% or other percentage specified in the shortage level declaration	Level Three	D
Reduce Commercial, Industrial and Institutional Potable Allocations by 10% or other percentage specified in the shortage level declaration	Level Three	D
Increase Rates for Over-Allocation Use Tiers	Level Three/Four	D
Further reduction of allocations, tightening of tiers and rate increases to achieve necessary demand reductions	Level Four	D/M
Eliminate Outdoor Use (100% reduction)	Level Four	D/M
Mandatory restrictions and enforcement	Level Four	M

These response measures may be applied singly or in combination and may vary according to the severity and duration of the shortage. Other measures may be applied in lieu of or in addition to those described in this plan. The application of shortage level response measures or restrictions may vary as to type of water service. In the implementation of measures or restrictions on potable water service through the declaration of a shortage level, the District will determine and set forth how and to what extent, if any, such measures or restrictions, or different measures or restrictions, will be applied to non-potable water services furnished by the District. IRWD's Board of Directors will declare the level of shortage based on water supply conditions.

Imported Water Supply Shortage

An imported water supply shortage represents one of the main causes of a supply shortage for the District. In 2008 approximately one-third of IRWD's water supply was imported through Metropolitan Water District of Southern California (MWD). While potential reductions in imported water deliveries from MWD can be mitigated to some extent by the addition of other local supplies, such as increased pumping from groundwater facilities, or the conversion of certain potable water uses to recycled water (see IRWD's Water Resources Master Plan (WRPM) and Urban Water Management Plan (UWMP)), the range of shortages projected herein is assumed to be net of those supply augmentation measures. That is, supply shortages identified as, say 20%, is the actual shortage confronted by the District's customers after supply augmentation factors have been implemented. This plan is intended to develop a set of options to reduce demand; the development of supply augmentation options is outside the scope of this analysis and is addressed in the WRMP and UWMP.

In February 2008 the MWD adopted a Water Supply Allocation Plan based on its declared level of shortage. IRWD has performed analysis relating to varying hydrologic conditions, availability of supply augmentation measures and additional conservation. Based on the results of the modeling, Table 1 illustrates IRWD water shortage levels correlated with MWD's allocation shortage plan.

Table 1: IRWD Water Shortage Levels Correlated with MWD Allocation Stages:

MWD Stage	MWD Supply Shortage	IRWD Reliability Range	IRWD Shortage Level
1	5%	97-100%	1
2	10%	95-100%	1
3	15%	93-100%	1
4	20%	91-100%	1
5	25%	88-99%	1 or 2
6	30%	86-97%	2
7	35%	84-95%	2
8	40%	82-92%	2
9	45%	79-89%	2
10	50%	77-88%	2 or 3

The above table assumes a dry local hydrology for multiple years and limited access to groundwater. Actual correlations may differ depending on local hydrology at the time of the shortage.

PART II: SHORTAGE RESPONSE STRATEGIES

Basic Measures Always In Effect

The following basic measures are considered good water management practices, and are always in effect regardless of whether a shortage level is declared. These measures are contained in IRWD's Rules and Regulations (Section 15):

- (a) *Gutter Flooding* - No person shall cause or permit any water furnished to any property within the District to run or to escape from any hose, pipe, valve, faucet, sprinkler, or irrigation device into any gutter or otherwise to escape from the property if such running or escaping can reasonably be prevented.
- (b) *Leaks* - No person shall permit leaks of water that he has the authority to eliminate.
- (c) *Washing Hard Surface Areas* - Washing down hard or paved surfaces, including, but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards.
- (d) *Waste* - No person shall cause or permit water under his control to be wasted. Wasteful usage includes, but is not limited to, the uses listed in Section 13(a) of Exhibit 1 to the Memorandum of Understanding Regarding Urban Water Conservation in California, dated December 11, 2002, as amended from time to time, or the counterpart of said list contained in any successor document.

Under the District's allocation-based conservation rate structure that is in effect during non-shortage conditions, customer allocations are limited to the amount that is reasonable for the customer's needs and property characteristics, and reflect the exclusion of these types of wasteful water uses.

Water Supply Shortage Response Measures

IRWD would employ a range of measures in response to potential shortages depending on the level and duration. While the measures will be applied incrementally, this Plan builds in a level of flexibility to adopt additional measures to ensure the appropriate level of demand reduction. The use of IRWD's allocation-based rates and the assessment of higher rates for over-allocation or wasteful use provides IRWD with an additional strategy to help achieve demand reductions.

For illustration purposes, Table 2 shows water reductions requirements that would be required during three shortage conditions, using water demand data from 2007 (See Appendix A for total treated and untreated water demands).

Table 2: Water Conservation Requirements – Acre-Feet:

Shortage Percentage	10 %	25 %	40 %
Treated and Untreated Water	6,673	16,683	26,693
Treated Water Only	5,874	14,686	23,497

In order to achieve the necessary demand reductions, IRWD’s measures will progress from voluntary reductions to reduction of discretionary uses through financial incentives or restrictions to reduction of non-discretionary uses through financial incentives or restrictions based on the level of the shortage. Most shortages, unless extreme (Level Four or system outage), can be addressed with a combination of voluntary measures and a reduction of discretionary uses through financial incentives.

Response Measures: Voluntary

The single most important step the District can take in implementing voluntary measures is to inform the public consciousness in order to help reduce water demand. It should be noted that the District has implemented on-going water use efficiency and outreach programs since the early 1990’s, and those efforts combined with the allocation-based tiered rates, have resulted in somewhat hardened levels of demand. The District will employ additional strategies to achieve the necessary demand reductions in a shortage situation. Most of the effort will be focused on providing additional outreach to high usage tier customers.

1. *Public Outreach:* An outreach program will educate the public and local leaders on the water supply situation; what actions are proposed; what the intended achievements are; and how these actions are to be implemented. This will be accomplished by having key District personnel present to groups such as the city council, community associations, chambers of commerce, business groups, etc. An endorsement of proposed District plans by these groups will assist in obtaining the public support essential in confronting water shortages.

The public at large will be informed through press releases, billing inserts, water conservation booths, community association meetings, newsletters, church groups, etc. Literature will be provided on the shortage condition, conservation methods, and water-saving devices and be distributed through the fire and police stations, libraries, city hall, schools, shopping center,

recreation facilities, etc. Certain behavior modifications, such as those listed below, can help address the need for immediate conservation.

- Survey plumbing every two months and eliminate water loss resulting from leaky plumbing fixtures.
- Restrict showers to five minutes or less; fill the bath tub no more than one-quarter full.
- Do not run water unnecessarily while shaving, brushing teeth, bathing, preparing food, etc.
- Run only full loads of laundry and dishes.
- Reduce landscape watering.
- Fill swimming pools to a lower level to minimize water loss due to splashing.

2. *Education Programs:* School programs will focus on the water shortage situation. In addition to the usual District background information, the supply situation and conservation methods will be highlighted. Demonstrations using sample water-saving devices can be given; literature will be distributed.
3. *Logo:* A water conservation or shortage response logo will be adopted and vigorously promoted as a symbol to influence public attitudes toward water use.
4. *Media:* Extensive use of all available forms of media will be employed and coordinated with other agencies. This includes public service messages on radio and television and press releases in local newspapers. The messaging and level of response will be correlated with the need for demand reductions.
5. *Target Over-Allocation Customers:* District staff will ramp up its ongoing outreach efforts to more aggressively target over-allocation customers. Over-allocation use is considered wasteful use; customers in these tiers will be contacted via letter, telephone, e-mail and other means. On-site assistance/audits will help identify the source of the over-allocation use and provide recommendations to address the problem.
6. *Customer Service:* Customers will be encouraged to work together to save water and to call IRWD's water use efficiency experts if assistance is needed to help find water leaks or to use water more water efficiently. If someone observing water waste within IRWD's service area is

unsure who the property owner is they can call in to IRWD's Customer Service Department for assistance. IRWD staff will contact the customer associated with the property and offer on-site assistance and recommendations to address the problem.

Response Measures: Demand Management and Use of Allocation-Based Rates

The allocation-based tiered rate structure adopted by IRWD in 1991 is intended to function as a tool to promote ongoing water use efficiency. Water is allocated on an individual customer basis established upon specific indoor uses and outdoor irrigation needs. The structure includes a five-tiered system for residential customers and a four-tiered system for non-residential customers, and charges progressively higher rates for progressively higher amounts of water used. Use within a customer's allocation is encouraged through a significantly tiered commodity pricing system which discourages wasteful use. The allocation-based tiered rates provide IRWD with an effective mechanism to alter demand through pricing.

Analysis of Usage and Tiers

A detailed analysis of the usage and tiers, with the most recently available data, is one of the first steps that should be undertaken in developing demand management strategies, including potential adjustments to the tiers and allocations. Appendix A: 2007 Annual Usage and Tier Break-Down shows the annual usage and tier break-down information for treated and untreated water sources, based on data from calendar year 2007. The first two tiers shown (1 and 2) indicate usage within allocation. Tiers 3 to 5 indicate over-allocation use.

Basic water allocations should be reviewed on a periodic basis taking into consideration changes since the most recent review of these allocations, including changes to the plumbing code that improve water use efficiency, water conservation devices and more efficient irrigation systems available to the average customer. Beyond this, there are several mechanisms that can be employed either separately or in combination to achieve the necessary level of demand reductions.

Allocation Adjustment Strategies for Demand Management

1. Adjusting the Tier Thresholds: This strategy does not adjust the actual allocation formula itself, but rather adjusts the percentage thresholds for the over-allocation tiers. The current tiers and thresholds for the various account types are shown in Table 3. Adjusting the tier thresholds downward would have the effect of shifting more use into the higher over-allocation tiers. Customers in these tiers would be subjected to increased rates depending on the extent of their use (percentage of use above allocation). Reducing the tier thresholds would send stronger price signals by moving over-using customers into the higher tiers.

Table 3: Allocation-Based Rates Tier Thresholds

Tier	Percentage of Allocation		
	Residential	Irrigation	Non-Residential
Low Volume	0-40%	0-40 %	N/A
Base	41-100%	41 – 100%	0-100%
Inefficient	101 – 150%	101 – 110%	101 – 110%
Excessive	151 -200%	111 -120%	111 -120%
Wasteful	201% +	121% +	121% +

2. Allocation Adjustments: An adjustment to the allocation entails refining the allocation formula. This can be done either as a simple percentage adjustment or by adjusting a specific portion of the formula. For example, residential allocations are made up of an indoor plus an outdoor allocation component. It is possible to adjust the outdoor component downward to allow for less outdoor irrigation or eliminate it altogether depending on the need for demand reductions. Water allocations could also be set to levels that would eliminate all outdoor water use including irrigation, car washing, pool filing, agricultural use of non-recycled water etc. Under this scenario the indoor component could be left the same or could be altered as necessary.
3. Rate Increases for Over-Allocation Use: This approach entails adopting higher rates for over-allocation use, and would be linked to purchases of imported water at Metropolitan's penalty rates, among other things.

These three types of allocation adjustments can be established and refined based on customer response in such a way that specified uses are discouraged. The allocations can be established in such a way that

certain uses are not included in the allocation. Customers engaging in these uses would receive over-allocation tier charges on their water bill.

In Levels One and Two, a combination of adjusting the tier thresholds and/or the allocations, as necessary, is likely to be sufficient to achieve the required demand reductions. In Levels Three and Four, those strategies, plus the use of rate increases with stronger price signals for over-allocation use, could be used to achieve further demand reductions. In all cases, adjustments to the allocations, tiers and rates will be at the discretion of the Board, and will be based on an assessment of the supply shortage, customer response and need for demand reductions.

Enforcement Mechanism:

Application of any or a combination of the allocation adjustment strategies will place customers into the higher usage tiers, which acts as a reporting and enforcement mechanism by creating a strong financial incentive for customers to reduce demands. The higher rates for above allocation use reflect and incorporate the cost of additional demand management measures, as well as the additional cost to IRWD of acquiring water supplies in a shortage.

Response Measures: Mandatory

Extreme shortage conditions (severe Level Three and Level Four) may require that the District adopt restrictions and/or ration water for health and safety purposes only. A system outage requires a rapid response based on the fact that there is typically a need for more immediate action to deal with an emergency situation. In a system outage emergency, the IRWD Board of Directors will declare a shortage based upon the projected impact of the system outage. Since adjustments to tiers and allocations typically have a time lag in implementation and effect, those measures will be of limited usefulness in a system outage. Therefore, in addition to the measures always in effect, the Board may impose any combination of the following mandatory measures and rationing to alleviate demands.

1. ***Potable Irrigation Ban:*** Outdoor irrigation would be the initial target for any demand reductions. Demand reductions or eliminations that cannot be met through voluntary measures and financial incentives related to adjustments in the allocation based rate structure, would be attained through a ban on potable irrigation. Table 4 indicates the potential demand reductions that could be

attained from 30%, 60% and complete elimination of outdoor irrigation. This includes dedicated landscapes, mixed use commercial accounts and residential outdoor irrigation.

Table 4: Potential Water Savings (AF) Based on Irrigation Cutbacks:

% Irrigation Cutback	30 %	60 %	100 %
Potable Irrigation	8,980	17,959	29,932
Untreated Irrigation	351	701	1,169
Total	9,330	18,660	31,101

2. *Ban on car-washing and pool-filling:* Demand reductions on car-washing and pool filling that cannot be achieved through voluntary measures and financial incentives related to adjustments in the allocation-based rate structure would be attained through a ban on these actions.

Enforcement Measures

1. *Flow restrictors:* Under extreme conditions of noncompliance, the District could install flow restrictors in individual service lines. Thus, water would be available for drinking, cooking, sponge baths, and slow fill of toilet tanks, but showers and other high volume type uses would not be possible. Under these conditions individual customer reaction would be severe. It would probably be necessary to augment the customer service field service staff to maintain surveillance of these services to assure that unauthorized changes are not made by the customer.
2. *Mandatory Restrictions and Fines:* The District's ability to establish restrictions on water use and to possibly discontinue non-health and safety related service in the case of repeat violators is provided for under the Water Code of the State of California Chapters 3 and 3.5).

PART III: SHORTAGE RESPONSE PLAN

IRWD Water Supply Shortage Levels

In the event of a shortage, IRWD's Board of Directors, in accordance with the provisions of the California Water Code, will determine and declare the shortage level based on an assessment of the available supplies and demands, and may adjust the measures applied based on response in order to achieve the appropriate level of reduction. The following are the levels of shortage which may be declared; the approximate ranges of conditions the levels represent; and the reductions to be achieved:

Level One (Shortage Warning - up to 10% shortage):

Measures selected would be designed to achieve the following objectives:

Objectives:

- Public awareness of water supply situation and conservation opportunities
- Encourage diligent repair of water leaks
- Reduce over-allocation use
- Reduce outdoor over-irrigation

Measures: The measures used in Level One are primarily voluntary actions that modify customer behavior resulting from an enhanced public awareness campaign. In addition, increased outreach targeted toward over-allocation customers to help them identify the source of their overuse, and correct the problem should be sufficient to meet the objectives in Level One.

Costs and Outcomes: Based on 2007 data, a supply shortage of 10% represents approximately 6,600 AF. Information from the 2007 Annual Usage and Tier Break-Down presented in Appendix A indicates that over allocation use (sum of usage in tiers 3-5) accounts for approximately 4,200 AF of non-recycled water usage. Therefore, reducing the over-allocation use, combined with a strong public awareness campaign is expected to be sufficient to achieve the necessary reductions in Level One. The cost to implement voluntary responses is minimal, especially considering the return in reduced demand on the investment. None of the recommended steps would be difficult to implement or administer. The District has the basic infrastructure to pursue most voluntary measures through the Public Affairs and Conservation Departments. However, the District may need to conduct training and adjust its staff resources to effectively provide additional outreach to high usage tier customers.

Level Two (Significant Shortage Condition - 10-25% shortage): Measures selected would be designed to incorporate the objectives listed under Level One, and achieve the following further reduction in use:

Objectives:

- Review of allocations and potential adjustments to reduce outdoor irrigation and agricultural uses by 30%, or a percentage to be specified in the shortage declaration, based on a supply and demand analysis.
- Discourage filling of fountains, pools and water features and other discretionary uses.

Measures: Use of allocation and tier threshold adjustments is expected to be sufficient to achieve the necessary demand reduction objectives in a Level Two shortage. Adjustments to the allocations would employ the demand management/allocation adjustment strategies described in Part II of the document (pages 8-9).

Costs and Outcomes: A Level Two shortage can be offset by voluntary public response and perhaps minimal additional measures, such as reducing water allocations for non-crucial water uses including irrigation demands. Again using the 2007 Annual Usage and Tier Break-Down in Appendix A, a 30% reduction in potable irrigation and agricultural use (potable and untreated) would reduce the demands by an additional 9,300 AF , which combined with the Level One measures would result in a reduction in total demand of approximately 25%. Currently, there are some agricultural users using treated water within IRWD's service area. However, in the future, this demand is anticipated to decline to zero, in which case additional measures and adjustments to the allocations may be necessary to achieve the necessary Level 2 reductions. Depending on the duration and severity of the Level Two shortage, additional temporary staff in water conservation may be required to increase water awareness campaigns and assist customers with reduced irrigation allocations.

Level Three (Severe Shortage Condition - 25-40% shortage): Measures selected would be designed to incorporate the objectives listed under Level Two, and achieve the following further reduction in use.

Objectives:

- Further reductions in and/or eliminations of non-essential uses.
- Further reduce outdoor irrigation and agricultural uses by 60%, or a percentage to be specified in the shortage declaration, based on an analysis of supply and demand.
- Reduction in commercial, industrial and institutional use by 10%, or a percentage to be specified in the shortage declaration, based on an analysis of supply and demand.

- Elimination of specific municipal uses such as street cleaning, hydrant flushing, water-based recreation, etc.
- Activation of a District Task Force to investigate and consult with high-volume users (i.e. public authorities, universities, community associations, etc.) to assist in reducing the water demands of their properties.

Measures: Again, use of the demand management/allocation-based rate adjustment strategies described in Part II of this document (pages 8-9) will be used as a key tool to achieve these objectives. For example, allocations can be reduced to minimize outdoor use and other discretionary uses by excluding those types of uses from the allocation. If necessary, higher rates for over-allocation use could also be adopted, at the discretion of the Board.

Costs and Outcomes: While it is difficult to precisely estimate the total reduction in demand that would be realized from the cumulative measures taken in Levels One, Two and Three, a Level Three shortage condition could entail significant adjustments to allocations and the implementation of mandatory measures to meet the District's reduction needs. In addition to increasing over-allocation tier charges, all common area landscape irrigation and agricultural irrigation should be reduced drastically, or eliminated completely if necessary by adjusting the water use allocations. Reduction of allocations of treated and untreated water serving irrigation (including residential landscapes) by 60% would reduce total demand by approximately 27% (see Appendix A: 2007 Annual Usage and Tier Break-Down). When one meter serves both internal use and landscaping, monitoring and public support would be needed to ensure that no irrigation takes place. An expanded irrigation group would be effective in these efforts. Untreated or recycled water use would only be reduced as needed based on the impact of reduced wastewater flows to recycled water production. Commercial, industrial and institutional customer allocations would be reduced by up to 10%.

Level Four (Crisis Shortage Condition - more than 40% shortage): Measures selected would be designed to incorporate the objectives listed under Level Three, and achieve the following further reductions in use:

Objectives:

- Cease all outdoor water uses for landscape and agriculture, subject to reserved rights relating to local wells.

Measures: A Level Four shortage would likely require further adjustments to allocations and the use of all the Demand Management/Allocation-Based Rates strategies described in Part II (pages 8-9) at the discretion of the Board. In addition, the Board may determine that it is necessary to use mandatory restrictions and possible discontinuation of non-health and safety related service in order to achieve the necessary demand reductions in a Level Four shortage.

Costs and Outcomes: If over-allocation charges had been previously avoided, this tool would almost certainly be needed at this level of supply deficiencies. Increasing the over-allocation tier charge, formulated upon projected penalty charges imposed by outside supply agencies, could be added to the allocation-based tiered rate structure, sufficient to encourage demand reduction to required levels, pay for an equivalent water conservation project designed to meet the required reduction in demands and provide a source of revenue to purchase additional supplies at penalty rates. Over-allocation usage tier charges would also offset the additional administrative and implementation costs to the district including increased staffing to address shortages and enhancement and expansion of the District's water conservation programs and projects.

Appendix A

2007 Annual Treated and Untreated Water Usage and Tier Break-Down

USER DESCRIPTION	TOTAL (AFY)	Allocation Tier (AFY)				
		1	2	3	4	5
AG-TREATED	975	975	0	0	0	0
AG-UNTREATED	6,669	6,669	0	0	0	0
COMM-TREATED	8,431	8,153	163	114		0
COMM-UNTREATED	9	9	0	0	0	0
CONSTRUCTION	882	882	0	0	0	0
INDUST-TREATED	5,273	5,034	50	32	156	0
LAKE	141	141	0	0	0	0
IRRIG-TREATED	6,313	4,442	1,450	81	60	280
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SINGLE-RESIDENTIAL	23,537	13,138	7,784	1,878	450	287
TOTAL Acre-Feet	66,731	49,166	13,341	2,575	917	733
Percentage	100%	75%	20%	4%	2%	1%

APPENDIX I: CUWCC BMP Coverage Reports
Irvine Ranch Water District
Urban Water Management Plan

Reporting Unit:Irvine Ranch Water District
Signatory:Irvine Ranch Water District
RU Type:Retail

Welcome Fiona Sanchez | [Logout](#)
Role:Editor

[Home](#) [Annual Input Forms](#) [Base Year Data](#) [Reports](#) [Reporting Unit](#)

Reporting Year

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Service Area Population: 367,724

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Potable

Potable Water

Imported	AF/Year	Water Supply Type	Water Supply Description
Met/MWDOC	14,583.3	Surface	Treated Imported (minus exports) (WTRFLOCONSOL14, June14 G9)
Local Watershed	AF/Year	Water Supply Type	Water Supply Description
Wells	49,250.30	Groundwater	Treated Groundwater (WTRFLOCONSOL14, June14 G10)
Total: 49,250.30			

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Reporting Unit:Irvine Ranch Water District
Signatory:Irvine Ranch Water District
RU Type:Retail

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Service Area 367,724
Population:

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Non Potable Water

Imported	AF/Year	Water Supply Type	Water Supply Description
ILP/SAC	7,924.8	Raw Water	Untreated (Y12&13 WTRFLOCONSOL14, WTR PURCHASED)
Local Watershed	AF/Year	Water Supply Type	Water Supply Description
Non-Potable Wells & Recycled Water Supplement	5,535.80	Groundwater	non-potable & recycled (Y17, Y19, Y21 from WTRFLOCONSOL14, WTR PURCHASED)
Recycled Water	21,919.46	Recycled Non Potable	Recycled water (Y23 from WTRFLOCONSOL14, WTR PURCHASED)
Total: 27,455.26			

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Reporting Unit:Irvine Ranch Water District
Signatory:Irvine Ranch Water District
RU Type:Retail

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Billed

Customer Type	Metered Accounts	Metered Water Delivered AF/Year	Un-Metered # Accounts	Un - metered Water Delivered AF/Year	Description
Single-Family	55,617	22,379.60	0	0.00	TREATED UWT: 10,11,12,15,18,71
Multi-Family	34,377	11,337.49	0	0.00	TREATED UWT: 13,16,17,80,81,82,83
Commercial	4,999	8,759.10	0	0.00	TREATED UWT: 20,72
Industrial	851	4,876.60	0	0.00	TREATED UWT: 30
Institutional	292	2,410.30	0	0.00	TREATED UWT: 40
Dedicated Irrigation	1,833	5,675.30	0	0.00	TREATED UWT: 60,76
Agricultural	12	199.40	0	0.00	TREATED UWT: 66
Other	193	721.30	0	0.00	TREATED UWT: 50,75
Fire Lines	4,057	1.30	0	0.00	TREATED UWT: 90
Total : 56,360.39			Total : 0.00		

Un-Billed

Customer Type	Metered Accounts	Metered Water Delivered AF/Year	Un-Metered # Accounts	Un - metered Water Delivered AF/Year	Description
Other		0.00	203	0.00	All customer classes plus IRWD facilities
Total : 0.00			Total : 0.00		

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Reporting Unit:Irvine Ranch Water District
Signatory:Irvine Ranch Water District
RU Type:Retail

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Billed

Customer Type	Metered Accounts	Metered Water Delivered AF/Year	Un-Metered # Accounts	Un - metered Water Delivered AF/Year	Description
Agricultural	11	2,073.87	0	0.00	UNTREATED AG UWT: 67,69
Industrial	4	38.67	0	0.00	RECYCLED UWT: 32,39
Other	8	108.07	0	0.00	RECYCLED CONSTRUCTION UWT: 51
Dedicated Irrigation	4,393	24,024.01	0	0.00	RECYCLED UWT: 62,63
Other	6	137.08	0	0.00	LAKE FILL UWT: 64
Single-Family	593	769.79	0	0.00	RECYCLED SF DEDICATED IRRIG UWT: 65
Agricultural	35	4,261.09	0	0.00	RECYCLED AG UWT: 68
Agricultural	76	323.65	0	0.00	ILP UNTREATED AG UWT: 61
Other	1	28.10	0	0.00	COMMERCIAL SCA WATER, 23
Commercial	61	305.12	0	0.00	RECYCLED UWT: 29
Total : 32,069.45			Total : 0.00		

Un-Billed

Customer Type	Metered Accounts	Metered Water Delivered AF/Year	Un-Metered # Accounts	Un - metered Water Delivered AF/Year	Description
Other	0	0.00	0	0.00	Evaporation
Total : 0.00			Total : 0.00		

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BMP 1.1 Operations Practices

Provisional Coverage Indication

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Conservation Coordinator

Conservation Coordinator

Yes

No

N/A

ON TRACK

Contact Information

First Name	Amy
Last Name	McNulty
Title	Water Efficiency Manager
Phone	949-453-5634
Email	mcnulty@irwd.com

Water Waste Prevention

An agency MUST do at least one or more of the following six strategies; although water agencies are encouraged to do them all when possible.

☒ Option A: Describe (upload or provide an electronic link) the ordinances or terms of service adopted by your agency to meet the water waste prevention requirements of this BMP.

ON TRACK

Upload File

NA

URL

Describe Ordinance or Terms

IRWD's Water Shortage Contingency Plan, which includes measures always in effect, regardless of drought conditions.

135 characters remaining

☐ Option B: Describe (upload or provide an electronic link) any water waste prevention ordinances or requirements adopted by your local jurisdiction(s) or regulatory agencies within your service area.

Upload File

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always in effect, regardless of drought conditions.

☐ Option B: Describe (upload or provide an electronic link) any water waste prevention ordinances or requirements adopted by your local jurisdiction(s) or regulatory agencies within your service area.

Upload File

NA

URL

Describe Ordinances or Requirements

250 characters remaining

☐ Option C: Describe (upload or provide an electronic link) any documentation of support for legislation or regulations that prohibit water waste.

Upload File

NA

URL

Describe the support provided for legislation or regulations that prohibit water waste.

250 characters remaining

☐ Option D: Describe your agency's efforts to cooperate with other entities in the adoption or enforcement of local requirements consistent with this BMP.

Upload File

NA

Describe Efforts

250 characters remaining

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☐ Option E: Describe your agency's support positions with respect to adoption of legislation and/or regulations that are consistent with this BMP.

Upload File

NA

Describe Legislation

250 characters remaining

☐ Option F: Describe your agency's efforts to support local ordinances that establish permits requirements for water efficient design in new development.

Upload File

NA

Describe Legislation

250 characters remaining

At Least As Effective As

Is your agency implementing an "At Least As Effective As" variant of this BMP? ☐ Yes ☐ No ☒ N/A

If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 of the MOU and why you consider it to be "at least as effective as."

250 characters remaining

Please Upload Document(s)

NA

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☐ Option F: Describe your agency's efforts to support local ordinances that establish permits requirements for water efficient design in new development.

Upload File

NA

Describe Legislation

250 characters remaining

At Least As Effective As

Is your agency implementing an "At Least As Effective As" variant of this BMP? ☐ Yes ☐ No ☒ N/A

If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 of the MOU and why you consider it to be "at least as effective as."

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Please Upload Document(s)

NA

Exemption Type

Exemption Type :

Please Upload Document(s) for Exemption

Select an Exemption Type ▼

NA

Comments

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BMP 1.2 Water Loss Control

Provisional Coverage Indication **ON TRACK**

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AWWA Water Audit

Agency to complete a water audit and balance using the AWWA software Yes No N/A **ON TRACK**

Upload Worksheets (AWWA Water Audit) ?

Uploaded filename: [Copy of 2014 Reporting Sheet.xls](#)

Water Audit Validity Score **84**

ON TRACK

Agency Completed Training In The AWWA Water Audit Method Yes No N/A **ON TRACK**

Agency Completed Training In The Component Analysis Process Yes No N/A **ON TRACK**

Completed/Updated the Component Analysis (at least every 4 years)
(Effective from 2013) Yes No N/A **ON TRACK**

Component Analysis Completed/Updated Date: **08/26/2015** format:mm/dd/yyyy

Water Loss Performance

Agency repaired all reported leaks & breaks to the extent cost effective Yes No N/A **ON TRACK**

[Recording Keeping Requirements Beginning in Year 2](#)

Does your agency maintain a record keeping system for the following?

Date/Time Leak Reported	Yes	No	N/A	Leak Location	Yes	No	N/A
Type of Leaking Pipe Segment or Fitting	Yes	No	N/A	Leak Running Time From Report to Repair	Yes	No	N/A
Leak Volume Estimate :	Yes	No	N/A	Cost of Repair:	Yes	No	N/A
Do you have an infrastructure rehabilitation and renewal program ?	Yes	No	N/A				

Agency Located and Repaired Unreported Leaks to the Extent Cost

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Total Leaks Repaired	Economic Value Of RealLoss	Economic Value Of AppLoss	Miles Of System Surveyed For Leaks	Pressure Reduction Undertaken for loss reduction	Cost Of Intervention	Linear feet of pipe renewal and rehabilitation	Water Saved (AF/Year)
48	1,766,414.1	1,479,654	1,617.20		288,000.00		179.00

Please describe your infrastructure rehabilitation and renewal activity below

250 characters remaining

AWWA Model

Operational Efficiency Indicator ?

Apparent Losses per service connection per day:	0.00
Real Losses per service connection per day:	0.00
Real Losses per length of main per day:	0.00
Real Losses per service connection per day per psi pressure:	0.00
Unavoidable Annual Real Losses(UARL):	0.00
Above, Real Losses=Current Annual Real Losses(CARL):	0.00
Infrastructure Leakage Index (ILI) [CARL/UARL]:	0.00
WATER SUPPLIED:	63627.32
Reporting Units:	

At Least As Effective As

Is your Agency implementing an "At Least As Effective As" Variant of this BMP? ☐ Yes ☐ No ☒ N/A

If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 of the MOU and why you consider it to be "at least as effective as."

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Reporting Unit:Irvine Ranch Water District
 Signatory:Irvine Ranch Water District
 RU Type:Retail

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BMP 1.3 Metering with Commodity Rates

Provisional Coverage Indication

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Implementation

Does your agency have any unmetered service connections? Yes No N/A

If YES, has your agency completed a meter retrofit plan? Yes No N/A

If YES, number of previously unmetered accounts fitted with meters during reporting year:

Are all new service connections being metered? Yes No N/A

Are all new service connections being billed volumetrically? Yes No N/A

Has your agency completed and submitted electronically to the Council a written plan, policy or program to test, repair and replace meters? Yes No N/A

NA

Please Fill Out The Following Matrix

Account Type	# Metered Accounts	# Metered Accounts Read	# Metered Accounts Billed by Volume	Billing Frequency Per Year	# Estimated Bills/Year	# Of Meter Readings per Year
Single-Family	55,617.00	55,617.00	55,617.00	Monthly	0.00	0.00
Multi-Family	34,377.00	34,377.00	34,377.00	Monthly	0.00	0.00
Commercial	4,999.00	4,999.00	4,999.00	Monthly	0.00	0.00
Industrial	851.00	851.00	851.00	Monthly	0.00	0.00
Institutional	292.00	292.00	292.00	Monthly	0.00	0.00
Dedicated Irrigation	1,833.00	1,833.00	1,833.00	Monthly	0.00	0.00

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Has your agency completed and submitted electronically to the Council a written plan, policy or program to test, repair and replace meters?

Yes No N/A

NA

Please Fill Out The Following Matrix

Account Type	# Metered Accounts	# Metered Accounts Read	# Metered Accounts Billed by Volume	Billing Frequency Per Year	# Estimated Bills/Year	# Of Meter Readings per Year
Multi-Family	34,377.00	34,377.00	34,377.00	Monthly	0.00	0.00
Commercial	4,999.00	4,999.00	4,999.00	Monthly	0.00	0.00
Industrial	851.00	851.00	851.00	Monthly	0.00	0.00
Institutional	292.00	292.00	292.00	Monthly	0.00	0.00
Dedicated Irrigation	1,833.00	1,833.00	1,833.00	Monthly	0.00	0.00
Agricultural	12.00	12.00	12.00	Monthly	0.00	0.00
Fire Lines	4,057.00	4,057.00	4,057.00	Monthly	0.00	0.00
Other	203.00	203.00	203.00	Monthly	0.00	0.00

Number of CII Accounts with Mixed-used Meters 670

Number of CII Accounts with Mixed-used Meters Retrofitted with Dedicated Irrigation Meters during Reporting Period 0

Feasibility Study

ON TRACK

Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?

Yes No N/A

If YES, please fill in the following information:

A. When was the Feasibility Study conducted

06/01/2012

B. Describe, upload or provide an electronic link to the Feasibility Study Upload File

NA

URL

Describe 250 characters remaining

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Number of CII Accounts with Mixed-used Meters Retrofitted with Dedicated Irrigation Meters during Reporting Period

0

Feasibility Study

ON TRACK

Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?

Yes No N/A

If YES, please fill in the following information:

A. When was the Feasibility Study conducted

06/01/2012

B. Describe, upload or provide an electronic link to the Feasibility Study Upload File

NA

URL

Describe

250 characters remaining

At Least As Effective As

Is your agency implementing an "at least as effective as" variant of this BMP?

Yes No N/A

If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 of the MOU and why you consider it to be "at least as effective as."

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Please Upload Document(s)

NA

Exemption Type

Please Upload Document(s) for Exemption

Select an Exemption Type

NA

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BMP 1.4 Retail Conservation Pricing

Provisional Coverage Indication

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A. Implementation (Water Rate Structure)

[Enter the Water Rate Structures that are assigned to the majority of your customers, by customer class.](#)

Rate Structure Option	Customer Class Name	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed) Charges	New
No data to display				
		\$0.00	\$0.00	

B. Implementation Options (Compliance with Conservation Pricing Options (Water))

Please Select an Option

Option 1: Annual Revenue As Reported

Option 2: Canadian Water Wastewater Assn Rate Design Model

Use 3 years average instead of most recent year

If CWWA is selected, please upload spreadsheet here.

NA

Canadian Water & Wastewater Association Rate Design Model Implementation

C. Canadian Water & Wastewater Association

Rate Structure Option	Customer Class Name	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed) Charges
No data to display			
		\$0.00	\$0.00

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Rate Structure Option	Customer Class Name	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed) Charges
No data to display			
\$0.00			\$0.00

D. Retail Waste Water (Sewer) Rate Structure by Customer Class

Does your agency provide sewer service? Yes No N/A

Select the Retail Waste Water (Sewer) Rate Structure assigned to the majority of your customers within a specific customer class.

Rate Structure Option	Customer Class Name	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed) Charges
No data to display			
\$0.00			\$0.00

[Option 3: Click here to use option 3 and/or to report your Agency's good faith efforts - redirects to new page](#)

At Least As Effective As

Agency is implementing an 'At Least As Effective As' variant of this BMP? Yes No N/A

If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 of the MOU and why you consider it to be "at least as effective as."

250 characters remaining

Please Upload Document(s)

NA

Exemption Request

If agency has requested an exemption then please select a exemption type.

Exemption Type *

Please Upload Document(s)

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(<http://www.cuwcc.org/>)

Menu

Resources (<http://www.cuwcc.org/Resources>) ▶ Reporting Database (<http://www.cuwcc.org/Resources/Reporting-Database>) ▶ BMP 1.4 (<http://www.cuwcc.org/Intranet/BMP-14>)

Agency's name: Irvine Ranch Water District

Reporting year: 2014

BMP 1.4, Part I, option 3 summary

Total Points Section 1	Total Points Section 2	Total Points Section 3	TOTAL POINTS
20.00	23	6	49.00

Select a page to Edit or Review:

Water Rate Option 3, Section 1 (<http://www.cuwcc.org/Intranet/BMP-14-Option-3-section-1/ruID/136/year/2014>)

Water Rate Option 3, Section 2 (<http://www.cuwcc.org/Intranet/BMP-14-Option-3-section-2/ruID/136/year/2014>)

Water Rate Option 3, Section 3 (<http://www.cuwcc.org/Intranet/BMP-14-Option-3-section-3/ruID/136/year/2014>)

Waste Water Service Provider Info (<http://www.cuwcc.org/Intranet/BMP-14-Sewer-Providers/ruID/136/year/2014>)

Help page (<http://www.cuwcc.org/Intranet/BMP-14-Help>)

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BMP 2.1 Public Information Programs

Provisional Coverage Indication

ON TRACK

[Online Help](#)

Submitted to CUWCC
10/29/2015 2:50:15 PM

☒ Form Complete

Form Status: Submitted

Are there one or more wholesale agencies performing public outreach which can be counted to help your agency comply with the BMP?

Yes No N/A

If "Yes" please select council wholesale agencies;

Please provide the name of agency , contact name and email address if not A Council Group 1 member.
200 characters remaining

Municipal Water District of Orange County ☐

Report a minimum of four water conservation related contacts your agency had with the public during the year.

ON TRACK

Public Information Programs List

Did at least one contact take place during each quarter of the reporting year? ☒

Number of Public Contacts	Public Information Programs
19	Newsletter articles on conservation
11	General water conservation information
1,500	Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets
27	Website
1,557	

Contact with the Media

Yes No N/A

ON TRACK

Media Contacts List

Did at least one contact take place during each quarter of the reporting year? ☐

Number of Media Contacts	Media Contacts Type
No data to display	

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Did at least one contact take place during each quarter of the reporting year? ☐

Number of Media Contacts	Media Contacts Type
No data to display	

Agency Website Updates

Enter your agency's URL (website address):

www.irwd.com

238 characters remaining

Describe a minimum of four water conservation related updates to your agency's website that took place during the year:

Liquid News blog, updates on conservation programs (monthly) updates on rebate information (quarterly) updates on events, classes and workshops (monthly) Home Page sliders touting conservation programs (quarterly)

37 characters remaining

Did at least one website update take place during each quarter of the reporting year?

Yes

No

N/A

ON TRACK

Public Information Programs Annual Budget

Enter budget for public outreach programs. You may enter total budget in a single line or break the budget into discrete categories by entering many rows. Please indicate if personnel costs are included in the entry.

Category	Amount	Personnel Costs Included?	Comments
Print Materials	42,000.00		
Advertising	1,000.00		
Conservation Devices	40,500.00		
Event Promotion and Planning	3,000.00		
Residential Tours	4,000.00		
\$90,500.00			

Public Information Expenses

Enter expenses for public outreach programs. Please include the same kind of expenses you included in the question related to your budget. For example, if you included personnel costs in the budget entered above, be sure to include them here as well.

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Public Information Expenses

Enter expenses for public outreach programs. Please include the same kind of expenses you included in the question related to your budget. For example, if you included personnel costs in the budget entered above, be sure to include them here as well.

Expense Category	Expense Amount	Personnel Costs Included?
No data to display		
\$0.00		

ALL DATA BELOW ARE OPTIONAL

Additional Public Information Program

You may report additional public information contacts. Please list these additional contacts in order of how your agency views their importance/effectiveness with respect to conserving water, with the most important/effective listed first (where 1 = most important).

Were there additional Public Outreach efforts? Yes No N/A

Public Outreach Additional Information

Public Information Programs	Importance
No data to display	

Social Marketing Programs

Branding

Does your agency have a water conservation "brand," "theme" or mascot? Yes No N/A

Describe the brand, theme or mascot.

RightScope: The Right Plants, The Right Schedule, The Right Equipment

181 characters remaining

Market Research

Have you sponsored or participated in market research to refine your message? Yes No N/A

100 characters remaining

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Refine your message:

100 characters remaining

Market Research Topic

100 characters remaining

Brand Message

100 characters remaining

Brand Mission Statement

Community Committees

Do you have a community conservation committee? Yes No N/A

Enter the names of Community Committees:

100 characters remaining

Training

Training Type	# of Trainings	# of Attendees	Description of Other
No data to display			

Social Marketing Expenditures

Public Outreach Social Marketing Expenses

Expense Category	Expense Amount	Description
Advertising	1,000.00	Social Media Advertising, YouTube video development

Partnering Programs

Name	Type of Program
☐ CLCA?	
☐ Green Building Programs?	
☒ Master Gardeners?	UCCE Master Gardeners of Orange County
☒ Cooperative Extension?	UCI Cooperative Extension Center
☐ Local Colleges?	
☒ Other	Sea and Sage Audubon Society, Discovery Science Center

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Training

Training Type	# of Trainings	# of Attendees	Description of Other
No data to display			

Social Marketing Expenditures

Public Outreach Social Marketing Expenses

Expense Category	Expense Amount	Description
Advertising	1,000.00	Social Media Advertising, YouTube video development

Partnering Programs

Name	Type of Program
☐ CLCA?	
☐ Green Building Programs?	
☒ Master Gardeners?	UCCE Master Gardeners of Orange County
☒ Cooperative Extension?	UCI Cooperative Extension Center
☐ Local Colleges?	
☒ Other	Sea and Sage Audubon Society, Discovery Science Center
☒ Retail and wholesale outlet; name(s) and type(s) of programs:	
Home Depot	RightScape Garden Events

Partnering Programs - Newsletters

Number of newsletters per year	12
Number of customers reached per year	

Partnering with Other Utilities

Describe other utilities your agency partners with, including electrical utilities 250 characters remaining

Conservation Gardens

Describe water conservation gardens at your agency or other high traffic areas or new homes. 250 characters remaining

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BMP 2.2 School Education Programs, Retail Agencies

Provisional Coverage Indication **ON TRACK**

[Online Help](#)

Submitted to CUWCC
10/29/2015 2:50:15 PM

☒ **Form Complete** ?

Form Status: Submitted

Does your agency implement a school education program?

Yes No N/A

Are there one or more wholesale agencies performing school education programs which can be counted to help your agency comply with the BMP?

Please provide the name of Agency, contact name and email address if not CUWCC Group 1 members.

Municipal Water District of Orange County

ON TRACK

☒ **Materials meet state education framework requirements.**

Description:

178 characters remaining

Grade specific workbooks, electronic key pad systems, kits and devices.

ON TRACK

☒ **Materials distributed to K-6 students.**

Description of materials distributed to K-6 students:

178 characters remaining

Grade specific workbooks, electronic key pad systems, kits and devices.

Number of student reached.

9423

☒ **Materials distributed to 7-12 students. (optional)**

Description of materials distributed to 7-12 students

179 characters remaining

Workbooks, nitrate testing kits during field trips, conservation kits.

Annual budget for school education program.

ON TRACK

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12 students

remaining

Workbooks, nitrate testing kits during field trips, conservation kits.

Annual budget for school education program.

ON TRACK

\$ 149685.00

ON TRACK

Description of all other water supplier education programs.

172 characters remaining

Tours, field trips, festivals, science fairs, poster contests, and Project WET

School Program Activities

Classroom presentations:

Number of presentations

37

Number of attendees

1208

219 characters remaining

Conservation and water sources

Describe the topics covered in your classroom presentations:

Large group assemblies:

Number of presentations

120

Number of attendees

8215

Children's water festivals or other events:

Number of presentations

12

Number of attendees

300

Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up:

Number of presentations

2

Number of attendees

20

Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits):

Description

250 characters remaining

Number distributed

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Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up:

Number of presentations

2

Number of attendees

20

Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits):

Description

250 characters remaining

Number distributed

Staffing children's booths at events and festivals:

Number of booths

2

Number of attendees

1000

Water conservation contests such as poster and photo:

Description

249 characters remaining

Number of Participants

2

10

Offer monetary awards/funding or scholarships awards to students:

Number offered

5

Total funding

500.00

Teacher training workshops:

Number of presentations

Number of attendees

Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.:

Number of tours or field trips

21

Number of participants

1208

College internships in water conservation offered:

Number of internships

Total funding

Career fair/workshops:

Number of presentations

2

Number of attendees

30

Additional program(s) supported by agency:

Not mentioned above

250 characters remaining

Number of events (if applicable)

Number of participants

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Water conservation contests such as poster and photo:

Description	249 characters remaining	Number of Participants
2		10

Offer monetary awards/ funding or scholarships awards to students:

Number offered	Total funding
5	500.00

Teacher training workshops:

Number of presentations	Number of attendees

Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.:

Number of tours or field trips	Number of participants
21	1208

College internships in water conservation offered:

Number of internships	Total funding

Career fair/ workshops:

Number of presentations	Number of attendees
2	30

Additional program(s) supported by agency:

Not mentioned above

250 characters remaining

	Number of events (if applicable)	Number of participants

Total reporting period budget expenditures for school education programs (include all agency costs):

At Least As Effective As

Is your Agency implementing an "At Least As Effective As" Variant of this BMP? ☐ Yes ☐ No ☒ N/A

If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 of the MOU and why you consider it to be "at least as effective as."

150 characters remaining

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GPCD Coverage Calculations

Provisional Coverage Indication

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☒ Form Complete ?

Calculate

Save

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[Landscape Area Wateruse](#) [Baseline CII](#) [Targets \(CUWCC MOU\)](#) [Targets \(SBx7 7\)](#)

Would you like to use Weather Normalization (WN) adjustments? ☐ Yes ☒ No

Do you accept the Council's default calculations? ☒ Yes ☐ No

GPCD in 2006 ☐ 180.4 With WN ☐ 0 GPCD in 2014 151.89 With WN ☐ 0
Baseline GPCD (1997 to 2006) ☒ 191.91 With WN ☐ 0 GPCD Target for 2018 157.4 With WN ☐ 0

Biennial GPCD Coverage Table						Potable Water GPCD for each Year in the Baseline Period		
Year	Report	Target		Highest Acceptable Bound for WN option		Year	GPCD	GPCD W. WN
		% Base	GPCD	% Base	GPCD			
2010	1	96.4%	185	100%	191.9	2006	180.4	0
2011 ¹	2	94.6%	181.5	98.2%	188.5	2005	171.71	0
2012	2	92.8%	178.1	96.4%	185	2004	187.66	0
2013 ¹	3	91%	174.6	94.6%	181.5	2003	180.03	0
2014	3	89.2%	171.2	92.8%	178.1	2002	187.64	0
2015 ¹	4	87.4%	167.7	91%	174.6	2001	204.43	0
2016	4	85.6%	164.3	89.2%	171.2	2000	201.82	0
2017 ¹	5	83.8%	160.8	85.6%	164.3	1999	201.4	0
2018	5	82.0%	181.5	82.0%	157.4	1998	191.52	0
1 Interim odd year targets are shown for USBR Contractors						1997	212.46	0

TARGETS/ COMPLIANCE (SBx7-7)

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June 13, 2016

Prepared and

Submitted by: N. Savedra

Approved by: P. Cook



CONSENT CALENDAR

RATIFY/APPROVE BOARD OF DIRECTORS' ATTENDANCE AT MEETINGS AND EVENTS

SUMMARY:

Pursuant to Resolution 2006-29 adopted on August 28, 2006, approval of attendance of the following events and meetings are required by the Board of Directors.

Events/Meetings

Steven LaMar

6/09/16 Special ACC-OC Water Committee Meeting
6/15/16 Natural Communities Coalition Quarterly Board Meeting

Mary Aileen Matheis

4/14/16 OC Watershed Meeting – Review of San Juan Creek Program
6/01/16 Staff Meeting relative to OCWD
6/07/16 ISDOC Executive Committee Meeting
6/09/16 Tustin State of the City Address
6/22/16 Orange County Forum – OC Community Indicators Report
6/23/16 Monthly Discussion of District Activities w/General Manager Paul Cook

Douglas Reinhart

5/25/16 South Orange County Agencies' Meeting
6/08/16 South Orange County Agencies' Meeting
6/23/16 Monthly Discussion of District Activities w/General Manager Paul Cook

Peer Swan

6/03/16 Newport Chamber of Commerce Meeting
6/08/16 OCWD Water Issues Committee Meeting
6/15/16 OCWA June Meeting

John Withers

5/31/16 Portola High School VIP Hard Hat Tour & State of Education Address
6/07/16 ISDOC Executive Committee Meeting
6/09/16 Special ACC-OC Water Committee Meeting
6/22/16 Orange County Forum – OC Community Indicators Report

RECOMMENDATION:

THAT THE BOARD RATIFY/APPROVE THE MEETINGS AND EVENTS FOR STEVEN LAMAR, MARY AILEEN MATHEIS, DOUGLAS REINHART, PEER SWAN AND JOHN WITHERS AS DESCRIBED.

LIST OF EXHIBITS:

None

June 13, 2016

Prepared and

Submitted by: L. Bonkowski

Approved by: P. Cook



CONSENT CALENDAR

MINUTES OF BOARD MEETINGS

SUMMARY:

Provided are the minutes of the May 23, 2016 and June 6, 2015 Regular Board Meeting for approval.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

COMMITTEE STATUS:

Not applicable.

RECOMMENDATION:

THAT THE MINUTES OF THE MAY 23, 2016 AND JUNE 6, 2016 REGULAR BOARD MEETING BE APPROVED AS PRESENTED.

LIST OF EXHIBITS:

Exhibit "A" – May 23, 2016 Minutes

Exhibit "B" – June 6, 2016 Minutes

EXHIBIT "A"

MINUTES OF REGULAR MEETING – MAY 23, 2016

The regular meeting of the Board of Directors of the Irvine Ranch Water District (IRWD) was called to order at 5:00 p.m. by President Matheis on May 23, 2016 in the District office, 15600 Sand Canyon Avenue, Irvine, California.

Directors Present: Reinhart, Swan, Matheis and Withers.

Directors Absent: LaMar.

Also Present: General Manager Cook, Executive Director of Engineering and Water Quality Burton, Executive Director of Water Policy Weghorst, Executive Director of Operations Shields, Director of Treasury and Risk Management Jacobson, Director of Public Affairs Beeman, Director of Administrative Services Mossbarger, Director of Water Resources Sanchez, Director of Human Resources Roney, Assistant Director of Recycling Operations Zepeda, Legal Counsel Arneson, Secretary Bonkowski, Principle Engineer Malloy, Principle Engineer Akiyoshi, Mr. Ian Swift, Mr. Matt Veeh, Mr. Barkev Meserlian, Ms. Kellie Welch, Mr. Rob Hunter, Mr. Sat Tamaribuchi, Mr. Jeff Thomas, Mr. Jim Reed, Mr. Bruce Newell, Ms. Peggy Falcon, Ms. Joan Leonard, Ms. Julie Moriarty, and other members of the public and staff.

WRITTEN COMMUNICATIONS: None.

ORAL COMMUNICATIONS: None.

ITEMS RECEIVED TOO LATE TO BE AGENDIZED: None.

PRESENTATION

MUNICIPAL WATER DISTRICT OR ORANGE COUNTY PROCLAMATION

MWDOC Directors Jeff Thomas and Sat Tamaribuchi presented a Proclamation expressing appreciation for the dedicated public service of IRWD for leadership in 2015-16 in meeting California's conservation mandates and for demonstrating to Governor Brown and others throughout the State that Southern California is truly aware of the value of water.

WORKSHOP

SEWER FLOW PROJECTIONS AND DEMAND FACTOR CALIBRATION

Using a PowerPoint presentation, Principle Engineer Akiyoshi provided background on the District's Sewer Collection System Master Plan (SCSMP). Mr. Akiyoshi said that IRWD's Demand Forecast Tool uses factors to project sewer flows from the current year through build-

out conditions. He reviewed the updated demand factors, calibration methodology, sewer flow projections, and provided an update on the SCSMP schedule and progress.

He further said that the future system hydraulic model, capacity analysis, and reliability and redundancy analysis are anticipated in late July with the 90% submittal, and that staff will also include an update on the SCSMP progress at a Board meeting in August or September. Following discussion, Director Swan asked to be provided a status report on current peak dry weather flow in the San Diego Creek Interceptor.

CONSENT CALENDAR

Director Swan asked that Item No. 6 be moved to the Action Calendar as he would like to add an additional meeting. There being no objections, Item No. 6 was moved accordingly. On MOTION by Reinhart, seconded and unanimously carried, CONSENT CALENDAR ITEMS 5 AND 7 THROUGH 13 WERE APPROVED AS FOLLOWS:

5. MINUTES OF BOARD MEETING

Recommendation: That the minutes of the April 25, 2016 Regular Board Meeting be approved as presented.

7. APRIL TREASURY REPORTS

Recommendation: That the Board receive and file the Treasurer's Investment Summary Report, the Monthly Interest Rate Swap Summary for April 2016, and Disclosure Report of Reimbursements to Board members and staff; approve the April 2016 summary of payroll ACH payments in the total amount of \$2,337,626 and approve the April 2016 accounts payable disbursement summary of Warrants 366466 through 367198, Workers' Compensation distributions, wire transfers, payroll withholding distributions and voided checks in the total amount of \$22,371,573.

8. PROPOSED AMENDED AND RESTATED LICENSE AND SUBLICENSE FOR USE OF SAN JOAQUIN WILDLIFE SANCTUARY SITE, FACILITIES AND ACCESSWAYS

Recommendation: That the Board approve the Third Amended and Restated License Agreement between Irvine Ranch Water District and San Joaquin Wildlife Sanctuary subject to non-substantive modifications.

9. 2016 LEGISLATIVE UPDATE

Recommendation: That the Board adopt a "Support in Concept" position on SB 970 (Leyva) and the development of a State program which would provide grants to wastewater agencies for the development or implementation of projects that would integrate food waste processing by the agencies at its wastewater treatment facilities, result in the diversion of organics from local landfills, and dedicate cap-and-trade revenues to the wastewater sector; and a "Support" position on the Santa Ana Mountains to Sea National Monument proposal.

CONSENT CALENDAR (CONTINUED)

10. ON-CALL PLAN CHECK SERVICES

Recommendation: That the Board authorize the General Manager to execute a Professional Services Agreement with Stantec Consulting Services, Inc. for a not-to-exceed amount of \$250,000 for on-call plan check services.

11. HERITAGE FIELDS DISTRICT 8 BIORETENTION BASIN

Recommendation: That the Board approve acceptance of the District 8 Bioretention NTS Facility subject to the terms and conditions set forth in the application for service, addendum thereto, and Grant of Easement subject to non-substantive changes as the General Manager may approve.

12. PETERS CANYON WASH CHANNEL WATER CAPTURE AND REUSE PIPELINE CONTRACT CHANGE ORDER

Recommendation: That the Board authorize the General Manager to approve Contract Change Order No. 6 in the amount of \$128,296.20 with E.J. Meyer Company for the Peters Canyon Wash Channel Water Capture and Reuse Pipeline, project 4985.

13. MICHELSON WATER RECYCLING PLANT FILTER PUMP STATION 2 AND DYER ROAD WELLFIELD WELLS 12 AND 13 ROOF MODIFICATIONS CONSTRUCTION AWARD

Recommendation: That the Board authorize a budget increase in the amount of \$44,500, from \$340,500 to \$385,000, for project 5453; authorize a budget increase in the amount of \$278,600, from \$256,000 to \$534,600, for project 5469; and authorize the General Manager to execute a construction contract with Schuler Constructors in the amount of \$501,469 for the Michelson Water Recycling Plant Filter Pump Station 2, project 5469, and Dyer Road Wellfield Wells 12 and 13 Roof Modifications, project 5453.

ACTION CALENDAR

RATIFY/APPROVE BOARD OF DIRECTORS' ATTENDANCE AT MEETINGS AND EVENTS

Director Swan said that he attended a Newport Beach Chambers luncheon meeting which he asked to be included in his list of meetings. On **MOTION** by Withers, seconded and unanimously carried, **THE BOARD RATIFIED/APPROVED THE MEETINGS AND EVENTS FOR STEVEN LAMAR, MARY AILEEN MATHEIS, DOUGLAS REINHART, PEER SWAN, AND JOHN WITHERS AS AMENDED.**

VERIFICATIONS OF SUFFICIENT WATER SUPPLY FOR THE WEST ALTON PARCEL AND EL TORO 100-ACRE PARCEL DEVELOPMENTS

Ms. Kellie Welch reported that in February 2016, staff received two requests from the County of Orange to complete Verifications of Sufficient Water Supply (WSV) for the West Alton Parcel and the El Toro 100-Acre Parcel developments located within the former Marine Corps Air Station (MCAS) El Toro Base. Ms. Welch said that on April 15, 2015, the Board approved separate Water Supply Assessments (WSA) for each of the proposed projects. The West Alton project WSA included 970 dwelling units which the County has reduced by 168 to 802 proposed dwelling units. The El Toro project includes 2,103 dwelling units and 2.1 million square feet of retail and office space and one hotel which is consistent with the approved WSA. As required under SB 221, and as part of the tract map approval process for projects including 500 or more dwelling units, the County has requested a WSV be prepared for its West Alton and El Toro projects. The WSVs for these projects are based upon the approved WSAs containing IRWD's determination that a sufficient water supply is available. SB 221 also requires several elements be included in the WSV that are not covered or required in the WSA. These elements are primarily covered in Sections 1(b)(ii), 1(b)(iii) and 1(b)(iv) of the "Detailed Verification" section in each of the attached WSVs. This information, together with the respective WSAs approved by IRWD in 2015, reflects IRWD's confirmation that the project water demands, together with demands from any other developments that have previously received WSVs or will-serve, or other projects that have come to IRWD's attention either through developers or through the respective land use agency approval process, are, in the aggregate, within the demands identified by that WSA. In accordance with this procedure, the attached WSVs are based on the respective WSAs and information contained in the WSVs.

Director Withers reported that this item was reviewed and approved by the Water Resources Policy and Communications Committee on May 12, 2016. On MOTION by Withers, seconded and unanimously carried, THE BOARD APPROVED THE VERIFICATION OF SUFFICIENT WATER SUPPLY FOR THE WEST ALTON PARCEL DEVELOPMENT AND THE VERIFICATION OF SUFFICIENT WATER SUPPLY FOR THE EL TORO 100-ACRE PARCEL DEVELOPMENT.

MICHELSON WATER RECYCLING PLANT BIOSOLIDS AND ENERGY RECOVERY FACILITIES CONTRACT CHANGE ORDERS AND AMENDMENT NO. 1 TO AGREEMENT WITH ORANGE COUNTY SANITATION DISTRICT FOR INTERIM SOLIDS HANDLING

General Manager Cook reported that construction of the Biosolids Project was awarded to Filanc/Balfour-Beatty (FBB) in March 2013 in the amount of \$163,513,307. The Biosolids Project will provide biosolids digestion, dewatering, energy production, and on-site sludge drying. The project includes excavation for subsurface structures; installation of 3,009 foundation piles; three egg-shaped digesters; a state-of-the-art odor control system; a biogas conditioning system and power generation using micro-turbines; a fats, oil and grease (FOG) receiving station; and new utility services. Mr. Cook said that staff negotiated a two-year time extension of the Orange County Sanitation District (OCSD) lease for Transfer of Wastewater Solids Residuals due to the Biosolids construction extending beyond December 2016.

Executive Director of Engineering and Water Quality Burton reported that staff negotiated with FBB and agreed to the labor and material costs contained in Contract Change Order (CCO) No. 41. The change order contains Secondary Circuit Breakers for Transformers T-15, T-16, and T-1 for a cost of \$254,941.66; fire sprinkler system modifications for a cost of \$168,322.14; fiber optic system modifications for a cost of \$178,879.46; heating water boiler control modifications at a cost of \$71,379.00; concrete surface treatment at a cost of \$68,714.34; additional cameras at the unloading/loading area of the solids handling facility at a cost of \$61,731.96; additional Southern California Edison (SCE) and Southern California Gas modifications at a cost of \$51,238.69; additional potholing due to the electrical realignments at a cost of \$36,706.57; SCADA Control Modifications for the Acid Phase Digesters, Methane Digesters, and Sludge Holding Tank at a cost of \$50,540.23; miscellaneous SCADA, instrumentation, and electrical modifications at a cost of \$130,593.37; and centrifuge pedestal modifications at a cost of \$30,603.14.

Mr. Burton reported on CCO No. 42 includes several items that result in credits to IRWD. CCO No. 42 includes a change in the lightning protection installation for the egg-shaped digesters in the credit amount of <\$97,141.74>; value engineering of chemical pump systems in the credit amount of <\$48,549.90>; centrifuge seismic restraint design costs in the credit amount of <\$24,064.00>; overtime inspection hours from 6/1/2015 through 12/31/2015 in the credit amount of <\$17,710.00>; and deletion of electrical and instrumentation in the credit amount of <\$12,305.45>.

Director Reinhart said that this item was reviewed and approved by the Engineering and Operations Committee on May 17, 2016. On MOTION by Reinhart, seconded and unanimously carried, THE BOARD APPROVED CONTRACT CHANGE ORDER NO. 41 IN THE AMOUNT OF \$1,103,650.56 WITH FILANC/BALFOUR-BEATTY FOR THE MICHELSON WATER RECYCLING PLANT BIOSOLIDS AND ENERGY RECOVERY FACILITIES, PROJECT NO. 4286; APPROVED CONTRACT CHANGE ORDER NO. 42 IN THE CREDIT AMOUNT OF <\$199,771.09> WITH FILANC/BALFOUR-BEATTY FOR THE MICHELSON WATER RECYCLING PLANT BIOSOLIDS AND ENERGY RECOVERY FACILITIES, PROJECT NO. 4286; AND AUTHORIZED THE GENERAL MANAGER TO EXECUTE AMENDMENT NO. 1 TO THE AGREEMENT FOR TRANSFER OF WASTEWATER SOLIDS RESIDUALS WITH ORANGE COUNTY SANITATION DISTRICT, SUBJECT TO NON-SUBSTANTIVE CHANGES.

HOLT PROPERTY PURCHASE

Executive Director of Water Policy Weghorst reported that IRWD is pursuing the purchase of property in Riverside County that is located within Palo Verde Irrigation District (PVID). Mr. Weghorst said that on April 18, 2016, Bardeen Partners, pursuant to provisions included in its Articles of Incorporation, executed a Purchase and Sale Agreement to purchase the Holt Property comprised of 103 acres which is within the vicinity of the Eaton property that was purchased by IRWD in March 2016. Water tolls are paid on 100 acres of the Property which are enrolled in the existing Metropolitan Water District/PVID Fallowing Program.

Mr. Weghorst said that in the near term, land purchased by IRWD in the PVID service area would continue to be farmed with tenant farm leases which would generate income for IRWD and IRWD would participate in the existing MWD/PVID fallowing program and receive fallowing payments from MWD. He said that in the long term, IRWD-owned land within PVID would continue to be cultivated through tenant farm leases; IRWD could participate in any fallowing and other water conservation programs developed and implemented by MWD and PVID; and IRWD would also work with MWD and Municipal Water District of Orange County to develop mutually-beneficial programs and agreements through which IRWD would receive increased water supply reliability during periods of drought and supply interruptions in exchange for water conserved on IRWD-owned lands in PVID.

Mr. Weghorst said that the Purchase Agreement provides for a 40-day due diligence period in which there is an opportunity to conduct any studies, tests and inspections that are deemed necessary prior to the acquisition of the property. He said that Dee Jaspar & Associates (DJA) was retained to oversee the due diligence investigations and to complete a Baseline Property Assessment Report. He said that the due diligence investigations have been completed and to date shows the Holt Property is generally maintained with no recognized onsite environmental conditions. This property is currently planted in alfalfa with 37 acres fallowed per the Fallowing Program. DJA reported that the alfalfa crop appears to be slightly spotty and less dense than growth in an adjacent field. The difference can be due to the different varieties of alfalfa planted, the age of the crop, or farming practices.

Director of Treasury and Risk Management Jacobson reported that staff found no items of record to contest in the initial Preliminary Title Report. While performing the mineral search of the Property, DJA identified a possible illegal transfer in 1995 of approximately 11 acres of property adjacent to two neighboring five-acre home sites. This transfer occurred in 1995. On May 11, 2016, the escrow provider and seller were notified of this finding. He said that if this transfer is found to be legal or is made legal via a parcel map or lot line adjustment, then it would remove about 11 acres from the Holt Property which would reduce the purchase from 103 acres to 92 acres. The seller's broker is working with the seller to resolve this issue.

Director Swan reported that this item was discussed by the Bardeen Property Ad Hoc Committee on May 19, 2016. On MOTION by Swan, seconded and unanimously carried, THE BOARD, SUBJECT TO BARDEEN PARTNERS, INC. APPROVAL OF THE ASSIGNMENT OF THE PURCHASE AGREEMENT TO IRWD, AUTHORIZED THE GENERAL MANAGER TO EXECUTE THE ASSIGNMENT AND ASSUMPTION OF REAL PROPERTY PURCHASE AGREEMENT ACCEPTING THE ASSIGNMENT OF THE PURCHASE AND SALE AGREEMENT FROM BARDEEN PARTNERS, INC.; AUTHORIZED THE TREASURER TO REQUEST AND EXECUTE ANY NECESSARY AMENDMENT TO THE PURCHASE AND SALE AGREEMENT OR AN ADDENDUM TO THE ESCROW INSTRUCTIONS TO EXTEND THE DUE DILIGENCE PERIOD FOR UP TO THIRTY DAYS TO CORRECT THE TITLE ISSUE IDENTIFIED ON THE PROPERTY; FIND THAT ALL MATTERS CURRENTLY IDENTIFIED WITH REGARD TO THE CONDITION OF TITLE, SUBJECT TO CORRECTION OF THE TITLE ISSUE IDENTIFIED ON THE PROPERTY, PHYSICAL CONDITION AND SUITABILITY OF THE PROPERTY FOR THE USES CONTEMPLATED ARE ACCEPTABLE; APPROVED THE ADDITION OF PROJECT 11956 (7305) TO THE FY

2015-16 CAPITAL BUDGET IN THE AMOUNT OF \$1,690,000 FOR THE PURCHASE OF THE PROPERTY; FOUND THAT THE PROPERTY ACQUISITION ONLY IS EXEMPT FROM CEQA; APPROVED THE PROJECT AND AUTHORIZED STAFF TO POST AND FILE THE NOTICES OF EXEMPTION IN ORANGE AND RIVERSIDE COUNTIES; AND, AND AUTHORIZED THE GENERAL MANAGER AND TREASURER AND EACH OTHER OFFICER OF THE DISTRICT, EACH ACTING SINGLY, TO EXECUTE AND DELIVER ANY AND ALL DOCUMENTS, PROGRAM ASSIGNMENTS, CERTIFICATES, INSTRUCTIONS AND INSTRUMENTS NECESSARY OR PROPER FOR CARRYING OUT AND CLOSING THE REAL ESTATE PURCHASE TRANSACTION FOR THE ACQUISITION OF THE PROPERTY, SUBJECT TO CORRECTION OF THE TITLE ISSUE IDENTIFIED ON THE PROPERTY.

GENERAL MANAGER'S REPORT

General Manager Cook said he learned of a community issue at the Portola High School in Irvine relative to potential contaminants which could be attributable to recycled water. Mr. Cook said he has been in contact with staff at the Irvine Unified School District and will be tracking this issue. Director Withers commented that he believed there was confusion with the terminology as the nursery had used irrigation water which was recycled, and may have been gravity drained to the high school site.

Mr. Cook reported on the drought regulation revisions by the State Board which are now supply based and are shifting control to handle the drought by self-certification. He further complimented Director Fiona Sanchez on her efforts. In response to Director Reinhart's comment on how to "cement in" conservation measures, Director Sanchez briefly described a few of the measures taken and said that an item will be submitted to the Water Resources and Policy Committee to discuss the new conservation framework going forward.

Mr. Cook reported on his vacation plans next week and that he will be appointing Executive Director of Clary to act on his behalf.

DIRECTORS' COMMENTS

Director Withers said he attended his regular monthly meetings.

Director Swan reported on his attendance at an ACWA conference, a WACO Planning meeting, a SAWPA Watershed meeting representing the Newport Bay Watershed Executive Committee, a Newport Coastal Coalition meeting, a Southern California Water Dialogue meeting, and a MWDOC/OCWD Joint Committee meeting.

Director Swan further commented on tonight's conservation proclamation received from MWDOC and said he believed that the customers should also be complimented on their conservation efforts.

DIRECTORS' COMMENTS (CONTINUED)

Director Reinhart reported on his attendance at an ACWA conference, a MWDOC Board meeting, and an Orange County Water Summit meeting.

Director Matheis reported on her attendance at an ACWA conference, an Orange County Water Summit meeting, and an Irvine Historic Museum event which she attended with Director Swan.

CLOSED SESSION

President Matheis said that the following Closed Session would be held:

Conference with Legal Counsel relative to anticipated litigation- Government Code Section 54956.9(d)(2) – significant exposure to litigation (one potential case), and Government Code Section 54956.9(d)(4) initiation of litigation (one potential case)

OPEN SESSION

Following the Closed Session, the meeting was reconvened with Reinhart, Withers, Swan, and Matheis present. President Matheis said that there was no action to report.

ADJOURNMENT

There being no further business, President Matheis adjourned the meeting.

APPROVED and SIGNED this 13th day of June, 2016.

President, IRVINE RANCH WATER DISTRICT

Secretary IRVINE RANCH WATER DISTRICT

APPROVED AS TO FORM:

Legal Counsel - Bowie, Arneson, Wiles & Giannone

EXHIBIT “B“

MINUTES OF REGULAR MEETING – JUNE 6, 2016

The regular meeting of the Board of Directors of the Irvine Ranch Water District (IRWD) was called to order at 5:00 p.m. by President Matheis on June 6, 2016 in the District office, 15600 Sand Canyon Avenue, Irvine, California.

Directors Present: LaMar, Reinhart (arrived at 5:15 p.m.), Swan, Matheis and Withers.

Directors Absent:..None.

Also Present: General Manager Cook, Executive Director of Engineering and Water Quality Burton, Executive Director of Finance Clary, Executive Director of Water Policy Weghorst, Executive Director of Operations Shields, Director of Administrative Services Mossbarger, Director of Human Resources Roney, Legal Counsel Arneson, Secretary Bonkowski, Principle Engineer Akiyoshi, Mr. Christopher Smithson, Mr. Matt Veeh, Ms. Derrien Cotton, and Mr. Ed Casey/

WRITTEN COMMUNICATIONS: None.

ORAL COMMUNICATIONS: Director of Administrative Services Mossbarger introduced Ms. Derrien Cotton, newly hired Customer Service Manager to the Board.

ITEMS RECEIVED TOO LATE TO BE AGENDIZED: None.

CLOSED SESSION

President Matheis said that the following Closed Session would be held:

Conference with Legal Counsel relative to anticipated litigation- Government Code Section 54956.9(d)(2) – significant exposure to litigation (one potential case), and Government Code Section 54956.9(d)(4) initiation of litigation (one potential case).

OPEN SESSION

Following the Closed Session, the meeting was reconvened with LaMar, Reinhart, Withers, Swan, and Matheis present. President Matheis reported that on motion duly made and carried with Directors LaMar, Reinhart, Swan, Withers, and Matheis voting aye, an action was authorized to be filed against the Orange County Water District to invalidate the basin equity assessment as a penalty on IRWD’s recycled water.

ADJOURNMENT

There being no further business, President Matheis adjourned the meeting.

APPROVED and SIGNED this 13th day of June, 2016.

President, IRVINE RANCH WATER DISTRICT

Secretary IRVINE RANCH WATER DISTRICT

APPROVED AS TO FORM:

Legal Counsel - Bowie, Arneson, Wiles & Giannone

June 13, 2016

Prepared and

submitted by: N. Savedra

Approved by: Paul Cook



CONSENT CALENDAR

FISCAL YEAR 2016-17 GENERAL COUNSEL SERVICES FOR BOWIE, ARNESON, WILES & GIANNONE

SUMMARY:

Bowie, Arneson, Wiles & Giannone (BAWG) has provided a proposed Letter of Engagement for the purpose of providing legal services to the District for Fiscal Year (FY) 2016-17, effective July 1, 2016. BAWG's services shall not exceed \$400,000 without additional authorization from the District.

Attached as Exhibit "A" are the proposed terms of the Legal Services Agreement. BAWG's hourly rates are as follows with no increase from the previous fiscal year:

Partner:	\$220/hour
Senior Associate:	\$195/hour
Associate:	\$185/hour
Paralegal:	\$ 85/hour

As per the terms of the Legal Services Agreement, billing for miscellaneous general legal services will be on a fixed-fee basis, and all other services will be billed on an hourly basis. BAWG's hourly rates are based upon a number of factors, including the level of experience of the attorneys.

The only change to the terms of the contract from the previous fiscal year are the fees and expenses for bond counsel work as outlined in Exhibit "A" in section II(c) of the Letter of Engagement. The bond counsel work is pursuant to a recent Attorney General's opinion on compliance with Government Code 1090 requirements.

FISCAL IMPACTS:

BAWG's services shall not exceed a total of \$400,000 for FY 2016-17 without additional authorization from the District.

ENVIRONMENTAL COMPLIANCE:

This item is not a project as defined in the California Environmental Quality Act Code of Regulations, Title 14, Chapter 3, Section 15378.

Consent Calendar: FY 2016-17 General Counsel Services for Bowie, Arneson, Wiles & Giannone
June 13, 2016
Page 2

COMMITTEE STATUS:

This item was reviewed by the Finance and Personnel Committee on June 7, 2016.

RECOMMENDATION:

THAT THE BOARD APPROVE AND AUTHORIZE THE GENERAL MANAGER TO EXECUTE THE ENGAGEMENT AGREEMENT WITH BOWIE, ARNESON, WILES & GIANNONE EFFECTIVE JULY 1, 2016 FOR GENERAL COUNSEL SERVICES IN THE AMOUNT NOT TO EXCEED \$400,000.

LIST OF EXHIBITS:

Exhibit "A" – Terms of Legal Services Agreement from Bowie, Arneson, Wiles & Giannone

Exhibit "A"

BOWIE, ARNESON, WILES & GIANNONE

A PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS
ATTORNEYS AT LAW

ALEXANDER BOWIE*
JOAN C. ARNESON
WENDY H. WILES*
PATRICIA B. GIANNONE
ROBERT E. ANSLOW
BRIAN W. SMITH
JEFFREY A. HOSKINSON
JEFFREY W. FREY
TYLER E. MENDEZ
MARGOT E. H. STEVENS
CONOR H. MCELROY

4920 CAMPUS DRIVE
NEWPORT BEACH, CALIFORNIA 92660
(949) 851-1300

(800) 649-0997
FAX: (949) 851-2014

REF. OUR FILE
8001A20

*A PROFESSIONAL CORPORATION

May 27, 2016

Mr. Paul Cook
Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, CA 92619-7000

Dear Paul:

This letter sets forth our firm's engagement to provide general counsel services to Irvine Ranch Water District. Our services shall not exceed \$400,000.00 for the District's fiscal year 2016-17 without additional authorization from the District. As described in the attached Terms of Legal Services Agreement, billing for miscellaneous general legal services will be on a fixed-fee basis, and all other services will be billed on an hourly basis.

Our firm's hourly rates are based upon a number of factors, including the level of experience of the attorneys. The 2016-17 hourly rates (effective July 1, 2016) are as follows:

Partner	\$220
Senior Associate	\$195
Associate	\$185
Paralegal	\$85

This letter, together with the attached Terms of Legal Services Agreement, sets forth the terms of our engagement.

We appreciate the opportunity to continue providing general counsel services to the District.

Very truly yours,

BOWIE, ARNESON,
WILES & GIANNONE

By



Joan C. Arneson

JCA:
Encl.
38688

BOWIE, ARNESON, WILES & GIANNONE

Mr. Paul Cook

May 27, 2016

Approval of Engagement

We have read the foregoing letter and attached Terms of Legal Services Agreement and agree to the terms of Bowie, Arneson, Wiles & Giannone's engagement, effective as of the date on which Bowie, Arneson, Wiles & Giannone first provided services to us under the attached engagement terms.

Date: _____, 2016

IRVINE RANCH WATER DISTRICT

By: _____

BOWIE, ARNESON, WILES & GIANNONE

Mr. Paul Cook

May 27, 2016

TERMS OF LEGAL SERVICES AGREEMENT

I. Legal Services Provided

Bowie, Arneson, Wiles & Giannone is retained by Irvine Ranch Water District for the purpose of providing legal services for general legal matters, including litigation and other matters as may be requested from time to time. Such services include bond counsel or co-bond counsel services. We will report regularly and keep you informed of significant developments in matters in which we are providing legal services. During the course of our services, we may express opinions or beliefs to you about the effectiveness of various courses of action, but such expressions shall not be construed as promises or guarantees.

II. Fees

A. Fixed Fee for Miscellaneous General Legal Services

The Miscellaneous General Legal Services ("General Services") provided by Bowie, Arneson, Wiles & Giannone to Irvine Ranch Water District will be charged on a fixed fee basis. The fixed fee for General Services will be paid on the basis of \$55,000.00 for the services billed during the 2016-17 District fiscal year. One-twelfth of said amount will be billed as a monthly installment at the same time as each monthly statement prepared and sent for our hourly-basis services. Proration of the monthly amount will be made as necessary to adjust for any partial billing periods used to match our June and July cycles to the District fiscal year.

For informational purposes, our statements will include hours expended for the work included in the fixed fee. Unless the fixed fee would be unconscionable, the fixed fee will be earned in full and will not be refundable in any part once substantial services have been performed; provided, a refund may be computed based on facts and circumstances in the event of our termination or withdrawal.

The fixed fee will not include expenses, which will be billed and payable as set forth in Section III.

B. Scope of Services Included in Fixed Fee

The services to be included within the fixed fee are those of the type that we have typically furnished to you under the invoice entitled "General" in our monthly statements and include the following services as requested by the Board or a staff member: attendance at Board of Directors meetings; attendance at Committee meetings (unless in conjunction with a specific matter being billed on an hourly basis); review of agendas and other material in preparation for Board and Committee meeting attendance; review and assistance with draft minutes; preparation or assistance with preparation of miscellaneous resolutions; assistance with draft agenda item/closed session item preparation; and legal advice, consultation, research, drafting or assistance with drafting of contracts and correspondence and other assistance on miscellaneous general and/or non-continuing items of limited scope or duration.

C. Services Excluded from the Fixed Fee

The fixed fee services will not include services in conjunction with: litigation; administrative hearing or investigatory proceedings; bond counsel or general counsel services related to financings or outstanding bonds; capital or special projects; financial/ real property matters; legislative matters; interagency matters; personnel matters; conflict of interest matters; reorganizations; and other ongoing or extended matters involving negotiation, representation, drafting and similar services that we have typically furnished to you under separate invoices other than "General."

Fees for legal services excluded from the fixed fee are charged on an hourly basis for the time of the legal personnel spent on a matter. The rates are based on several factors, including the expertise and level of experience of the attorneys. The rates are adjusted by the firm from time to time, usually effective for the period July 1-June 30. We will provide advance notice of any rate change. Time on any task is billed in increments of a tenth of an hour. Statements are prepared and sent each month, and are due when presented.

Upon request and arrangement in advance, fees for a particular task or matter may be based on other than hourly rates or monthly billing. Fees and expenses for bond counsel, co-bond counsel and general counsel services related to financings shall be hourly, on a time and materials basis, and not on a percentage of the amount issued or other basis. Such hourly fees and expenses may be billed monthly or may be accrued and billed by us at closing to facilitate the District's aggregation of closing costs payable through the financing; however, such fees shall be payable whether or not the financing closes, and are not contingent.

Staffing work assignments will be made, to the extent possible, so as to maximize our legal effectiveness and minimize your legal expenses.

III. Expenses

In addition to fees, we will bill for reimbursement of actual and reasonable costs and expenses, including, but not limited to, reproduction of documents, long-distance telephone charges, messenger and courier services, facsimile, computerized legal research, document printing, recording charges and non-local mileage and travel expenses. We may also bill for clerical staff time of an unusual nature. Costs and expenses are included in the monthly statements.

IV. District's Obligations

You agree to provide us with direction and guidance and to keep us informed of significant developments related to matters with respect to which we are providing legal services. You also agree to pay our statements in a timely manner.

V. Termination of Representation

Our services may be terminated by you at any time by written notice to us. We may withdraw with your consent or for good cause. Good cause may include a failure to cooperate or follow our advice on a material matter, failure to pay our statements in a timely manner, or any fact or circumstance that would render our continuing representation unlawful or unethical. In the event of termination or withdrawal, we are to be paid for fees and charges incurred on your behalf up to the date of termination or withdrawal.

VII. Miscellaneous

No modifications hereof shall be effective unless set out in writing and signed by you and us.

We maintain errors and omissions insurance coverage applicable to the services to be rendered.

This statement of terms of legal services agreement shall be our entire agreement, subject to amendment by the parties to provide for, among other matters, other fee arrangements.

June 13, 2016

Prepared by: L. Bonkowski

Submitted by: C. Clary

Approved by: Paul Cook

CONSENT CALENDAR

APPROVING QUITCLAIM OF ASSETS, LIQUIDATION AND DISSOLUTION OF IRWD WATER SERVICE COMPANY II LLC

SUMMARY:

In 2008, the IRWD Water Service Corporation (IRWD WSC) executed various actions related to the acquisition and merger of the Orange Park Acres Mutual Water Company (OPAMWC) into the Irvine Ranch Water District. One of these actions was for IRWD WSC to form the IRWD Water Service Company II LLC (IRWD WSC II LLC) to engage in the sale and distribution of water to property owners and customers within the territory of OPAMWC, and any other business acquired under the Agreement of Merger. Staff has determined that IRWD WSC II LLC is no longer necessary as the acquisition balance has been retired and recommends taking such actions to dissolve this company. This requires the adoption of a resolution to approve a quitclaim of assets, liquidation and dissolution. In addition, staff will be submitting the same action at the annual Water Service Corporation Board meeting on June 13, 2016.

BACKGROUND:

In January of 2008, IRWD WSC and the Irvine Ranch Water District executed a Limited Liability Company Operating Agreement (Operating Agreement) for the purpose of forming the IRWD WSC II LLC. The purpose of this company was to engage in the sale and distribution of water to property owners and customers within the Orange Park Acres Mutual Water Company (OPAMWC) and any other business acquired under the Agreement of Merger.

As the Orange Park Acres acquisition balance was retired as of June 30, 2015, staff has reviewed the Operating Agreement and has determined that it is in the best interest of IRWD WSC to authorize the execution and delivery of such documents and such actions by staff, to liquidate and dissolve this company. These documents are provided in Exhibits "A" and "B". Additionally, an agenda item will be submitted to the IRWD WSC Board of Directors on June 13, 2016 to adopt a resolution approving these actions.

FISCAL IMPACTS:

An annual savings of approximately \$9,600 for franchise taxes and fees and accountant tax preparation fees will be realized.

ENVIRONMENTAL COMPLIANCE:

None.

RECOMMENDATION:

THAT THE FOLLOWING RESOLUTION BE ADOPTED BY TITLE:

RESOLUTION OF THE BOARD OF DIRECTORS OF THE
IRVINE RANCH WATER DISTRICT WATER APPROVING
QUITCLAIM OF ASSETS, LIQUIDATION AND DISSOLUTION
OF IRVINE RANCH WATER DISTRICT WATER SERVICE COMPANY II LLC

LIST OF EXHIBITS:

Exhibit “A” – Resolution
Exhibit “B” – Grant Deed

EXHIBIT "A"

RESOLUTION NO. 2016 - ____

RESOLUTION OF THE BOARD OF DIRECTORS OF THE IRVINE RANCH WATER DISTRICT APPROVING QUITCLAIM OF ASSETS, LIQUIDATION AND DISSOLUTION OF IRVINE RANCH WATER DISTRICT WATER SERVICE COMPANY II LLC

WHEREAS, the Irvine Ranch Water District ("IRWD") and the Irvine Ranch Water District Water Service Corporation (the "Corporation") entered into a Limited Liability Company Operating Agreement, dated as of January 28, 2008 (the "Operating Agreement"), under the Beverly-Killea Limited Liability Company Act (the "Act") for the purpose of forming the IRWD Water Service Company II LLC, a California limited liability company ("LLC II"), the members of which are IRWD and the Corporation; and

WHEREAS, LLC II was duly formed; and

WHEREAS, the business purpose of LLC II under the Operating Agreement is to engage in the sale and distribution of water to property owners and customers within the territory of Orange Park Acres Mutual Water Company ("OPAMWC") and any other business acquired under an Agreement of Merger entered into by and between LLC II and OPAMWC; and

WHEREAS, under the Agreement of Merger, OPAMWC, as the disappearing company, was merged into LLC II, as the surviving company; and

WHEREAS, pursuant to the Operating Agreement, the Acquisition Balance, defined and determined therein as the equitable contribution of the OPAMWC service territory toward the cost of the existing IRWD system and property, was reduced to zero, commencing the setting of water commodity rates and service charges applicable within the former OPAMWC territory in the same manner as in other portions of IRWD; and

WHEREAS, this Board of Directors believes it to be in the best interest of IRWD to authorize the execution and delivery of such documents and such actions by IRWD, in its capacities as member and manager of LLC II, as may be necessary to effect the liquidation, winding up and dissolution of LLC II; and

WHEREAS, the Act was recodified, effective January 1, 2014, and the actions taken and authorized herein are intended to be in compliance therewith to the extent applicable.

NOW, THEREFORE, THE BOARD OF DIRECTORS OF IRVINE RANCH WATER DISTRICT HEREBY RESOLVES AND DETERMINES AS FOLLOWS:

Section 1. IRWD hereby approves the quitclaiming of any and all interests of LLC II in property and assets to IRWD. Such approval includes the receipt of nominal or non-cash consideration for the quitclaim, including without limitation the commitments of IRWD set forth in Sections 4 and 5 hereof. To the extent that such quitclaim constitutes a Terminating Capital Transaction as defined in the Operating Agreement, IRWD, as a member of LLC II, hereby votes for and approves such Terminating Capital Transaction, and acknowledges that no net proceeds

will accrue from such Terminating Capital Transaction.

Section 2. IRWD hereby votes for and approves the dissolution, liquidation and termination of LLC II, the winding up of LLC II's affairs and the cancellation of LLC II's articles of organization. IRWD waives notice of such matters.

Section 3. IRWD acknowledges receipt of financial reporting of LLC II as a blended component unit of IRWD in IRWD's financial statements. To the extent that as of this date any other reports or information required pursuant to Section 7.6.1 of the Operating Agreement have not been completed or submitted, or are hereafter required, the same are hereby waived. Without limiting the foregoing, statements or accountings relating to disposition of funds and assets upon dissolution are hereby waived.

Section 4. IRWD assumes or guarantees payment of all of the outstanding debts and liabilities, if any, of LLC II. Based upon due consideration of the financial responsibility of IRWD, such assumption is a reasonable and adequate means of making provision for the debts and liabilities of LLC II. All funds of LLC II, including funds held in the capital accounts of the members that are transferred to IRWD pursuant to the dissolution of LLC II, shall be transferred to the Water Replacement Fund of IRWD. To the extent that such transfer constitutes a Terminating Capital Transaction as defined in the Operating Agreement, IRWD, as a member of LLC II, hereby votes for and approves such Terminating Capital Transaction, and acknowledges that no net proceeds will accrue from such Terminating Capital Transaction.

Section 5. IRWD agrees to assume the remaining tax liability, if any, of LLC II.

Section 6. The President, Treasurer and Secretary and each other officer of IRWD hereby are authorized and directed, on behalf of IRWD, or on behalf of IRWD as a member of LLC II or the manager of LLC II, as the case may be, to execute and deliver any and all documents and instruments and to do and cause to be done any and all acts and things necessary or proper for carrying out the transactions contemplated by this resolution.

ADOPTED, SIGNED and APPROVED this ____ day of _____, 2016.

President, IRVINE RANCH WATER
DISTRICT and of the Board of Directors
thereof

Secretary, IRVINE RANCH WATER
DISTRICT and of the Board of Directors
thereof

APPROVED AS TO FORM:
BOWIE, ARNESON, WILES & GIANNONE
IRWD Legal Counsel

BAWG114415/ 061016

**RECORDING REQUESTED BY AND
WHEN RECORDED RETURN TO:**

Ray Thatcher, District R/W Agent
Irvine Ranch Water District
15600 Sand Canyon Avenue
P.O. Box 57000
Irvine CA, 92619-7000
IRWD Doc. No. E
ASSESSOR PARCEL NO.(S):

EXHIBIT "B"

(Space Above This Line For Recorder's Use)

This document is recorded at the request of and for the benefit of Irvine Ranch Water District and is therefore exempt from the payment of the recording fee pursuant to Government Code Section 6103 and from the payment of the documentary transfer tax pursuant to Revenue and Taxation Code Section 11922.

QUITCLAIM DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, IRWD WATER SERVICE COMPANY II LLC ("**Owner**"), a California limited liability company and the successor in interest to Orange Park Acres Mutual Water Company pursuant to certificate of merger filed May 19, 2008 in the Office of the Secretary of State of the State of California and recorded on May 21, 2008 as Instrument No. 2008000241910 of Official Records in the Office of the County Recorder of the County of Orange, State of California, does hereby remise, release, and forever quitclaim to IRVINE RANCH WATER DISTRICT, a California water district organized under and existing pursuant to Section 34000 *et seq.* of the California Water Code, its successors and assigns, the property described as follows:

- (1) all RIGHT, TITLE and INTEREST in and to Parcels 1, 2, 3, and 4 of Parcel Map No. 83-764 as shown on a map filed in Book 194, Pages 44 and 45 of Parcel Maps in the Office of the County Recorder of the County of Orange, State of California (Assessor's Parcel No. 383-294-02);
- (2) all RIGHT, TITLE and INTEREST in and to Lot 1 of Tract No. 918 as shown on a map filed in Book 28, Pages 41 through 43 of Miscellaneous Maps in the Office of the County Recorder of the County of Orange, State of California (Assessor's Parcel No. 393-293-01);
- (3) all RIGHT, TITLE and INTEREST in and to that portion of Lot 11 of Tract No. 944 as shown on a map filed in Book 29, Page 41 of Miscellaneous Maps as described in that certain Grant Deed recorded February 3, 1967 in Book 8169, Page 707 of Official Records, both in the Office of the County Recorder of the County of Orange, State of California (Assessor's Parcel No. 093-242-80); and
- (4) all other RIGHT, TITLE and INTEREST in, upon, or otherwise pertaining to, any lands within the County of Orange, State of California, held by Owner on the date of recording hereof, including without limitation fee simple, easements, rights of way, reservations, dedications, and any other interests in land, whether recorded or unrecorded, together with any pipelines, water system facilities or other improvements of any kind.

It is the intent of this instrument to convey to Irvine Ranch Water District any and all interests of Owner in and to real property.

Dated: June 13, 2016

"Owner"

IRWD WATER SERVICE COMPANY II LLC,
a California limited liability company

By: IRVINE RANCH WATER DISTRICT,
Manager

By: _____
Mary Aileen Matheis,
President

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
)
COUNTY OF ORANGE)

On _____, 2016, before me, _____, a Notary Public in and for said State, personally appeared Mary Aileen Matheis, 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 _____

(SEAL)

Notary Public in and for said State

IRVINE RANCH WATER DISTRICT

CERTIFICATE OF ACCEPTANCE

This is to certify that the interest in real property conveyed by deed or grant dated _____
from IRWD WATER SERVICE COMPANY II LLC, a California limited liability company, to IRVINE
RANCH WATER DISTRICT, a California Water District, is hereby accepted by the undersigned officer on
behalf of the Board of Directors pursuant to authority conferred by Resolution 2014-40 of the Board of
Directors, adopted on September 8, 2014, and the grantee consents to recordation thereof by its duly authorized
officer.

Date: _____

IRVINE RANCH WATER DISTRICT

By: _____
Leslie Bonkowski
Secretary to the Board of Directors

June 13, 2016

Prepared by: Alex Aguilar 

Submitted by: Rob Jacobson/Cheryl Clary 

Approved by: Paul Cook 

CONSENT CALENDAR

FY 2016-17 OPERATING BUDGET VENDOR EXPENDITURE COMMITMENTS GREATER THAN \$100,000

SUMMARY:

Each year, following Board approval of the District's operating budget, staff initiates or renews commitments with vendors for certain products and services included in the approved budget. Staff has provided a list of those vendors with expected commitments totaling \$100,000 or greater in fiscal year (FY) 2016-17 for the review. The list of vendor commitments excludes contracts/agreements which have been previously approved by separate Board action. Consistent with provisions included in the District's *Policy Regarding Authorization of Expenditures*, staff recommends that the Board approve the list of vendor expenditure commitments greater than \$100,000 for FY 2016-17.

BACKGROUND:

On an annual basis, the Board approves the fiscal year operating budget for the District for the upcoming year. Included in the operating budget are expenditures for line items such as chemicals, fuel, hauling of biosolids and other products and services which result in commitments greater than \$100,000. These expenditures typically utilize cooperative agreements for best pricing when applicable, or have been previously competitively bid and in some cases are for products (e.g. certain chemicals) provided by a single supplier.

These commitments are structured as open purchase orders and typically consist of multiple individual transactions during the fiscal year with the cumulative total of the purchase order exceeding \$100,000. The approval structure allows staff to order goods and services on a regular and efficient basis during the fiscal year. These commitments are a "not to exceed" amount and can be cancelled at any time.

A list of the planned vendor commitments exceeding \$100,000 for FY 2016-17 is attached as Exhibit "A". The list includes vendor names, descriptions of the products or service being provided, the basis for pricing (e.g. cooperative agreement, single source, etc.) and estimated annual expense. Excluded from this list are contracts in excess of \$100,000 which have been previously approved by separate Board action and are within their approved contract period, as well as recurring utility bills.

The total planned expenditure amount for the listed vendors for FY 2016-17 is \$2,241,400, representing approximately 1.5% of total planned expenditures in the approved operating budget. Consistent with provisions included in the District's *Policy Regarding Authorization of Expenditures*, staff recommends that the Board approve the list of vendor commitments greater than \$100,000 for FY 2016-17.

Consent Calendar: FY 2016-17 Operating Budget – Vendor Expenditure Commitments Greater than \$100,000
June 13, 2016
Page 2

FISCAL IMPACTS:

Total planned expenditures for FY 2016-17 for vendor commitments greater than \$100,000 (excluding contracts/agreements approved by separate Board action) are \$2,241,400, representing approximately 1.5% of total planned expenditures in the approved FY 2016-17 operating budget.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

COMMITTEE STATUS:

This item was reviewed by the Finance and Personnel Committee on June 7, 2016.

RECOMMENDATION:

THAT THE BOARD APPROVE THE LIST OF VENDOR COMMITMENTS GREATER THAN \$100,000 BASED ON APPROVED FY 2016-17 OPERATING BUDGET EXPENDITURES.

LIST OF EXHIBITS:

Exhibit “A” – FY 2016-17 Operating Budget - Vendor Commitments Greater than \$100,000

Exhibit "A"

VENDORS	SERVICES	PO#	Requester	Dept	TYPE	TIME		PO Amt
Hill Brothers Chemical (operating budget approved)	OPEN PO FOR FERROUS CHLORIDE DELIVERIES TO LAWRP FACILITY COLLECTIONS SYSTEM FEED SITE FOR ODOR CONTROL CHEMICAL AS REQUIRED DURING FY JULY 1, 2015 THRU JUNE 30, 2016. UNIT PRICE \$3.35/GAL, MINIMUM 1,500 GAL DEL. FUEL SURCHARGE \$30.	520588	H Solis	570	Competitive Bid	Year 2 of 2	MR	\$ 140,000.00
Olin Corporation (operating budget approved)	OPEN PO TO SUPPLY MWRP WITH SODIUM HYPOCHLORITE 12.5% FOR EFFLUENT DISINFECTION DELIVERIES DURING FY JULY 1, 2015 THRU JUNE 30, 2016. DEL METHOD: BULK, VOL 4500-5000 GAL. SOCWA AGREEMENT.	520011	D Hayden	550	Cooperative Agreement (Socwa)	Annual	MR	\$ 430,000.00
Athens Services (operating budget approved)	OPEN PO TO SUPPLY SCREENINGS AND GRIT REMOVAL FROM MWRP DURING FY JULY 1, 2015 THRU JUNE 30, 2016. DEL METHOD: ATHENS TRUCK SERVICE. SOCWA AGREEMENT.	520184	D Hayden	550	Cooperative Agreement (Socwa)	Annual	MR	\$ 126,400.00
Olin Corporation (operating budget approved)	FY 15/16 OPEN PO FOR BULK SODIUM HYPOCHLORITE 12.5% (#105004 NSF APPROVED) SOCWA CONTRACT PRICE - \$0.554/GALLON UNTIL OCT 5, 2016	520007	W Wright	420	Cooperative Agreement (Socwa)	Annual	SB	\$ 175,000.00
JCI Jones Chemicals Inc (operating budget approved)	FY 15/16 OPEN PO FOR 1-TON CHLORINE GAS CYLINDERS FOR DYER ROAD WELLFIELD PDF (2915 S. HALLADAY ST. ID# 1) & IDF (2510 SUSAN ST. ID# 2) ACCOUNT# 53450050.	519944	W Wright	420	Cooperative Agreement (Socwa)	Annual	SB	\$ 140,000.00
Hill Brothers Chemical (operating budget approved)	OPEN PO FOR THE DELIVERY OF ODOR CONTROL PRODUCT (OXY-CAN) TO HATS DIVERSION SITE AS REQUIRED DURING FY JULY 1, 2015 THRU JUNE 30, 2016. UNIT PRICE \$3.35/GAL, MINIMUM 300 GAL DEL. FUEL SURCHARGE \$20.	520587	H Solis	570	Single Source	5 Years	MR	\$ 100,000.00
Aqua Ben Corp (operating budget approved)	OPEN PO FOR HYDROFLOC 860 BULK SHIPMENTS FOR LAWRP DURING FY JULY 1, 2015 THRU JUNE 30, 2016. BULK SHIPMENT IS APPROX 4,200 GAL @ 10.34 LB/GAL = 43,428 LBS. EST @ \$0.70/LB DELIVERED.	519733	V Cady	590	Single Source	2 Years	MR	\$ 155,000.00
Il Fuels Inc (operating budget approved)	FY 15/16 OPEN PO FOR 87 OCTANE UNLEADED & ULTRA LOW SULPHUR DIESEL #2 FUELS AT MRWP AND LAWRP FACILITIES	520179	R Perry	850	Cooperative	Year 1 of 2	SB	\$ 610,000.00
BioMagic Inc. (operating budget approved)	FY 15/16 OPEN PO FOR ODOR CONTROL CHEMICAL DELIVERIES(BIOMAGIC 250 - @3.20 PER GALLON) FOR COLLECTIONS LIFT STATION AND ODOR CONTROL INJECTION FACILITIES AS REQUIRED	525238	H. Solis	570	Single Source	5 Years	MR	\$ 200,000.00
Chem Tech International Inc. (operating budget approved)	FY 15/16 OPEN PO FOR CL-50 CORROSION CONTROL(\$15.36/GALLON) TO SGU AND PAP SITES	525315	D.Paulson	420	Single Source	3 Years	SB	\$ 165,000.00

June 13, 2016

Prepared and

submitted by: C. Compton 

Approved by: Paul Cook 

CONSENT CALENDAR

2016 LEGISLATIVE UPDATE

SUMMARY:

This report provides an update on the 2016 legislative session and IRWD priorities. As legislation develops, staff will provide updates and recommendations to the Water Resources Policy and Communications Committee and the Board, as appropriate.

Staff recommends that the Board consider the following actions/positions:

- *Water Foundation's Tiered Water Rates Proposal*- "SUPPORT IF AMENDED"
authorize staff to seek amendments to the proposal so that it complies with the California Constitution and reflects the tiered rate proposal the District put forward last year for discussion.

BACKGROUND:

The last day for fiscal committees to hear and report to the floor any bills introduced in its house is May 27, and the house of origin deadline is June 3. Any bill that does not meet the June 3 deadline and does not contain an urgency clause is now dead. The next major legislative deadline is June 15, which is the constitutional deadline for passage of the budget, while June 30 is the last day for a legislative measure to qualify for the November 8 General Election.

A copy of the 2016 Legislative Matrix is attached as Exhibit "A". Exhibit "B" is the "2016 Legislative Update Report: Links to Bill Texts", which contains links to the bills discussed below, unless a separate exhibit is noted.

State Budget Update:

April Revenue Numbers:

On May 10, 2016, State Controller Betty Yee released her monthly report on the State's finances. She announced that the State took in \$1.19 billion, or 6.6 percent, less than projections during the month of April. The lower-than-expected revenues were largely due to lower personal income tax receipts, which were \$1.22 billion or 8.4 percent lower than budget estimates. Sales tax revenues were \$53.9 million, or 6.2 percent, lower than expected. Corporate taxes were the only revenues that beat budget projections. They came in \$95.4 million, or 5.1 percent, higher than anticipated.

The State Controller summarized April's revenue impact on the budget in the following way:

"April's collections drove revenues for the fiscal year to date into negative territory compared to the January projections. For the fiscal year that began July 1, overall

revenues of \$95.15 billion are off by \$680.5 million, or 0.7 percent. The personal income tax and the sales tax are falling short by \$1.16 billion and \$217.6 million, respectively. The corporation tax for the fiscal year to date is surpassing expectations by \$476.3 million.”

The State ended the month of April with borrowable resources of \$25.59 billion, and outstanding loans of \$7.34 billion

Governor’s May Revise:

Following the release of April’s disappointing fiscal news, Governor Brown released the May revision to his proposed State Fiscal Year 2016-2017 Budget (the May Revise) on May 13, 2016. The May Revise proposes \$173.06 billion in total expenditures, \$169.83 billion in total revenues and designates \$3.29 billion for the Budget Stabilization Account/Rainy Day Fund. This compares to the \$170.7 billion in total expenditures, \$170.5 billion in total revenues, and \$3.55 billion designated for the Budget Stabilization Account/Rainy Day Fund in the Governor’s Proposed Budget, released in January. The May Revise reflects a decrease in required contributions to debt payments and the Rainy Day Fund due to lower revenues but remains consistent with Proposition 2’s requirements. The contributions have been reduced by a total of \$1.6 billion since January in the current fiscal year and in the May Revise.

The May Revise reflects the Administration’s concern over declining revenues and ongoing State budget commitments by including no new major spending initiatives although it does include the major new spending commitments approved by the Legislature and Governor since the Proposed Budget’s release in January. These commitments include providing additional funding for developmental disability services, higher payments to Medi-Cal providers and the passage of legislation that made California the first state in the nation to raise the statewide minimum wage to \$15 per hour, which will eventually raise annual General Fund costs by an estimated \$3.4 billion. These commitments were on top of the extensive commitments made since 2012, which include expanding health care coverage, instituting the Local Control Funding Formula for schools, and other spending increases in safety net programs. These commitments have raised General Fund costs by over \$19 billion per year.

Because of all of these commitments, the May Revise cautions against any further long-term spending increases. The Governor’s position, as stated in the May Revise, is that:

“Barring any significant changes, the budget over the next two years is in balance...However, in the coming years, the [S]tate’s commitments will exceed expected revenues. By 2019-20, the annual shortfall between spending and revenues is forecast to be over \$4 billion. This shortfall does not take into account the likelihood of an economic slowdown or recession. The emerging shortfall is in large part — but not entirely — due to the expiration of the temporary taxes imposed under Proposition 30. This November, the state’s voters will be given the choice whether to extend the Proposition 30 income tax rates for another 12 years. Even if the voters pass this extension of taxes, the longer-term budget outlook would be barely balanced. The cost of any additional new programs or obligations beyond the May Revision would need to be paid for through cuts in other programs or further tax increases beyond the Proposition 30

rates. If instead the voters do not pass the extension of taxes, the [S]tate will need to cut spending. Until the voters decide this important question, no significant new ongoing spending commitments should be made.”

(2016-17 May Revision, Introduction, Page 1). These factors have led Governor Brown to put forth a revised budget for the General Fund that is 3.27 percent higher than the Fiscal Year 2015-2016 approved budget.

Although the May Revise does not include any new major spending initiatives, it does contain several items of interest to IRWD. Of interest to the District are the budget’s proposed Cap-and-Trade Revenue expenditure plan and emergency drought response plan. More detail on each of these proposals is provided below.

Climate Change Policies and Cap-and-Trade Revenues:

In April 2015, the Governor issued Executive Order B-30-15 setting the greenhouse gas emissions reduction target at 40 percent below 1990 levels by 2030. Additionally, SB 350 (2015) was enacted doubling the rate of energy efficiency within California buildings, setting the Renewable Portfolio Standard at 50 percent and moving California towards greater transportation electrification. In order to further California’s climate change goals, the May Revise retains the \$3.1 billion Cap-and-Trade expenditure plan included in the Proposed Budget. The plan proposes to appropriate the Fiscal Year 2015-2016 and Fiscal Year 2016-2017 Cap-and-Trade auction proceeds as follows:

*Cap-and-Trade Expenditure Plan
(Fiscal Year 2016-2017 Proposed Budget)*

Investment Category	Department	Program	Amount (millions)
Continuous Appropriations	High-Speed Rail Authority	High-Speed Rail	\$500
	State Transit Assistance	Low Carbon Transit Operations	\$100
	Transportation Agency	Transit and Intercity Rail Capital Program	\$200
	Strategic Growth Council	Affordable Housing and Sustainable Communities Program	\$400
50 Percent Reduction in Petroleum Use	Transportation Agency	Transit and Intercity Rail Capital Program	\$400
	Caltrans	Low Carbon Road Program	\$100
	Air Resources Board	Low Carbon Transportation & Fuels	\$500
	Energy Commission	Biofuel Facility Investment	\$ 25
Local Climate Action	Strategic Growth Council	Transformational Climate Communities	\$100
Short-Lived	Air Resources Board	Black Carbon Woodsmoke	\$ 40

Climate Pollutants	Cal Recycle	Water Diversion	\$ 20
	Department of Food and Agriculture	Climate Smart Agriculture- Healthier Soils and Dairy Digesters	\$ 55
Safeguarding California/Water Action Plan	Department of Food and Agriculture & Water Resources	Water and Energy Efficiency	\$ 30
	Energy Commission	Drought Executive Order- Water and Energy Technology Program & Appliance Rebates	\$ 60
	Department of Fish and Wildlife	Wetlands and Watershed Restoration/CalEcoRestore	\$ 60
Safeguarding California/Carbon Sequestration	CalFire	Healthy Forests	\$150
		Urban Forestry	\$ 30
	Natural Resources Agency	Urban Greening	\$ 20
Energy Efficiency and Clean Energy	Department of General Services	Energy Efficiency for Public Buildings	\$ 30
	I Bank	California Lending for Energy and Environmental Needs Center	\$ 20
	Conservation Corps	Energy Corps	\$ 15
	Department of Community Services and Development	Energy Efficiency Upgrades/Weatherization	\$ 75
	University of California/California State University	Renewable Energy and Energy Efficiency Projects	\$ 60
TOTAL			\$ 3,090

SB 535 (2011) requires that at least 10 percent of the Cap-and-Trade proceeds be invested directly in disadvantaged communities and that at least 25 percent of the proceeds benefit those communities. The communities that qualify as disadvantaged have been identified by the California Environmental Protection Agency using CalEnviroScreen.

The Assembly and Senate budget committees have been discussing the Governor's proposal, but the California Air Resources Board released the most recent Cap-and-Trade auction results on May 25. The most recent auction substantially underperformed the Governor's projections. The State had anticipated nearly \$500 million in revenue from this auction, but it will only receive approximately \$10 million. While the Governor's plan includes approximately \$2 billion in past auction proceeds, this shortfall will impact the amount of funding that will be carried over in the Fiscal Year 2016-2017 Cap-and-Trade allocations.

Emergency Drought Response:

The Governor's May Revise includes an increase in emergency drought response funding of \$11.4 million. The majority of funding comes from Proposition 1, with some support coming from Cap-and-Trade revenues and the General Fund. The May Revise also reallocates a portion

of the previous \$323.1 million included in the Governor's Proposed Budget. The significant adjustments are:

- An increase of \$11 million for CalFire for tree removal to assist in the removal and disposal of dead trees in high hazard areas. This includes \$6 million for grants to local entities and \$5 million to support additional miscellaneous equipment and personnel overtime. The Governor has also put forth a budget trailer bill to accelerate the utilization of biomass materials for energy production in high hazard fire zones. That trailer bill would allow small biomass facilities to defer certain system interconnection costs;
- An increase of \$4.2 million for activities related to the Delta Smelt. This includes:
 - An increase of \$2 million for an adaptive management pilot project to promote food production where Delta Smelt are known to occur and a restoration design plan to restore intertidal habitat near the confluence of the Sacramento and San Joaquin rivers;
 - An increase of \$1.8 million to complete Delta-wide mapping of aquatic weeds to increase weed control in critical Delta Smelt areas and to assess the effectiveness of such control action in improving habitat quality; and
 - An increase of \$400,000 for the development of non-lethal monitoring of Delta Smelt distribution, and a pilot project using new technologies for turbidity monitoring to further refine data on Smelt location and movement during periods of conflict with water pumps;
- An increase of \$4.5 million for the Department of Water Resources to review and update local water shortage contingency plans and to develop recommendations for new water use efficiency targets; and
- A \$42 million decrease to reflect that removal of salinity barriers in the Delta, which will not be needed in the fall of 2016, and an extension of \$31 million in existing bond funds to install barriers in the spring of 2017, if necessary.

The \$11.4 million in additional funding brings the total funding included in the Governor's May Revise to \$334.5 million for drought response. The proposed appropriations are summarized below:

Proposed Fiscal Year 2016-2017 Emergency Drought Funding

Investment Category	Department	Program	Proposed Budget Amount (millions)	May Revise Amount (millions)
Protecting Water Supplies	Department of Water Resources	Emergency Salinity Barriers in the Delta	\$42.0	\$0.0
		Local Assistance for Small Communities	\$ 5.0	\$ 10.0
	State Water Resources Control Board	Water Curtailment	\$ 5.4	\$ 5.4
		Emergency Drinking Water Projects	\$16.0	\$16.0
Water Conservation	Department of Water Resources	Urban Water Conservation & Save Our Water Campaign	\$32.8	\$12.0
	Energy Commission	Rebates for Appliances	\$30.0	\$30.0
		Water and Energy Technology Program	\$30.0	\$30.0
	Department of Food and Agriculture	Agricultural Water Conservation	\$20.0	\$20.0
Emergency Response	Department of Forestry and Fire Protection	Enhanced Fire Protection	\$77.4	\$87.8
		Tree Mortality	\$0.0	\$11.0
	Department of Water Resources	Drought Management and Response	\$12.0	\$12.0
	Department of Fish and Wildlife	Protection of Fish and Wildlife	\$17.7	\$13.5
		Delta Smelt Management Strategy	\$0.0	\$4.2
	Department of Social Services	Drought Food Assistance	\$18.4	\$18.4
	Office of Emergency Services	California Disaster Assistance Act	\$22.7	\$52.7
		State Operations Center	\$ 4.0	\$ 4.0
	Department of Community Services	Farmworker Assistance	\$ 7.5	\$ 7.5
TOTAL			\$323.1	\$334.5

Staff continues to monitor the budget negotiations and the proposed budget trailer bills, and continues to engage on the policy issues of interest to the District.

2016 State Legislation:

AB 2304 (Levine, D-Santa Rosa) — State Water Market Exchange:

Assembly Water, Parks and Wildlife Chairman Marc Levin (D, Santa Rosa) introduced AB 2304 on behalf of the Environmental Defense Foundation. As introduced, AB 2304 would establish the California Water Market Exchange in the Natural Resources Agency. The statewide exchange would be responsible for creating a centralized water market platform through which information regarding all transfer and exchanges of water occurring after December 31, 2017, would be recorded, and charged a fee. The bill also expressed legislative intent regarding water transfers and exchanges.

AB 2304 was significantly amended on May 11, 2016. As amended, the bill would establish the California Water Market Clearinghouse for the purpose of making the water transfer and exchange process more transparent and more efficient, and to enhance access to voluntary water market transactions. All conveyances or transfers across the Sacramento-San Joaquin Delta or from one watershed to another occurring after January 1, 2020, would be required to be submitted to and processed by the Clearinghouse, after paying an administrative fee. Additionally, the bill would require the Secretary of the Natural Resources Agency to convene a Water Market Clearinghouse Task Force to make recommendations on:

- Information on water transfers;
- Information required for water users and the public to track the progress of proposed transfers; and
- The type of information that the Clearinghouse should require.

In late May, after opposition to the bill raised a number of concerns to Chairman Levine, the Chairman decided to put AB 2304 aside for the year. AB 2304 remains in the Assembly Appropriations Committee and is now dead.

While AB 2304 will not move forward, Chairman Levine has indicated that he will move water transfer legislation forward in AB 2909. Attached in Exhibit “C” is a copy of the draft language expected to be inserted into AB 2909.

Staff continues to participate on the Association of California Water Agencies (ACWA) State Legislative Committee’s Work Group on Water Transfers, which has been discussing AB 2304. With Chairman Levine’s decision not to move forward with AB 2304 this year, the work group has begun discussing AB 2909 and the possibility of ACWA sponsoring a bill on water transfers next year. Staff will provide the Board with an update on any significant developments in these discussions.

SB 163 (Hertzberg, D-Van Nuys) — Wastewater Treatment: Recycled Water:

SB 163 authored by Senator Bob Hertzberg (D, Van Nuys) proposes a 100 percent ban on ocean discharge of treated wastewater. Specifically, the bill would declare that the discharge of treated wastewater from ocean outfalls, except in compliance with the bill's provisions, is a waste and unreasonable use of water in light of the cost-effective opportunities to recycle water for further beneficial use. It would require a 50 percent reduction in ocean discharges by January 1, 2026, and a 100 percent reduction by January 1, 2036.

The bill has been referred to the Assembly Environmental Safety and Toxic Materials Committee and the Assembly Water, Parks and Wildlife Committee. The bill has also yet to be amended, but amendments are forth coming. A copy of draft amendments proposed by Senator Hertzberg are attached as Exhibit "D".

Staff continues to work with the coalition led by the California Association of Sanitation Agencies and WateReuse California to oppose the bill. The coalition has been meeting with members of the Assembly to discuss SB 163. Staff will provide an update on any significant developments from these ongoing discussions or with the bill.

Proposition 218 Reform Efforts and Other Legislative Efforts Related to Water Rates:

Since *Capistrano Taxpayers Association, Inc. v. City of San Juan Capistrano* and the Board's discussion regarding the need for legislative clarification on tiered water rates, staff has actively worked with the District's industry and association partners on concepts that have been put forth seeking to clarify tiered water rates. As part of that effort, staff has participated on the ACWA Proposition 218 Work Group. At the end of April, ACWA shared a legislative concept related to tiered water rates put forward by the Water Foundation with the Proposition 218 Work Group. Since that time, the Water Foundation reached out to the District and the Eastern Municipal Water District (EMWD) to discuss their proposal.

The Water Foundation's proposal, which has been recently modified, seeks to:

- Define the proportional cost of service attributable to a parcel so that it includes low income rate subsidization;
- Define sewer service consistent with the Public Utilities Code; and
- Authorize agencies to charge, in addition to any property-related fee or charge imposed pursuant to Article XIII D of the California Constitution for water service, a separate and distinct conservation and efficiency fee to create price signals to encourage conservation and encourage increased efficiency in the use of water.

The Water Foundation has been working with Senator Hertzberg to have the proposal inserted in SB 1298 as a gut and amend. As part of its outreach effort, the Water Foundation approached IRWD and EMWD seeking comments and suggestions on the most recent draft, and inquiring as to whether the districts could support/co-sponsor the proposal. Staff and legal counsel have

reviewed the proposal. As currently drafted it appears to contain several provisions related to low income rates and stormwater funding that may not comply with the California Constitution. Additionally, the proposal contains portions of the joint proposal IRWD and EMWD put forward for discussion last year related to tiered water rates. Staff recommends that the Board adopt a “support if amended” position on the proposal, which is to be placed into SB 1298, and authorize staff to seek amendments to the proposal so that it complies with the California Constitution and reflects the proposal the District put forward with EMWD last year.

A copy of the Water Foundation’s updated proposal is attached as Exhibit “E”.

2016 Federal Legislation:

Water Resources Development Act of 2016:

The 2016 Water Resources Development Act (WRDA) is making its way through Congress. In April, the Senate Committee on Environment and Public Works marked up and reported its version of the 2016 Water Resources and Development Act, S. 2848. Last month, the House Committee on Transportation and Infrastructure marked up and reported its version of 2016 Water Resources and Development Act (WRDA), H.R. 5303.

In the House version of the bill, IRWD has been working with Representative Mimi Walters (R-Irvine) to clarify the definition of a “water resources and development project” to include environmental infrastructure projects. The bill, as introduced, expands the definition of a “water resources and development project” to include environmental infrastructure projects for some sections of WRDA, but it does not include the language IRWD had sought clarifying that environmental infrastructure projects are eligible under section of WRDA that would be utilized by the District. As a result, Representative Walters presented an amendment seeking to clarify the eligibility of environmental infrastructures projects to the House Committee on Transportation and Infrastructure during the mark up. Given the Committee Chairman’s and staff’s opposition to the amendment, Representative Walters withdrew the amendment after her presentation stating that she would like to work with the Chairman on the amendment prior to the bill moving to the floor.

IRWD’s staff and federal advocates continue to seek the amendment needed, and has been working with members of the House Committee on Transportation and Infrastructure to have the amendment included in the bill before it is presented to the floor.

FISCAL IMPACTS:

Not applicable.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

COMMITTEE STATUS:

This item was reviewed by the Water Resources Policy and Communications Committee on June 6, 2016.

RECOMMENDATION:

THAT THE BOARD ADOPT A "SUPPORT IF AMENDED" POSITION ON THE WATER FOUNDATION'S TIERED WATER RATES PROPOSAL AND AUTHORIZE STAFF TO SEEK AMENDMENTS TO THE PROPOSAL SO THAT IT COMPLIES WITH THE CALIFORNIA CONSTITUTION AND REFLECTS THE TIERED RATE PROPOSAL THAT IRWD PUT FORWARD LAST YEAR FOR DISCUSSION.

LIST OF EXHIBITS:

- Exhibit "A" – IRWD Legislative Matrix
- Exhibit "B" – 2016 Legislative Update Report: Links to Bill Texts
- Exhibit "C" – AB 2909 (Levine) Draft Amendments
- Exhibit "D" – SB 163 (Hertzberg) Draft Amendments
- Exhibit "E" – Water Foundation's Proposal Related to Water and Sewer Rates

EXHIBIT "A"
IRWD 2016 LEGISLATIVE MATRIX
Updated 06/01/2016

Bill No. Author	Title	IRWD Position	Summary/Effects	Status
<u>AB 12</u> Cooley (D)	State Government: Administrative Regulations: Review		Requires each state agency after a noticed public hearing, to review the agency's regulations, identify any regulations that are duplicative, overlapping, inconsistent, or out of date, to revise those identified regulations, and report to the Legislature and Governor.	08/27/2015 - In SENATE Committee on APPROPRIATIONS: Held in committee.
<u>AB 45</u> Mullin (D)	Household Hazardous Waste		Requires the Department of Resources Recycling to adopt model ordinance for a comprehensive program for the collection of household hazardous waste. Authorizes a local jurisdiction proposing to enact an ordinance for the collection and diversion of such waste to adopt a Department model. Requires a determination as to whether a nonprofit organization has been created and funded to make grants to local entities for purposes related to the disposal of such waste.	02/04/2016 - To SENATE Committee on ENVIRONMENTAL QUALITY.
<u>AB 259</u> Dababneh (D)	Personal Information Privacy		Requires an agency, if the agency was the source of the breach and the breach compromised a person's social security number, driver's license number, or California identification card number, to offer to provide the person with identity theft prevention and mitigation services at no cost for not less than 12 months.	08/27/2015 - In SENATE Committee on APPROPRIATIONS: Held in committee.
<u>AB 291</u> Medina (D)	Environmental Quality Act: Local Agencies: Water		Authorizes a local agency, for certain water projects, to file a specified notice with the county clerk of the county in which the local agency's principal office is located, along with any required payment to the Department of Fish and Wildlife, and with the Office of Planning and Research and to transmit a copy of the notice to the county clerk of the counties in which the project is located. Requires the notice and the copies of the notice to be available to for public inspection. Relates to challenges.	06/10/2015 - From SENATE Committee on ENVIRONMENTAL QUALITY with author's amendments.;06/10/2015 - In SENATE. Read second time and amended. Re-referred to Committee on ENVIRONMENTAL QUALITY.
<u>AB 453</u> Salas (D)	Groundwater: Semitropic Water Storage District		Authorizes, until a groundwater sustainability plan is adopted, a local agency that has adopted a groundwater management plan to impose fees on the extraction of groundwater from a groundwater basin to fund costs of groundwater management and to collect	04/04/2016 - Re-referred to SENATE Committee on NATURAL RESOURCES AND WATER.

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Bill No. Author	Title	IRWD Position	Summary/Effects	Status
			groundwater extraction information, as long as a groundwater management plan adopted before a specified date, is in effect. Authorizes the Semitropic Water Storage District to impose fees and collect groundwater extraction information.	
<u>AB 501</u> Levine (D)	Resources: Delta Research		Relates to the Sacramento-San Joaquin Delta Reform Act of 2009. Requires a person conducting State-funded Delta Research to take specified actions with regard to the sharing of the primary data, metadata, and other supporting materials created or gathered in the course of that research. Relates to ineligibility. Relates to researcher State funding eligibility requirements. Provides conditions for Delta research grants. Relates to the provision of consistent procedural and technical requirements.	02/04/2016 - To SENATE Committee on NATURAL RESOURCES AND WATER.
<u>AB 577</u> Bonilla (D)	Biomethane: Grant Program		Requires the development and implementation of a grant program to award grants for projects that produce biomethane, that build or develop collection and purification technology or infrastructure, or that upgrade or expand existing biomethane facilities. Authorizes moneys in the Greenhouse Gas Reduction Fund to be used to fund grants awarded under the program.	09/11/2015 - Re-referred to SENATE Committee on RULES.
<u>AB 590</u> Dahle (R)	Greenhouse Gas Reduction Fund		Provides that moneys in the Greenhouse Gas Reduction Fund account may be made available for expenditure by the State Energy Resources Conservation and Development Commission for maintaining the current level of biomass power generation or geothermal energy generation in the State and revitalizing currently idle facilities in strategically located regions. Establishes requirements for an applicant to receive available funding for a facility's eligible electrical generation.	08/27/2015 - In SENATE Committee on APPROPRIATIONS: Held in committee.
<u>AB 615</u> Rendon (D)	Office of Sustainable Water Solutions: Assistance		Amends existing law that establishes the Office of Sustainable Water Solutions to promote permanent and sustainable drinking water and wastewater treatment solutions to ensure the effective and efficient provision of safe, clean, affordable, and reliable	06/18/2015 - To SENATE Committee on ENVIRONMENTAL QUALITY.

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Bill No. Author	Title	IRWD Position	Summary/Effects	Status
			drinking water and wastewater treatment services and authorizes the office to provide technical assistance to disadvantaged communities and small drinking water systems and wastewater systems. Specifies the technical assistance that may be provided.	
<u>AB 647</u> Eggman (D)	Beneficial Use: Storing of Water Underground		Declares that the diversion of water to underground storage constitutes a beneficial use of water if the water so stored is thereafter applied to the beneficial purposes for which the appropriation for storage was made, or if the water is so stored consistent with a sustainable groundwater management plan, statutory authority to conduct groundwater recharge, or a judicial degree and is for specified purposes. Requires applying for a permit or petition for a change. Requires including specified conditions.	06/30/2015 - From SENATE Committee on NATURAL RESOURCES AND WATER with author's amendments.;06/30/2015 - In SENATE. Read second time and amended. Re-referred to Committee on NATURAL RESOURCES AND WATER.
<u>AB 723</u> Rendon (D)	Rental Property: Plumbing Fixtures: Replacement		Requires the lease or rental agreement of a single-family residential real property or any portion of a multifamily residential real property or commercial real property that is entered into, renewed, or amended, be accompanied by a disclosure stating the property owner's responsibility to replace all noncompliant plumbing fixtures with water-conserving plumbing fixtures.	07/16/2015 - In SENATE. Read second time and amended. Re-referred to Committee on APPROPRIATIONS.
<u>AB 935</u> Salas (D)	Water Projects		Requires, upon appropriation by the Legislature, the Department of Water Resources to provide funding for certain projects, provided that certain conditions are met.	09/10/2015 - In SENATE. From third reading. To Inactive File.
<u>AB 937</u> Salas (D)	Groundwater Plan/Assistance: Disadvantaged Communities		Requires the Department of Water Resources to provide technical assistance to disadvantaged communities so that they may participate in groundwater planning, including planning for regional groundwater banking, with any county or other local agency.	08/27/2015 - In SENATE Committee on APPROPRIATIONS: Held in committee.
<u>AB 938</u> Rodriguez (D)	Sustainable Groundwater Management Act: Basins		Amends the Sustainable Groundwater Management Act. Authorizes a watermaster or local agency administering an adjudicated basin to elect that the basin be subject to the provisions	03/09/2016 - From SENATE Committee on NATURAL RESOURCES AND WATER with

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Updated 06/01/2016

Bill No. Author	Title	IRWD Position	Summary/Effects	Status
			of the Act. Authorizes a court with jurisdiction over the basin to issue and order to set a hearing to determine if the basin shall be subject to the Act. Requires written notice to the Department of Water Resources that the basin is subject to the Act. Requires the notice to be posted on the Department's Web site.	author's amendments.;03/09/2016 - In SENATE. Read second time and amended. Re-referred to Committee on NATURAL RESOURCES AND WATER.
<u>AB 954</u> Mathis (R)	Water and Wastewater Loan and Grant Pilot Program		Creates the Water and Wastewater Loan and Grant Program. Require the State Water Resources Control Board to establish a pilot program to provide low-interest loans and grants to local agencies for grants to eligible individual homeowners for purposes relating to drinking water and wastewater treatment. Creates a related fund for use under the program. Transfers a specified amount of funds from the General Fund to the fund.	08/27/2015 - In SENATE Committee on APPROPRIATIONS: Held in committee.
<u>AB 1144</u> Rendon (D)	Renewables Portfolio Standard Program: Credits		Provides that renewable energy credits may be used to meet certain portfolio content requirements if the credits are earned by electricity that is generated by an entity that would be excluded from the definition of an electrical corporation by operation of the exclusions for entities employing landfill or digester gas technology that meets certain requirements, including that the electricity is used at a wastewater treatment facility. Prohibits certain marketing claims.	08/17/2015 - From SENATE Committee on APPROPRIATIONS with author's amendments.;08/17/2015 - In SENATE. Read second time and amended. Re-referred to Committee on APPROPRIATIONS.
<u>AB 1173</u> Williams (D)	Water Equipment: Backflow Prevention Devices Testing		Requires, if a local health officer does not maintain a program for certificate of backflow prevention device testers, the testing and maintenance of such device be performed by a person who has received a California-specific certification for such devices from one of the specified entities or a similar certification provider deemed acceptable by the State Water Resources Control Board.	07/14/2015 - In SENATE Committee on ENVIRONMENTAL QUALITY: Not heard.
<u>AB 1201</u> Salas (D)	Delta: Predation by Nonnative Species	Support	Requires the State Department of Fish and Wildlife to develop a science-based plan that addresses predation by nonnative species upon species of fish listed pursuant to the State Endangered Species Act that reside all or a portion of their lives in the Sacramento-San	08/27/2015 - In SENATE Committee on APPROPRIATIONS: Held in committee.

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Bill No. Author	Title	IRWD Position	Summary/Effects	Status
			Joaquin Delta and that considers predation reduction for all Chinook salmon and other native species not listed pursuant to the Act. Provides for input from the scientific community, water users and fishing communities.	
<u>AB 1242</u> Gray (D)	Water Quality and Storage		Provides provisions of law requiring a specified increase in statewide water storage capacity, and updating water strategies and implementation plans. Requires the Water Resources Control Board, in formulating policy for water quality control and adopting or approving a water quality control plan for the Sacramento-San Joaquin Delta, to take into consideration any applicable groundwater sustainability plan or alternative and available information on impacts of groundwater use and beneficial uses of water.	09/02/2015 - In SENATE. Read second time. To third reading.;09/02/2015 - Re-referred to SENATE Committee on RULES.
<u>AB 1463</u> Gatto (D)	Onsite Treated Water		Requires the State Water Resources Control Board, in consultation with the Department of Public Health, the Building Standards Commission, and stakeholders, to establish water quality standards and distribution, monitoring, and reporting requirements for onsite water recycling systems prior to authorizing the use of onsite treated water in internal plumbing of residential and commercial buildings. Requires onsite treated water to be considered the same as recycled water that is produced on site.	09/04/2015 - From SENATE Committee on ENVIRONMENTAL QUALITY with author's amendments.;09/04/2015 - In SENATE. Read second time and amended. Re-referred to Committee on ENVIRONMENTAL QUALITY.
<u>AB 1550</u> Gomez (D)	Greenhouse Gases: Investment Plan: Communities		Relates to greenhouse gases and investments in communities. Requires the Greenhouse Investment Fund plan to allocate a minimum percentage of the available moneys in the Greenhouse Gas Reduction Fund to projects located within disadvantaged communities and a separate and an additional unspecified percentage to projects that benefit low-income households, with a fair share of the moneys targeting households with incomes below a percentage of the federal poverty level.	05/31/2016 - In ASSEMBLY. Read second time and amended. To second reading.

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Bill No. Author	Title	IRWD Position	Summary/Effects	Status
<u>AB 1586</u> Mathis (R)	Environmental Quality Act: Temperance Flat Reservoir		Prohibits the court, in an action or proceeding alleging a violation of the California Environmental Quality Act, from staying or enjoining the construction or operation of the Temperance Flat Reservoir unless the court makes certain findings.	04/04/2016 - In ASSEMBLY Committee on NATURAL RESOURCES: Failed passage.;04/04/2016 - In ASSEMBLY Committee on NATURAL RESOURCES: Reconsideration granted.
<u>AB 1587</u> Mathis (R)	Groundwater		Requires, in implementing competitive grants under the Water Quality, Supply, and Infrastructure Improvement Act of 2014, for projects that develop and implement groundwater planning requirements, special consideration be given to those projects that would create groundwater recharge basins in areas of fallow farmland. Appropriates a specified amount of funding from the proceeds of the Act for the purposes of the grant program.	05/27/2016 - In ASSEMBLY Committee on APPROPRIATIONS: Held in committee.
<u>AB 1588</u> Mathis (R)	Water and Wastewater Loan and Grant Program		Requires the State Water Resources Control Board to establish a program to provide funding to counties to award low-interest loans and grants to eligible applicants for specified purposes relating to drinking water and wastewater treatment. Authorizes a county to apply for such funds. Creates the Water and Wastewater Loan and Grant Fund and provides the moneys in this fund are available to the Board to administer and implement the program. Transfers funds from the General Fund to the loan and grant fund.	05/31/2016 - In ASSEMBLY. Read second time and amended. To second reading.
<u>AB 1589</u> Mathis (R)	Environmental Quality Act: Exemption:Drought Mitigation		Exempts from the requirements of the California Environmental Quality Act, for the duration of a state of emergency proclaimed by the Governor due to drought conditions, certain projects that are undertaken, carried out, or approved by a public agency to mitigate those drought conditions.	04/04/2016 - In ASSEMBLY Committee on NATURAL RESOURCES: Failed passage.;04/04/2016 - In ASSEMBLY Committee on NATURAL RESOURCES: Reconsideration granted.
<u>AB 1590</u> Mathis (R)	State Water Resources Control Board: Appointments		Requires that additional members be appointed to the State Water Resources Control Board by the Legislature. Requires that vacancies be immediately filled by the appointing power.	03/10/2016 - In ASSEMBLY. Read second time and amended. Re-referred

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Bill No. Author	Title	IRWD Position	Summary/Effects	Status
				to Committee on WATER, PARKS AND WILDLIFE.
<u>AB 1647</u> Waldron (R)	Environmental Quality: Water Storage Facilities		Exempts from the Environmental Quality Act a project to expand the storage capacity of an existing surface water storage facility, or to replace an existing surface water storage facility, that is owned and operated by a public entity if that public entity adopts, by resolution, findings and declarations that the project meets specified criteria.	04/04/2016 - In ASSEMBLY Committee on NATURAL RESOURCES: Not heard.
<u>AB 1649</u> Salas (D)	State Water Policy: Storage: Joint Powers Authorities		Requires the Department of Water Resources to develop a State water policy giving priority to the formation of joint powers authorities to address critical surface water storage needs and to funding of surface water projects. Provides that specified projects will meet statewide goals and provide specified public benefits to the greatest extent.	05/31/2016 - In ASSEMBLY. Read second time. To third reading.
<u>AB 1694</u> Lackey (R)	Grant Program for School Drinking Water		Requires the State Water Resources Control Board to establish a grant program for grants to public elementary and secondary schools to improve access to, and the quality of drinking water. Specifies various types of projects for which the grants could be awarded. Provides the priority for such grants. Requires the establishment of grant application procedures. Appropriates funds therefor. Provides such funds would supplement not supplant other state funds apportioned to these local agencies.	03/31/2016 - Re-referred to ASSEMBLY Committees on ENVIRONMENTAL SAFETY AND TOXIC MATERIALS and EDUCATION.
<u>AB 1704</u> Dodd (D)	Water Rights		Requires the registrant to provide a copy of the registrant's registration form to the Department of Fish and Wildlife and agree to general conditions. Requires the State Water Resources Control Board to consult with the Department of Fish and Wildlife in establishing these general conditions and make compliance with certain Fish and Game Code requirements applicable to the diversion of water one of those conditions. Requires general conditions for small irrigation use. Imposes certain fees.	05/31/2016 - In ASSEMBLY. Read second time and amended. To second reading.

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Bill No. Author	Title	IRWD Position	Summary/Effects	Status
<u>AB 1713</u> Eggman (D)	Sacramento-San Joaquin Delta: Peripheral Canal	Oppose	Prohibits the construction of a peripheral canal in the Sacramento-San Joaquin Delta unless expressly authorized by an initiative voted on by the voters of California, and requires the Legislative Analyst's Office to complete a prescribed economic feasibility analysis prior to a vote authorizing the construction of a peripheral canal.	05/27/2016 - In ASSEMBLY Committee on APPROPRIATIONS: Held in committee.
<u>AB 1738</u> McCarty (D)	Building Standards: Dark Graywater		Defines dark graywater as a specified wastewater that comes from kitchen sinks and dishwashers. Requires the Department of Housing and Community Development, at the next triennial building standards rulemaking cycle, to develop and submit for approval building standards for the construction, installation, and alteration of dark graywater systems for indoor and outdoor uses.	05/31/2016 - In ASSEMBLY. Read second time. To third reading.
<u>AB 1749</u> Mathis (R)	Environmental Quality Act: Exemption: Recycled Water		Amends the California Environmental Quality Act which exempts projects that provide for the expansion of recycled water pipeline and directly related infrastructure within existing rights of way, and directly related groundwater replenishment, if the project does not affect wetlands or sensitive habitat where construction impacts are mitigated and undertaken to mitigate drought conditions for which an emergency was proclaimed. Exempts construction of recycled water treatment facilities and pipelines.	05/27/2016 - In ASSEMBLY. Read third time, urgency clause adopted. Passed ASSEMBLY. *****To SENATE.
<u>AB 1755</u> Dodd (D)	Open and Transparent Water Data Act		Enacts the Open and Transparent Water Data Act. Requires the Department of Water Resources to create, operate, and maintain a statewide integrated water data platform that integrates existing water and ecological data information from multiple databases and provide data on completed water transfers and exchanges. Creates a related fund to provide money to specified entities for the improvement of water data and for certain other purposes of the Act.	05/31/2016 - In ASSEMBLY. Read third time. Passed ASSEMBLY. *****To SENATE.

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Bill No. Author	Title	IRWD Position	Summary/Effects	Status
<u>AB 1773</u> Oberholte (R)	Local Government Renewable Energy Program		Amends existing law that authorizes a local governmental entity to receive a bill credit to a designated benefiting account, for electricity exported to the electrical grid by an eligible renewable generating facility. Includes as a local governmental entity for this purpose a joint powers authority.	05/19/2016 - To SENATE Committee on ENERGY, UTILITIES AND COMMUNICATIONS.
<u>AB 1815</u> Alejo (D)	Global Warming Solutions Act of 2006		Requires the Environmental Protection Agency to establish a comprehensive technical assistance program, upon the appropriation of moneys from the Greenhouse Gas Reduction Fund, for eligible applicants assisting eligible communities. Requires the Agency to provide technical assistance to communities based on a specified priority. Requires the Department of Finance to include in a specified investment plan an allocation to the Agency for the technical assistance program.	05/27/2016 - In ASSEMBLY Committee on APPROPRIATIONS: Held in committee.
<u>AB 1842</u> Levine (D)	Water: Pollution: Fines		Imposes a civil penalty for each gallon or pound of polluting material discharged. Requires that the civil penalty be reduced for every gallon or pound of the illegally discharged material that is recovered and properly disposed of by the responsible party. Prohibits a person from being subject to multiple civil penalties for the same act or failure to act.	05/12/2016 - In ASSEMBLY. Read second time. To third reading.
<u>AB 1866</u> Wilk (R)	High-Speed Rail Bond Proceeds: Water Projects		Provides that no further bonds shall be sold for high-speed rail purposes pursuant to the Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century, except as specifically provided with respect to an existing appropriation for high-speed rail purposes for early improvement projects. Requires redirection of the unspent proceeds received from outstanding bonds issued for other high-speed rail purposes to fund capital expenditures for water projects.	04/11/2016 - In ASSEMBLY Committee on TRANSPORTATION: Failed passage.;04/11/2016 - In ASSEMBLY Committee on TRANSPORTATION: Reconsideration granted.
<u>AB 1871</u> Waldron (R)	Coastal Resources: Development: Water Supply Projects		Limits the growth-inducing impacts the Coastal Commission may consider in its review of a coastal development permit for a water supply project.	03/18/2016 - From ASSEMBLY Committee on NATURAL RESOURCES with author's

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Bill No. Author	Title	IRWD Position	Summary/Effects	Status
				amendments.;03/18/2016 - In ASSEMBLY. Read second time and amended. Re-referred to Committee on NATURAL RESOURCES.
<u>AB 1882</u> Williams (D)	Oil and Gas: Groundwater Monitoring		Requires the Division of Oil, Gas, and Geothermal Resources to provide an opportunity and the information necessary for the State Water Resources Control Board and the appropriate regional water quality control board to review, comment on, and propose additional requirements for Class II underground injection well projects.	05/27/2016 - In ASSEMBLY Committee on APPROPRIATIONS: Held in committee.
<u>AB 1925</u> Chang (R)	Desalination: Statewide Goal		Requires the State Department of Water Resources to establish a goal of a specific number of acre-feet of drinking water to be desalinated per year by a specified year and a greater number of acre-feet by a later year, as part of a comprehensive water plan that fully evaluates other, specified options.	05/04/2016 - In ASSEMBLY Committee on APPROPRIATIONS: Not heard.
<u>AB 1928</u> Campos (D)	Water Efficiency Landscape Irrigation Equipment		Postpones the date by which the Resources Conservation and Development Commission is to adopt the performance standards and labeling requirements for landscape irrigation equipment prohibit the sale of that equipment unless it meets the performance standards and labeling requirements.	05/31/2016 - In ASSEMBLY. Read second time. To third reading.
<u>AB 1986</u> Wilk (R)	Water Resources: Permit to Appropriate: Application		Requires, if the State Water Resources Control Board has not rendered a final determination on an application for a permit to appropriate water within a specified time period from the date the application to appropriate water was filed, the Board to issue a notice and provide an opportunity for protests before rendering a final determination.	05/27/2016 - In ASSEMBLY Committee on APPROPRIATIONS: Held in committee.
<u>AB 1989</u> Jones (R)	Water and Greenhouse Gas Emissions Reduction		Requires the State Water Resources Control Board to develop and implement a grant and low-interest loan program for water projects that result in the net reduction of water-related greenhouse gas emissions.	05/27/2016 - In ASSEMBLY Committee on APPROPRIATIONS: Held in committee.

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Bill No. Author	Title	IRWD Position	Summary/Effects	Status
<u>AB 2022</u> Gordon (D)	Advanced Purified Demonstration Water	Support	Authorizes the operator of an advanced purified demonstration water facility to cause the advanced purified demonstration water to be bottled and distributed as samples for educational purposes and to promote water recycling. Prohibits the advanced purified demonstration water in each bottle from exceeding a specified amount. Prohibits the water from being distributed unless it meets or is superior to all federal and state drinking water standards. Requires a recycling program for distributed bottles.	05/05/2016 - To SENATE Committee on ENVIRONMENTAL QUALITY.
<u>AB 2040</u> Melendez (R)	Outdoor Water Efficiency Act of 2016: Tax Credits		Allows, under the Personal Income Tax Law, a credit for a percentage of the amount paid or incurred by a qualified taxpayer for water-efficiency improvements on qualified real property in the State. Limits the cumulative amount for each qualifying property. Requires the amount of the credit to be multiplied. Requires the taxpayer to obtain and retain a certification of the improvements from the appropriate water agency and to provide a copy of same to the Franchise Tax Board upon request.	05/27/2016 - In ASSEMBLY Committee on APPROPRIATIONS: Held in committee.
<u>AB 2076</u> Garcia (D)	Water and Energy Use Efficiency: Breweries		Requires the Department of Water Resources to develop water and energy use efficiency certification guidelines for the production of beer that includes certification seals. Requires the Department of Alcoholic Beverage Control to consult in label design and approval for the use of a seal on a beer bottle. Provides the procedures for the application of certification of a brewery. Requires the submission of a certification fee.	04/11/2016 - Re-referred to ASSEMBLY Committees on WATER, PARKS AND WILDLIFE and GOVERNMENTAL ORGANIZATION.
<u>AB 2099</u> Stone (D)	Safe Drinking Water Benefit		Requires the State Department of Social Services to convene a workgroup to develop recommendations for delivering a water benefit to supplement that purchase of drinking water for low-income households with inadequate access to safe drinking water. Requires a plan for identification of eligible households and the delivery of the benefit to those households. Requires the	05/31/2016 - In ASSEMBLY. Read second time. To third reading.

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Bill No. Author	Title	IRWD Position	Summary/Effects	Status
			submission of a report with the recommendations to specified entities.	
<u>AB 2257</u> Maienschein (R)	Local Agency Meeting: Agenda: Online Posting		Amends the Ralph M. Brown Act, which enables the legislative body of a local agency to call both regular and special meetings. Requires an online posting of an agenda for a local agency legislative body, if the agency has an Internet Web site, be posted on the site homepage accessible specified link. Exempts specified local entities if the legislative body has a specified integrated agenda management platform. Requires the agenda to meet specified standards. Defines related terms.	05/23/2016 - In ASSEMBLY. Read third time. Passed ASSEMBLY. *****To SENATE.
<u>AB 2292</u> Gordon (D)	Global Warming Solutions Act: Disadvantaged Communities		Requires the State Environmental Protection Agency to update the State Communities Environmental Health Screening Tool that identifies disadvantaged communities regarding the monitoring and regulation of sources of emissions of greenhouse gases, when it comes to investment opportunities in the multiyear investment plan for moneys in the Greenhouse Gas Reduction Fund.	05/27/2016 - In ASSEMBLY Committee on APPROPRIATIONS: Held in committee.
<u>AB 2304</u> Levine (D)	State Water Market Clearinghouse	Seek Amendments	Establishes the State Water Market Clearinghouse within the Natural Resources Agency for making the water transfer and exchange process more transparent and more efficient and to enhance access to voluntary water market transactions. Requires a water market platform on the Clearinghouse's Internet Web site regarding water transfer or exchange. Requires convening a related task force, and requires the Clearinghouse to consider and act on the recommendations regarding transfers or exchanges.	05/25/2016 - In ASSEMBLY Committee on APPROPRIATIONS: Not heard.
<u>AB 2389</u> Ridley-Thomas S (D)	Special Districts: District- Based Elections		Amends existing law relating to special districts, district-based elections and reapportionment. Authorizes a governing body of a special district, to require, by resolution, the election of the members of its governing body be elected using district-based elections without being required to submit the resolution to the voters for approval. Requires the resolution to include a declaration	05/19/2016 - To SENATE Committees on ELECTIONS AND CONSTITUTIONAL AMENDMENTS and GOVERNANCE AND FINANCE.

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			that the change in the method of election is being made in furtherance of the purposes of the Voting Rights Act of 2001.	
<u>AB 2438</u> Waldron (R)	Environmental Quality Act		Relates to the Environmental Quality Act (CEQA). Exempts from CEQA a project for the construction and installation of a new pipeline or the maintenance, repair, restoration, reconditioning, relocation, replacement, removal, or demolition of an existing pipeline for the distribution of recycled water within a public street, highway, or right-of-way. Requires a public hearing.	05/23/2016 - In ASSEMBLY. Read third time. Passed ASSEMBLY. *****To SENATE.
<u>AB 2444</u> Garcia E (D)	Water, Climate, Coastal Protection and Outdoor Access		Enacts the California Parks, Water, Climate, and Coastal Protection and Outdoor Access for All Act of 2016 which would authorize the issuance of bonds in a specified amount pursuant to the State General Obligation Bond Law to finance a water, climate, and coastal protection and outdoor access for all program.	05/27/2016 - From ASSEMBLY Committee on APPROPRIATIONS: Do pass as amended.
<u>AB 2446</u> Gordon (D)	State Water Resources Control Board: Judicial Review		Updates provisions regarding the issuance of a order by the State Water Resources Control Board and an aggrieved party petitioning the superior court for a writ of mandate for review of a decision or order issued by the Board. Provides that a decision or order under the Safe Drinking Water Act by the Board is not subject to court review if no aggrieved party petitions for such writ within a specified time period after a service of a copy of the order or decision issued by the Board.	05/23/2016 - In ASSEMBLY. Read third time. Passed ASSEMBLY. *****To SENATE.
<u>AB 2456</u> Cooley (D)	Public Employee Retirement Benefits: Prefunding		Requires the Board of Administration of the Public Employee's Retirement System to develop, establish, and administer the State Employer's Pension Prefunding Trust Program in order to encourage State and local public employers that provide a defined benefit pension plan to their employees to effectively manage their pension contributions.	03/17/2016 - In ASSEMBLY. Read second time and amen
<u>AB 2468</u> Hadley (R)	Public Employees' Retirement System		Authorizes a public agency that has contracted with the Board of Administration of PERS to offer an alternative formula from that	04/12/2016 - In ASSEMBLY. Read second time and amended. Re-referred

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			required by the California Public Employees Pension Reform Act to be applicable to certain miscellaneous, nonsafety employees, if specified contingencies are satisfied. Requires that such employees who are not new members, that were employed by a public employer that did not contract with PERS until a specified date, be covered by a default benefit formula.	to Committee on PUBLIC EMPLOYEES, RETIREMENT AND SOCIAL SECURITY.
<u>AB 2480</u> Bloom (D)	Source Watersheds: Financing		Requires the State Water Resources Control Board to develop investment plans that prioritize actions for restoration and conservation to improve watershed function in the watershed that flow into the Shasta Reservoir and the Oroville Reservoir.	05/31/2016 - In ASSEMBLY. Read second time and amended. To second reading.
<u>AB 2488</u> Dababneh (D)	Protected Species: Stickleback: Possession	Support	Permits the Department of Fish and Wildlife to authorize, under the State Endangered Species Act, the take of unarmored threespine stickleback attributable to the periodic dewatering, inspection, maintenance, or repair of the Metropolitan Water District of Southern California's Foothill Feeder water supply facility from Castaic Dam to the Joseph Jensen Treatment Plant in the County of Los Angeles, if certain conditions are satisfied.	05/12/2016 - To SENATE Committee on NATURAL RESOURCES AND WATER.
<u>AB 2515</u> Weber (D)	Water Conservation in Landscaping Act		Requires the Department of Water Resources to either update the model water-efficient landscaping ordinance or make a finding that an update to such ordinance at that time is not a useful or effective means to improve the efficiency of landscape water use or the administrative of the ordinance. Requires the Department to submit an update to the Building Standards Commission during the triennial revision process of the State Green Building Standards Code.	05/31/2016 - In ASSEMBLY. Read second time. To third reading.
<u>AB 2550</u> Patterson (R)	Instream Flow Curtailments and Compensation		Requires the State Water Resources Control Board to financially compensate a person who is unable to divert the full amount of water authorized under his or her permit or license due to a board-issued instream flow curtailment, and a person who is required to file a statement of diversion and use is unable to divert the same	03/08/2016 - To ASSEMBLY Committee on WATER, PARKS AND WILDLIFE.

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			amount of water in the succeeding year due to a board-issued instream flow curtailment.	
<u>AB 2551</u> Gallagher (R)	Contract Procurement: Surface Storage Projects		Allows a local agency to use the construction management at-risk, design-build, or design-build operate method of delivery on a surface storage project. Requires such contracts to be awarded on the best value basis or to the lowest responsible bidder. Establishes a procurement process for these contracts. Provides reasons which would prohibit a contracting entity from being prequalified or short-listed.	05/23/2016 - In ASSEMBLY. Read third time. Passed ASSEMBLY. *****To SENATE.
<u>AB 2578</u> Bigelow (R)	Environmental Quality Act: Exemptions: Water Service		Exempts from the requirements of the California Environmental Quality Act, a project within a public street or highway or other public right-of-way for the maintenance, repair, restoration, reconditioning, relocation, replacement, removal or demolition of an existing water distribution pipeline to address water leakage. Exempts activities undertaken by a local agency in response to a drought to acquire water supplies, extend service, or provide water for drinking and sanitation.	03/18/2016 - From ASSEMBLY Committee on NATURAL RESOURCES with author's amendments.;03/18/2016 - In ASSEMBLY. Read second time and amended. Re-referred to Committee on NATURAL RESOURCES.
<u>AB 2583</u> Frazier (D)	Sacramento-San Joaquin Delta Reform Act of 2009	Oppose	Relates to the Sacramento-San Joaquin Delta Reform Act of 2009, the Delta Stewardship Council, the Delta Plan and the California Water Fix. Provides that the new Delta water conveyance infrastructure is interdependent parts of a system. Amends the point of diversion to a point on the Sacramento River. Prohibits construction of a new Delta conveyance facility until contracts are signed by contractors who will receive the water that commit them to pay costs and to mitigate facility property taxes.	05/27/2016 - From ASSEMBLY Committee on WATER, PARKS AND WILDLIFE without further action pursuant to JR 62(a).
<u>AB 2594</u> Gordon (D)	Stormwater Resources: Use of Captured Water		Authorizes a public entity that captures stormwater, in accordance with a stormwater resource plan and consistent with a municipal separate storm sewer system permit, before the water reaches a natural channel to use the captured stormwater.	05/23/2016 - In ASSEMBLY. Read third time. Passed ASSEMBLY. *****To SENATE.

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<u>AB 2601</u> Eggman (D)	Building Standard: Residential Property: Graywater		Requires the Department of Housing and Community Development to adopt and submit to Building Standards Commission for approval amendments to the building standards adopted pursuant to these provisions that require that all new single-family and duplex residential dwelling units include specified components to allow the separate discharge of graywater for direct irrigation.	03/10/2016 - To ASSEMBLY Committee on HOUSING AND COMMUNITY DEVELOPMENT.
<u>AB 2617</u> Mayes (R)	Water Efficiency Measures		Requires the Department of Water Resources to develop and solicit comments on a proposed report and, to issue a final report that contains recommendations to public entities to help them achieve water-resilient communities and prioritize cost-effective water efficiency measures with low adverse environmental impacts based on local conditions.	05/31/2016 - In ASSEMBLY. Read second time. To third reading.
<u>AB 2801</u> Gallagher (R)	Local Government: Fees and Charges: Protest		Requires a local agency to keep written protests securely stored and sealed until a public hearing. Prohibits an agency from requiring such protest to include property identification other than street address unless there is not a street address, and from requiring such protest to be submitted on an agency form. Requires the agency maintain such protests for a minimum time period following the date of the hearing to consider the protests.	05/26/2016 - To SENATE Committee on GOVERNANCE AND FINANCE.
<u>AB 2890</u> Env Safety & Toxic Material Cmt	Drinking Water and Wastewater Operator Certification		Requires the State Water Resources Control Board to appoint an advisory committee to examine and certify people to operate water treatment plants and water distribution systems, and to review all proposed regulations and make recommendations to the Board. Relates to water treatment operator-in-training. Revises procedures for the suspension or revocation of a valid operator license. Authorizes certificate reciprocity. Provides certificate application fraud civil liability. Relates to an advisory committee.	05/25/2016 - From SENATE Committee on ENVIRONMENTAL QUALITY with author's amendments.;05/25/2016 - In SENATE. Read second time and amended. Re-referred to Committee on ENVIRONMENTAL QUALITY.
<u>AB 2910</u>	Local Government: Organization: Omnibus Bill		Revises provisions of the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 to remove references to a public agency's current service area and instead include references	05/12/2016 - To SENATE Committee on GOVERNANCE AND FINANCE.

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Local Government Cmt			to the public agency's jurisdictional boundaries. Provides that a purpose of a local agency formation commission is to encourage government services efficiency. Relates to commission membership. Relates to agency reorganization. Relates to uncollected revenues and taxes upon disincorporation.	
<u>ACA 8</u> Bloom (D)	Local Government Financing: Water Facilities: Voters		Proposes an amendment to the Constitution to create an exception to a limit for a rate imposed by a city, county, city and county, or special district to service bonded indebtedness incurred to fund the construction, reconstruction, rehabilitation, or replacement of wastewater treatment facilities and related infrastructure, potable water producing facilities and related infrastructure, nonpotable water producing facilities and related infrastructure, and stormwater treatment facilities and infrastructure.	02/18/2016 - INTRODUCED.
<u>SB 7</u> Wolk (D)	Housing: Water Meters: Multi-unit Structures		Requires a landlord to make submeter disclosures to a tenant prior to executing a rental agreement. Relates to tenant billing procedures and requirements. Authorizes building standards that require the installation of water submeters in multiunit residential buildings. Provides structure exemptions. Relates to landlord requirements. Relates to the use of meters or submeters in new mixed-use residential and commercial structures as a condition for service. Requires licensed contractors do the installation.	09/08/2015 - In ASSEMBLY. Read third time. Failed to pass ASSEMBLY.;09/08/2015 - In ASSEMBLY. Motion to reconsider.
<u>SB 20</u> Pavley (D)	State Water Resiliency Investment Act		Creates the State Water Resiliency Investment Fund. Provides that moneys in the Fund are available for the purpose of providing a more dependable water supply in the State. Creates various accounts within the Fund for prescribed purposes.	08/26/2015 - From ASSEMBLY Committee on WATER, PARKS AND WILDLIFE with author's amendments.;08/26/2015 - In ASSEMBLY. Read second time and amended. Re-referred to Committee on WATER, PARKS AND WILDLIFE.
<u>SB 32</u> Pavley (D)	Global Warming Solutions Act of 2006		Requires the State Air Resources Board to approve a specified statewide greenhouse gas emission limits that are the equivalent to a specified percentage below the 1990 level to be achieved by 2030. Revises current provisions of existing law regarding the	09/10/2015 - In ASSEMBLY. Read second time and amended. Re-referred to Committee on NATURAL RESOURCES

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			implementation of the next update of a greenhouse gas scoping plan under existing law. Requires reports regarding reaching these limits.	
<u>SB 122</u> Jackson (D)	Environmental Quality Act: Record of Proceedings		Amends the Environmental Quality Act. Relates to a database for the collection, storage, retrieval, and dissemination of environmental documents, notices of exemption, notices of preparation, notices of determination, and notices of completion provided to the office that shall be available online to the public through the internet. Provides for the phase-in of electronic documents. Requires the lead agency to submit to the State Clearinghouse a sufficient number of environmental documents for review.	08/27/2015 - In ASSEMBLY Committee on APPROPRIATIONS: Not heard.
<u>SB 163</u> Hertzberg (D)	Wastewater Treatment: Recycled Water	Oppose	Declares the discharge of treated wastewater from ocean outfalls is a waste and unreasonable use of water in light of certain conditions. Requires such facility to achieve a specified percentage of reuse of the actual annual flow for beneficial purposes. Prohibits such discharge except as backup discharge. Provides procedures for related exemption requests. Requires a prescribed plan to meet these provisions.	09/08/2015 - Re-referred to ASSEMBLY Committee on RULES.
<u>SB 223</u> Galgiani (D)	Division of Boating and Waterways: Oversight Committee		Requires the Division of Boating and Waterways to establish an advisory and oversight committee to evaluate and monitor the activities of the Division relating to the management and control or eradication of invasive aquatic plants. Provides the expertise of members of the committee. Requires the committee to meet a specified amount of times per year and to communicate any findings or recommendations to the Division.	08/27/2015 - In ASSEMBLY Committee on APPROPRIATIONS: Held in committee.
<u>SB 248</u> Pavley (D)	Oil and Gas		Provides for an inspection program for all activities regulated pursuant to provisions concerning drilling, operation, maintenance, and abandonment of oil and gas wells and certain tanks and facilities. Requires inspections to be reported and posted, and the	08/27/2015 - In ASSEMBLY Committee on APPROPRIATIONS: Not heard.

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			recording of information in a well history, including fluid injection, chemical composition, and waste disposal injection. Provides for shutdown. Requires updating related regulations. Requires notification and clearance of chemical injection.	
<u>SB 286</u> Hertzberg (D)	Electricity: Direct Transactions		Requires the Public Utilities Commission to adopt and implement a schedule that implements a specified phase-in period for expanding direct transactions for individual retail nonresidential end-use customers over a maximum time period, raising the allowable limit of kilowatthours that can be supplied by other electrical corporation's distribution service territory to that corporation's share of the gigawatthours. Requires such customers to be responsible for their share of the costs of specified programs.	03/01/2016 - From ASSEMBLY Committee on APPROPRIATIONS with author's amendments.;03/01/2016 - In ASSEMBLY. Read second time and amended. Re-referred to Committee on APPROPRIATIONS.
<u>SB 471</u> Pavley (D)	Water, Energy, Reduction of Greenhouse Gas Emissions		Includes reduction of greenhouse emissions associated with water treatment among the investments that are eligible for funding from the Greenhouse Gas Reduction Fund. Requires the State Water Resources Control Board to establish a grant and loan program for water projects that result in the net reduction of water-related greenhouse gas emissions.	08/27/2015 - In ASSEMBLY. Joint Rule 62(a) suspended.;08/27/2015 - In ASSEMBLY Committee on APPROPRIATIONS: Held in committee.
<u>SB 551</u> Wolk (D)	State Water Policy: Water and Energy Efficiency	Seek Amendments	Declares the policy of the state that water use and water treatment shall operate in a manner that is as energy efficient as is feasible and energy use and generation shall operate in a manner that is as water efficient as is feasible. Requires all relevant state agencies to consider this state policy when revising, or establishing policies, regulations, and grant criteria when pertinent to these uses of water and energy.	08/27/2015 - In ASSEMBLY Committee on APPROPRIATIONS: Held in committee.
<u>SB 552</u> Wolk (D)	Public Water Systems: Disadvantaged Communities		Requires the State Water Resources Control Board to hold an initial public meeting prior to ordering the consolidation or extension of public water system service and to obtain well owner consent. Provides any affected resident and domestic well owner within the service area who does not consent is ineligible for any future water-	05/27/2016 - Re-referred to ASSEMBLY Committee on ENVIRONMENTAL SAFETY AND TOXIC MATERIALS and WATER, PARKS AND WILDLIFE.

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			related grants. Requires the Board to compensate certain water systems. Prohibits a charge increase for certain customers. Requires contracting for administrative services.	
<u>SB 554</u> Wolk (D)	Delta Levee Maintenance		Relates to the maintenance or improvement of project or nonproject levees in the Sacramento-San Joaquin Delta. Declares legislative intent to reimburse up to a certain percent of costs incurred in any year for the maintenance or improvement of levees in excess of a specified sum per mile of levee and authorizes a specified board to advance funds in an amount that does not exceed a certain percent of the estimated state share to an eligible local agency.	04/28/2016 - To ASSEMBLY Committee on WATER, PARKS AND WILDLIFE.
<u>SB 814</u> Hill (D)	Drought: Excessive Water Use: Urban Retail Water Supply	Seek Amendments	Requires each urban retail water supplier to establish a method to identify and restrict excessive water use. Authorizes the establishment of a rate structure that penalizes such excessive water users. Authorizes an excessive water use ordinance, rule, or tariff condition. Makes a violation thereof an infraction with specified monetary penalties.	05/16/2016 - To ASSEMBLY Committee on WATER, PARKS AND WILDLIFE.
<u>SB 885</u> Wolk (D)	Construction Contracts: Indemnity	Oppose	Specifies, for construction contracts, that a design professional only the has the duty to defend claims that arise out of, or pertain or relate to, negligence, recklessness, or willful misconduct of the design professional. Prohibits a waiver of these provisions. Provides that any clause, covenant, or agreement contained in, collateral to, or affecting a contract that requires a design professional to defend claims or lawsuits against other persons or entities is void and unenforceable.	05/10/2016 - In SENATE. Read second time and amended. To third reading.
<u>SB 919</u> Hertzberg (D)	Water Supply: Creation or Augmentation of Local Water		Requires the Public Utilities Commission to address the oversupply of renewable energy resources through a tariff or other economic incentive for electricity purchased by customers operating facilities that create or augment local water supplies to reduce the cost of electricity to those facilities.	05/31/2016 - In ASSEMBLY. Read second time and amended. Re-referred to Committee on UTILITIES AND COMMERCE.

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<u>SB 970</u> Leyva (D)	Greenhouse Gas Reduction Fund: Grants: Recyclables		Requires the Department of Resources Recycling and Recovery, in awarding a grant for organic composting or anaerobic digestion under the grant program under the Greenhouse Gas Reduction Fund for financial assistance to reduce such gas emissions, to consider the amount of greenhouse gas emission reductions that may result from the project and the amount of organic material that may be diverted from landfills as a result of the project.	05/31/2016 - In SENATE. Read third time. Passed SENATE. *****To ASSEMBLY.
<u>SB 974</u> Governance and Finance Cmt	Local Government: Omnibus	Support	Amends existing law regarding local government to include a county recorder storing survey records, fees for copies of military discharges, notary public commissioning, local financial reporting, city financial condition reporting, investment of local sinking fund moneys, public hearings under the Subdivision Map Act, local safety land use elements, the redevelopment and reuse of Fort Ord, sewage services and facilities fees, use of design-build, vehicle license fees, and income tax collection.	05/02/2016 - To ASSEMBLY Committee on LOCAL GOVERNMENT.
<u>SB 995</u> Pavley (D)	Well Standards		Requires the Department of Water Resources to update well standards for certain types of wells based on existing knowledge. Establishes an advisory panel to identify critical gaps in existing knowledge about the best practices for well construction, alteration, maintenance, and destruction for these wells.	05/31/2016 - In SENATE. Read second time and amended. To third reading.
<u>SB 1026</u> Nielsen (R)	Lake or Streambed Alteration Agreements		Relates to lake or streambed alteration agreement. Limits the diversions and obstructions governed by alteration agreement requirements to the diversions and obstructions that alter the bed, channel, or bank of a river, stream or lake. Exempts routine maintenance and repair of facilities for instream agricultural diversions.	04/12/2016 - In SENATE Committee on NATURAL RESOURCES AND WATER: Failed passage.
<u>SB 1043</u> Allen (D)	Biogas and Biomethane		Requires the State Air Resources Board to consider and adopt policies to significantly increase the sustainable production and use of biogas. Requires the Board, to ensure the production and use of renewable gas provides direct environmental benefits and identify	05/27/2016 - In SENATE Committee on APPROPRIATIONS: Held in committee.

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			barriers to the rapid development and use of biogas and potential sources of funding. Revises the definition of biogas and biomethane for pipeline integrity and safety purposes.	
<u>SB 1173</u> Hertzberg (D)	Plumbing Fixtures: CalConserve Water Use Efficiency		Requires for commercial property the replacement of any noncompliant fixture or fitting in specified additions, alterations, and improvements to such property and the replacement of any noncompliant plumbing fixture or fitting in all such property in accordance with a specified schedule based on floor space. Provides related definitions. Authorizes county offices of education and school district boards to receive moneys from the CalConserve Water Use Efficiency Fund for efficiency projects.	03/30/2016 - From SENATE Committee on TRANSPORTATION AND HOUSING with author's amendments.;03/30/2016 - In SENATE. Read second time and amended. Re-referred to Committee on TRANSPORTATION AND HOUSING.
<u>SB 1213</u> Wieckowski (D)	Renewable Energy: Biosolids: Matching Grants		Requires the Energy Resources Conservation Commission to develop and implement the Biosolids to Clean Energy Grant Program to provide matching funds to local wastewater agencies for biosolids to clean energy capital projects. Appropriates a specified amount of funds annually to the Commission for purposes of the program.	05/27/2016 - In SENATE Committee on APPROPRIATIONS: Held in committee.
<u>SB 1233</u> McGuire (D)	Joint Powers Authority: Water Bill Savings Act		Enacts the Water Bill Savings Act. Authorizes a joint powers authority to provide funding for a customer of a local agency or its publicly owned utility to acquire, install, or repair a water efficiency improvement on the customer's property served by the local agency or its publicly owned utility. Requires repayment through an efficiency charge on the customer's water bill. Authorizes the authority to issue bonds to fund the program. Makes technical changes.	05/26/2016 - In SENATE. Read third time. Passed SENATE. *****To ASSEMBLY.
<u>SB 1260</u> Allen (D)	Stormwater: Municipalities: Online Resource Center		Requires the State Water Resources Control Board to establish an online resource center that addresses measures available for municipalities to comply with municipal stormwater permit requirements. Authorizes the inclusion of certain information.	05/27/2016 - To ASSEMBLY Committee on ENVIRONMENTAL SAFETY AND TOXIC MATERIALS.

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<u>SB 1262</u> Pavley (D)	Water Supply Planning		Requires a city or county that determines a project is subject to the California Environmental Quality Act to identify any water system whose service area includes the project site and any water system adjacent to the project site. Provides that hauled water or groundwater from a probationary basin are not sources of water for the purposes of an assessment. Revises the definition of sufficient water supply.	05/26/2016 - In SENATE. Read third time. Passed SENATE. *****To ASSEMBLY.
<u>SB 1263</u> Wieckowski (D)	Public Water System: Permits		Relates to public water systems permits. Prohibit an application for a permit for a new public water system from being deemed complete unless the applicant has submitted a preliminary technical report to the state board. Allows the state board to impose technical, financial, or managerial requirements on the permit.	05/16/2016 - To ASSEMBLY Committees on ENVIRONMENTAL SAFETY AND TOXIC MATERIALS and WATER, PARKS AND WILDLIFE.
<u>SB 1317</u> Wolk (D)	Groundwater Extraction Permit	Oppose Unless Amended	Requires a city or county overlying a basin designated as a high- or medium- priority basin to establish a process for the issuance of a groundwater extraction permit for the development of a groundwater extraction facility that requires an applicant to demonstrate the extraction from a proposed facility will not contribute to or create an undesirable result. Provides a city or county overlying such basin does not have to have a permit process under specified conditions.	05/31/2016 - In SENATE. Read second time. To third reading.
<u>SB 1318</u> Wolk (D)	Local Government: Drinking Water and Wastewater Service		Extends a prohibition in existing law the prohibits a local agency formation commission from approving a specified annexation of land to a qualified special district. Prohibits such commission from approving a sphere of influence unless it results in improved service to a disadvantaged community. Relates to required processes regarding safe drinking water or adequate wastewater treatment in disadvantaged communities.	05/24/2016 - In SENATE. Read second time. To third reading.
<u>SB 1340</u> Wolk (D)	Water Conservation in Landscaping Act		Adds to the model water efficient landscape ordinance a permit requirement for the installation or replacement of specified automatic irrigation systems, or the expansion of the same specified	05/16/2016 - In SENATE. Read third time. Passed SENATE. *****To ASSEMBLY.

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			automatic irrigation system to increase the irrigated area by a specified percentage or more, for a landscape project. Allows the governing body of a local agency to adopt an ordinance prescribing fees for filing an application for the permit, subject to the restrictions.	
<u>SB 1383</u> Lara (D)	Short-Lived Climate Pollutants		Requires the State Air Resources Board to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a specified reduction in methane, hydro-fluorocarbon gases, and anthropogenic black carbon below 2013 levels by 2030.	05/27/2016 - From SENATE Committee on APPROPRIATIONS: Do pass.;05/27/2016 - In SENATE. Read second time. To third reading.
<u>SB 1415</u> Bates (R)	Environmental Quality Act: Local Water Projects		Amends the Environmental Quality Act which requires a lead agency to call a scoping meeting for transportation-related projects and projects of statewide, regional, or areawide significance to require that lead agency to call a scoping meeting to receive public comments for local projects for stormwater or dry weather runoff capture and reuse, water recycling, or wastewater treatment to improve water quality.	04/21/2016 - Re-referred to SENATE Committee on APPROPRIATIONS.
<u>SB 1425</u> Pavley (D)	Water Energy Nexus Registry		Requires the State Air Resources Board to develop a registry of greenhouse gas emission resulting from the water-energy nexus using the best available data including specified actions of a former registry as they relate to the water-energy nexus.	05/31/2016 - In SENATE. Read third time. Passed SENATE. *****To ASSEMBLY.
<u>SB 1440</u> Cannella (R)	Water Supply and Infrastructure Improvement		Requires a lead agency, in certifying the environmental impact report and in granting approvals for certain water storage projects funded, in whole or in part, by Proposition I, to comply with specified procedures. Authorizes the lead agency to concurrently prepare the record of proceedings for the project. Requires the Judicial Council to adopt a rule of court to establish procedures applicable to actions or proceedings seeking judicial review.	03/10/2016 - To SENATE Committees on ENVIRONMENTAL QUALITY and JUDICIARY.

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Bill No. Author	Title	IRWD Position	Summary/Effects	Status
<u>SB 1456</u> Galgiani (D)	Safe Drinking Water State Revolving Fund Law		Amends an existing law which establishes the Safe Drinking Water State Revolving Fund. Authorizes certain costs to be funded by loans or other repayable financing, grants, principal forgiveness, or a combination of grants and loans or other financial assistance, regardless of whether a public water system is a community public water system or a not-for-profit noncommunity public water system. Limits the principal forgiveness to capital improvements serving specified severely disadvantaged communities.	05/31/2016 - In SENATE. Read third time. Passed SENATE. *****To ASSEMBLY.
<u>HR 2689</u> Walters (R)	Eligible Water Resources Projects	Support	Clarifies the scope of eligible water resources projects under the Water Resources Development Act of 1986 and the Water Resources Reform and Development Act of 2014.	06/10/2015 - In HOUSE Committee on TRANSPORTATION & INFRASTRUCTURE: Referred to Subcommittee on WATER RESOURCES AND ENVIRONMENT.
<u>HR 4615</u> Huffman (D)	Water Department Gross Income Exclusion	Support	Amends the Internal Revenue Code of 1986 to exclude from gross income amounts received from a water department for water conservation efficiency measures and water runoff management improvements.	02/25/2016 - INTRODUCED.;02/25/2016 - To HOUSE Committee on WAYS AND MEANS.
<u>S 2533</u> Feinstein (D)	Water Supplies for California and Drought Resiliency		Provides short-term water supplies to drought-stricken California, provides for long-term investments in drought resiliency throughout the Western United States.	05/17/2016 - Subcommittee on WATER AND POWER hearings held.
<u>S 2848</u> Inhofe (R)	Water Conservation and Development		Provides for the conservation and development of water and related resources, authorizes the Secretary of the Army to construct various projects for improvements to rivers and harbors of the United States.	04/28/2016 - In SENATE Committee on ENVIRONMENT AND PUBLIC WORKS: Ordered to be reported as amended.

Exhibit “B”

2016 Legislative Update Report: Links to Bill Texts

Bill Number/Version Date	Link to Bill Text
AB 2304 (Levine), as amended May 11, 2016.	http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB2304
SB 163 (Hertzberg), as amended September 3, 2015	http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB163
S. 2848: Water Resources Development Act of 2016 as amended by Committee	https://www.congress.gov/bill/114th-congress/senate-bill/2848/text
H.R. 5303: Water Resources Development Act of 2016 as amended by Committee	https://www.congress.gov/bill/114th-congress/house-bill/5303/text?q=%7B%22search%22%3A%5B%22%5C%22hr5303%5C%22%22%5D%7D&resultIndex=1

EXHIBIT "C"

AB 2909 (Levine) *Water Transfers Bill*

SECTION 1. Section ____ is added to the Water Code, to read:

_____. (a) The department and the board shall develop an expedited 45-day review process for approval of applications for reoccurring water transfers and environmentally beneficial transfers. Only reoccurring water transfers that are substantially similar in volume, time of year, and hydrologic conditions to those previously approved by the department or the board in the past 48 months may be eligible expedited approval.

(b) "Environmentally beneficial transfers" mean any of the following:

(1) Transfers between water users that are otherwise designed to benefit the environment.

(2) Transfers that protect habitat and sensitive wildlife or enhance managed wetland supply, wildlife refuges, ecosystems, and instream flow.

(3) Transfers that benefit local drinking water supplies by reducing local groundwater overdraft or improving water quality.

(4) Transfers that contribute to implementation of the Sustainable Groundwater Management Act in both the area of origin and the managed basin.

(c) This section may not be used for more than five consecutive reoccurring water transfers.

(d) This section applies in addition to any other law relating to water transfers and exchanges.

SEC. 2. Chapter 7.5 (commencing with Section 485) is added to Division 1 of the Water Code, to read:

CHAPTER 7.5. California Water Market Task Force

485. The Legislature finds and declares all of the following:

(a) An efficient water transfer process plays an important role in reducing uncertainty and water shortage impacts on the state's economy now and in the future.

(b) The California Water Action Plan calls for making improvements to the water transfer process as part of a comprehensive, long-term water management policy.

(c) While numerous water agencies and water users currently participate in the water market, water transfer processes are complex and water market information may not be readily available to the public and to all potential sellers and buyers.

- (d) Voluntary water transfers are a proven and effective way to help meet California's water needs.
- (e) Improving the water transfer process can accomplish all of the following:
 - (1) Protect existing local and regional investments.
 - (2) Improve coordination among water agencies.
 - (3) Incentivize significant investments in water use efficiency projects and programs.
 - (4) Increase water supply and water supply reliability for urban and agricultural water users.
 - (5) Increase the quantities or improve the timing of water available for transfers by providing information to sellers and buyers who might not otherwise have sufficient information to participate in water markets.
 - (6) Benefit the environment by enhancing the state's water supplies and increasing the amount or improving the timing of water available for environmental uses.
 - (7) Benefit communities by bolstering water supplies and reducing reliance on groundwater resources.

486. (a) The California Water Market Task Force is hereby created.

(b) The California Water Market Task Force shall hold public meetings, be chaired by the Secretary of Natural Resources Agency, or his or her designee and shall be composed of the following members:

(1) One representative from each of the following state agencies:

- (A) The department.
- (B) The board.
- (C) The Department of Fish and Wildlife.
- (D) The Department of Food and Agriculture.
- (E) The Office of Planning and Research.

(2) Eleven members appointed by the Secretary of Natural Resources Agency as follows:

- (A) A representative from academia.
- (B) An agricultural water supplier.
- (C) A municipal water supplier.
- (D) A member representing disadvantaged communities.
- (E) A member representing environmental and conservation organizations.
- (F) A member representing groundwater management entities.
- (G) Three members representing entities that have participated in water transfers as sellers and buyers of water. These may include a member representing cities, counties and local production agricultural organizations.
- (H) A member representing Native American tribes in California.

- (I) A member representing an environmental justice organization.
- (c) The federal water and resources agencies shall be invited to have representatives participate in meetings of the California Water Market Task Force.

487. On or before December 31, 2017, the California Water Market Task Force shall make recommendations to the Governor and the Legislature for changes in law and administrative processes, if any changes are needed, to address all of the following:

(a) How to aggregate and disclose in a publicly accessible manner the information required to be submitted in support of an application to transfer water, without disclosing information that is subject to current negotiations. The information may include, but not be limited to, all of the following:

- (1) The origin and proposed point of use, place of use, new point of redirection and purpose of use of the transferred or exchanged water.
- (2) The proposed quantity of water to be transferred or exchanged.
- (3) The proposed time and duration of the water transfer or exchange.
- (4) The price of a completed transfer.
- (5) The nature of the underlying right to the water proposed to be transferred or exchanged.
- (6) The parties to the water transfer or exchange.
- (7) The state and federal conveyance and storage facilities used to complete the water transfer or exchange.

(b) The information required for water users and the public to readily track the progress of a proposed transfer through agency review to ensure expedient approval whenever possible.

(c) Procedures and standards designed to provide for all of the following:

- (1) Coordinated review of and action upon applications or proposals to transfer or exchange water, or both.
- (2) Reduce transaction costs of water transfers and exchanges.
- (3) Assure that transfers and exchanges protect environmental and community resources in areas of origin and in recipient areas.
- (4) Demonstrate that a transfer will not adversely affect groundwater conditions in any areas involved in the transfer.
- (5) Ensure expedient approval whenever possible

(d) Other information that the California Water Market Task Force deems significant. This may include recommendations regarding any or all of the following:

- (1) Consolidating places of use.

- (2) Incentivizing and facilitating water use efficiency-related water transfers, as well as transfers between environmental uses.
- (3) Developing and facilitating pilot transfers based on crop fallowing and other practices to quantify and validate consumptive water use rates and incorporating findings into water transfer guidelines.
- (4) Providing transparency regarding Delta carriage water loss analysis.
- (5) Establishing or documenting conveyance access protocols.
- (6) Creating market mechanisms for access to capital.
- (7) Changes to water delivery systems that could increase the ability to transfer water among willing buyers and sellers within the state.

EXHIBIT "D"

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Substantive

AMENDMENTS TO SENATE BILL NO. 163 AS AMENDED IN ASSEMBLY SEPTEMBER 3, 2015

Amendment 1

On page 3, before line 1, insert:

SECTION 1. Section 13557.5 is added to the Water Code, to read:

13557.5. (a) The Legislature hereby finds and declares that, except in compliance with the provisions of this section, it is a waste and unreasonable use of water within the meaning of Section 2 of Article X of the California Constitution to discharge treated wastewater from an ocean or bay outfall, or for a water supplier or water replenishment district to not take treated wastewater made available to the supplier or district for groundwater recharge, surface water augmentation, or landscape irrigation.

(b) On or before January 1, 2020, the state board shall promulgate regulations to require both of the following:

(1) On or before January 1, 2023, each holder of an NPDES permit to submit to the state board the permitholder's plans to achieve beneficial reuse, to the maximum extent possible, of treated wastewater that would otherwise be discharged through ocean or bay outfalls.

(2) On or before January 1, 2033, the beneficial reuse of at least 50 percent of treated wastewater that the NPDES permitholder would otherwise discharge through ocean or bay outfalls relative to the inflow to the treatment plant.

(c) The regulations promulgated pursuant to subdivision (b) shall provide operational and compliance flexibility in the event of an emergency, scheduled maintenance or repairs, extreme weather events, or any other factor that the board determines warrants consideration.

(d) In developing the regulations pursuant to subdivision (b), the state board may convene an advisory group for the purpose of preparing a report or recommendations to the state board about how to implement this section and the state board may consider any other recommendations or testimony provided during the regulation adoption process.

(e) Consistent with Section 3 of Article XIII A of the California Constitution, the state board may adopt reasonable fees payable by a holder of an NPDES permit to recover costs incurred in administering this section.

Amendment 2

On page 3, strike out lines 1 to 19, inclusive, and strike out pages 4 to 7, inclusive

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EXHIBIT "E"

10186

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Substantive

AMENDMENTS TO SENATE BILL NO. 1298

Amendment 1

In the title, strike out lines 1 and 2 and insert:

An act to amend Sections 53750 and 53755 of, and to add Section 53756.5 to, the Government Code, relating to local government finance.

Amendment 2

On page 1, before line 1, insert:

SECTION 1. The Legislature finds and declares all of the following:

(a) The ongoing, historic drought has made clear that California must invest in a 21st-century water management system capable of effectively meeting the economic, social, and environmental needs of the state.

(b) Sufficient and reliable funding to pay for local water projects is necessary to improve the state's water infrastructure.

(c) Proposition 218, approved in 1996, was meant to improve transparency and accountability of local government fees. Some court interpretations of the law have constrained three important tools that local governments need to manage water supplies and address water pollution: stormwater management, rates to encourage water conservation, and assistance for low-income Californians.

(d) Stormwater is a key source of local water supply, and careful management is necessary to reduce pollution. But a court decision has required stormwater and flood control programs to meet a higher standard than other water-related services to raise capital, preventing many important projects from being built.

(e) One important way to encourage water conservation is to charge higher rates to customers using excessive amounts of water. This is a common practice throughout the world and a requirement for California's private water agencies. Unfortunately, a recent court decision has made it difficult and confusing for local agencies to implement this necessary tool.

(f) The United States Environmental Protection Agency has found that water rates exceeding 2 percent of monthly income are unaffordable, which is the case for millions of Californians. Private water and energy utilities are required to offer programs to make rates affordable to low-income households. Local governments in California, however, are concerned that recent court decisions regarding Proposition 218 could prohibit them from providing the same service.

(g) This act is intended to provide guidance to local agencies and courts on the implementation of Articles XIII C and XIII D of the California Constitution and shall not be construed to amend those articles.

SEC. 2. Section 53750 of the Government Code is amended to read:

53750. For purposes of Article XIII C and Article XIII D of the California Constitution and this article:

(a) "Agency" means any local government as defined in subdivision (b) of Section 1 of Article XIII C of the California Constitution.



(b) "Assessment" means any levy or charge by an agency upon real property that is based upon the special benefit conferred upon the real property by a public improvement or service, that is imposed to pay the capital cost of the public improvement, the maintenance and operation expenses of the public improvement, or the cost of the service being provided. "Assessment" includes, but is not limited to, "special assessment," "benefit assessment," "maintenance assessment," and "special assessment tax."

(c) "District" means an area that is determined by an agency to contain all of the parcels that will receive a special benefit from a proposed public improvement or service.

(d) "Drainage system" means any system of public improvements that is intended to provide for erosion control, for landslide abatement, or for other types of water drainage.

(e) "Extended," when applied to an existing tax or fee or charge, means a decision by an agency to extend the stated effective period for the tax or fee or charge, including, but not limited to, amendment or removal of a sunset provision or expiration date.

(f) "Flood control" means any system of public improvements that is intended to protect property from overflow by water.

(g) "Identified parcel" means a parcel of real property that an agency has identified as having a special benefit conferred upon it and upon which a proposed assessment is to be imposed, or a parcel of real property upon which a proposed property-related fee or charge is proposed to be imposed.

(h) (1) "Increased," when applied to a tax, assessment, or property-related fee or charge, means a decision by an agency that does either of the following:

(A) Increases any applicable rate used to calculate the tax, assessment, fee, or charge.

(B) Revises the methodology by which the tax, assessment, fee, or charge is calculated, if that revision results in an increased amount being levied on any person or parcel.

(2) A tax, fee, or charge is not deemed to be "increased" by an agency action that does either or both of the following:

(A) Adjusts the amount of a tax, fee, or charge in accordance with a schedule of adjustments, including a clearly defined formula for inflation adjustment that was adopted by the agency prior to November 6, 1996.

(B) Implements or collects a previously approved tax, fee, or charge, so long as the rate is not increased beyond the level previously approved by the agency, and the methodology previously approved by the agency is not revised so as to result in an increase in the amount being levied on any person or parcel.

(3) A tax, assessment, fee, or charge is not deemed to be "increased" in the case in which the actual payments from a person or property are higher than would have resulted when the agency approved the tax, assessment, fee, or charge, if those higher payments are attributable to events other than an increased rate or revised methodology, such as a change in the density, intensity, or nature of the use of land.

(i) "Notice by mail" means any notice required by Article XIII C or XIII D of the California Constitution that is accomplished through a mailing, postage prepaid, deposited in the United States Postal Service and is deemed given when so deposited. Notice by mail may be included in any other mailing to the record owner that otherwise

complies with Article XIII C or XIII D of the California Constitution and this article, including, but not limited to, the mailing of a bill for the collection of an assessment or a property-related fee or charge.

(j) "Proportional cost of the service attributable to the parcel," when applied to a fee or charge for water or sewer service, means the share of the total cost of providing water or sewer service to water or sewer users within the service area reasonably attributable to the parcel. The total cost of providing water or sewer service includes all costs of acquiring water and water rights, costs of collecting, conveying, treating, and managing water and wastewater, costs of satisfying all regulatory requirements lawfully imposed on water and sewer service providers, and costs of providing communitywide water service in an equitable manner, including the cost of lifeline water rates.

(k) "Record owner" means the owner of a parcel whose name and address appears on the last equalized secured property tax assessment roll, or in the case of any public entity, the State of California, or the United States, means the representative of that public entity at the address of that entity known to the agency.

(l) "Sewer service" means services provided by all real estate, fixtures, and personal property owned, controlled, operated, or managed in connection with or to facilitate sewage collection, treatment, or disposition for sanitary or drainage purposes, including lateral and connecting sewers, interceptors, trunk and outfall lines, sanitary sewage treatment or disposal plants or works, drains, conduits, outlets for surface or storm waters, and any and all other works, property, or structures necessary or convenient for the collection or disposal of sewage, industrial waste, or surface or storm waters. "Sewer system" shall not include a sewer system that merely collects sewage on the property of a single owner.

(m) "Registered professional engineer" means an engineer registered pursuant to the Professional Engineers Act (Chapter 7 (commencing with Section 6700) of Division 3 of the Business and Professions Code).

(n) "Vector control" means any system of public improvements or services that is intended to provide for the surveillance, prevention, abatement, and control of vectors as defined in subdivision (k) of Section 2002 of the Health and Safety Code and a pest as defined in Section 5006 of the Food and Agricultural Code.

(o) "Water"

(o) "Water service" means services provided by any system of public improvements intended to provide for the production, storage, supply, treatment, or distribution of water from any source.

SEC. 3. Section 53755 of the Government Code is amended to read:

53755. (a) (1) The notice required by paragraph (1) of subdivision (a) of Section 6 of Article XIII D of the California Constitution of a proposed increase of an existing fee or charge for a property-related service being provided to a parcel may be given by including it in the agency's regular billing statement for the fee or charge or by any other mailing by the agency to the address to which the agency customarily mails the billing statement for the fee or charge.

(2) The notice required by paragraph (1) of subdivision (a) of Section 6 of Article XIII D of the California Constitution of a proposed new fee or charge may be given in the manner authorized for notice of an increase of a fee or charge if the agency is currently providing an existing property-related service to the address.

(3) If the agency desires to preserve any authority it may have to record or enforce a lien on the parcel to which service is provided, the agency shall also mail notice to the recordowner's address shown on the last equalized assessment roll if that address is different than the billing or service address.

(b) One written protest per parcel, filed by an owner or tenant of the parcel, shall be counted in calculating a majority protest to a proposed new or increased fee or charge subject to the requirements of Section 6 of Article XIII D of the California Constitution.

(c) One vote per parcel, filed by an owner or tenant of the parcel, shall be counted in determining whether a proposed fee or charge is approved by a majority vote pursuant to subdivision (c) of Section 6 of Article XIII D of the California Constitution.

(e)

(d) Any agency that bills, collects, and remits a fee or charge on behalf of another agency may provide the notice required by Section 6 of Article XIII D of the California Constitution on behalf of the other agency.

SEC. 4. Section 53756.5 is added to the Government Code, to read:

53756.5. (a) The Legislature finds and declares all of the following:

(1) Water service may be used for purposes that are indispensable to the use of the property, including, but not limited to, cooking, sanitation, and reasonable irrigation.

(2) Water service may also be used for purposes that are not indispensable to the use of property, including, but not limited to, excessive indoor use, unabated leakage, excessive irrigation, and other activities that constitute an inefficient use of the water.

(3) The amount of water that is indispensable to the use of a property may vary depending on the use to which the property is put, local conditions, water shortages, environmental factors, and other factors affecting water demand and supply availability.

(4) Local agencies should have the authority to determine the amount of water that is indispensable for property use, given the above conditions.

(5) Charges for water that is not indispensable for property use are not imposed as an incident of property ownership and therefore are not property-related charges as defined by Article XIII D of the California Constitution.

(6) Charges for water that is not indispensable for property use may be either specific benefits or specific government services under Article XIII C of the California Constitution.

(7) Article XIII C of the California Constitution does not identify the costs that may be associated with water service, define "a fair or reasonable relationship" between the costs of the service and the burdens or benefits associated with the service, or prescribe a particular method for allocating the costs of providing nonproperty-related water services or benefits.

(b) An agency may, in addition to any property-related fee or charge imposed pursuant to Article XIII D of the California Constitution and this article for water service, impose or increase a separate and distinct conservation and efficiency fee or charge for the same service to create price signals to encourage conservation and increased efficiency in the use of water. A conservation and efficiency fee or charge

imposed pursuant to this section may be imposed on water that is not indispensable for property use. A conservation and efficiency fee or charge imposed pursuant to this section may be imposed for purposes including, but not limited to:

(1) Deterrence of excess consumption of water, as determined by the local agency.
(2) Encouragement of the adoption of technologies that support more efficient use of water.

(3) To encourage compliance with the goals of avoiding waste and unreasonable use of water pursuant to Section 2 of Article X of the California Constitution.

(c) (1) A conservation and efficiency fee or charge may raise revenue as an incident to its intended purpose. Any revenue produced shall only be used to pay the costs of providing water service, to lower the rate or rate structure of the associated property-related fee or charge for water service, or to provide lower rates or rebates for disadvantaged households. The total amount collected from the property-related fee or charge for water service and the conservation and efficiency fee or charge shall not exceed the reasonable costs incurred by the agency to provide the water service.

(2) The rate of a conservation and efficiency fee or charge shall bear a fair or reasonable relationship to the burden imposed on the local agency or the benefits received from the water service based on the amount of water used by each customer or class of customers. The agency may determine that the burden on, or the benefits derived from, the provision of water service per unit of water used is greater for customers who use relatively large amounts of water for their type and size of real property. The agency may establish a rate structure for a conservation and efficiency fee or charge intended to encourage conservation and increased efficiency of water use in order to bring the burdens of providing water service to customers or classes of customers into reasonable balance. The charges may be structured in a tiered, ascending, or other incremental manner. In addition, the agency may determine that the fairness of the rate structure is enhanced if it provides for lower rates for disadvantaged households, also known as lifeline rates.

(d) Consideration and imposition or increase of a conservation and efficiency fee or charge shall comply with the notice, hearing, protest, and election requirements, if any, required by Article XIII D of the California Constitution. However, the requirements of paragraph (3) of subdivision (b) of Section 6 of Article XIII D shall not apply to any conservation and efficiency fee or charge levied pursuant to this section.

(e) (1) For the purposes of this section, "reasonable costs" of the specific benefit or specific government service shall include, but are not limited to, costs that will, directly or indirectly, enable an agency to meet water demands, reduce water demands, conserve potable water supplies, procure water supplies to provide water that is not indispensable to the use of property, and provide communitywide water service in an equitable manner, including lifeline water rates. The determination of reasonable costs may consider the relative income of the payer of the fee or charge.

(2) For the purposes of this section and Article XIII C of the California Constitution, "fair or reasonable relationship" may include a relationship consistent with principles of equity that hold that more affluent individuals benefit more from public services, including water service, than less affluent individuals receiving the same service.

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Substantive

SEC. 5. The provisions of this act are severable. If any provision of this act or its application is held invalid, that invalidity shall not affect other provisions or applications that can be given effect without the invalid provision or application.

Amendment 3

On page 1, strike out lines 1 to 5, inclusive, and strike out page 2

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June 13, 2016

Prepared by: T. Bonkowski/M. Cortez

Submitted by: K. Burton *KLB*

Approved by: Paul Cook *P. Cook*

CONSENT CALENDAR

RANCHO PARKWAY ZONE C RECYCLED WATER PIPELINE FINAL ACCEPTANCE

SUMMARY:

This project removed an interim domestic water supply interconnection to the recycled water system and constructed pipelines and appurtenances to convert the irrigation supply to recycled water for a portion of the Baker Ranch Development, saving approximately 68 acre-feet per year of domestic water. The District awarded a construction contract to Paulus Engineering, Inc. on February 10, 2016. Paulus has completed the required work and all punch list items. This project has received final inspection and acceptance of construction is recommended.

BACKGROUND:

The District's Zone C recycled water system in Rancho Parkway, south of Alton Parkway in the City of Lake Forest, was supplied by the Lake Forest Zone 3R domestic water system through an interim interconnection. This project removed the interim domestic water interconnection and constructed new pipeline and appurtenances to supply the area with recycled water from the Zone C pressure zone. The improvements included piping modifications to disconnect the domestic water interconnection, installation of 1,670 feet of 12-inch recycled water pipeline in Rancho Parkway South, and 20 feet of six-inch recycled water pipeline to connect two existing separate recycled water pipelines in Rancho Parkway near Hermana Circle. These improvements will provide recycled water for the irrigation of a portion of the Baker Ranch development.

Project Title:	Rancho Parkway Zone C Recycled Water Pipeline
Project No:	6470
Design Engineer:	MBF Consulting, Inc.
Construction Management by:	IRWD Staff
Contractor:	Paulus Engineering, Inc.
Original Contract Cost:	\$413,125
Final Contract Cost:	\$410,755
Original Contract Days:	120
Final Contract Days:	120
Final Change Order Approved On:	May 25, 2016

FISCAL IMPACTS:

Project 6470 is included in the FY 2015-16 Capital Budget. The existing budget and Expenditure Authorization are sufficient to fund the final payment for the project.

ENVIRONMENTAL COMPLIANCE:

This project is categorically exempt from the California Environmental Quality Act (CEQA) as authorized under the California Code of Regulations, Title 14, Chapter 3, Statutory Exemption 15282, which provides for the installation of a new pipeline that does not exceed one mile (more than 5,210 feet) in length. A Notice of Exemption was filed with the County of Orange on August 25, 2015.

COMMITTEE STATUS:

This item was not reviewed by a Committee.

RECOMMENDATION:

THAT THE BOARD ACCEPT CONSTRUCTION OF THE RANCHO PARKWAY ZONE C RECYCLED WATER PIPELINE, PROJECT 6215, AUTHORIZE THE FILING OF A NOTICE OF COMPLETION, AND AUTHORIZE THE PAYMENT OF THE RETENTION 35 DAYS AFTER THE DATE OF RECORDING THE NOTICE OF COMPLETION.

LIST OF EXHIBITS:

None.

June 13, 2016

Prepared by: F. Sanchez

Submitted by: P. Weghorst

Approved by: Paul Cook 

ACTION CALENDAR

DECLARATION OF WATER SHORTAGE LEVEL ONE

SUMMARY:

In response to drought conditions, the Governor issued Executive Order B-2-15 on April 1, 2015. This order mandated a 25 percent statewide reduction in urban potable water use from 2013 levels. Subsequent regulatory action by the State Water Resources Control Board established IRWD's specific potable water use conservation target at 16 percent. This target equated to the need to save approximately 8,000 acre-feet (AF) of potable water. In July 2016, the IRWD Board of Directors declared a Level Two Shortage, which represents a significant shortage between 10 percent and 25 percent. In March 2016, IRWD's conservation target was reduced to 8 percent by the State Board, which represents a low-level shortage condition. Based on this change, staff recommends that the Board adopt a resolution rescinding Resolution No. 2015-18 and declaring a Water Shortage Level One which represents a low-level shortage condition.

BACKGROUND:

The State of California has experienced several years of a severe statewide drought. In response to this multi-year drought, the Governor issued a series of executive orders. In April 2015, the Governor issued Executive Order B-2-15 that mandated a 25 percent statewide reduction in urban potable water use from 2013 levels. In May 2015, the State Board adopted a Drought Emergency Regulation that allocated potable water use reductions to urban water suppliers to achieve the statewide mandate. The District's mandated conservation target for the period June 2015 to February 2016 was 16 percent. This mandated reduction in potable water use fell within the 10 percent to 25 percent Level Two Shortage defined in the District's Water Shortage Contingency Plan (WSCP) which is attached as Exhibit "A". In response to this mandate, the IRWD Board of Directors declared, in July 2015, a Water Shortage Level Two which represents a significant shortage of between 10 percent and 25 percent.

Reduced Conservation Target:

In November 2015, the Governor issued an Executive Order directing the SWRCB to extend the Emergency Regulation until October 2016 based on continued statewide drought conditions. In February 2016, the SWRCB modified the regulation, incorporating credits and adjustments for sustainable supplies, growth and climate. As a result of the adjustments, IRWD's conservation target was reduced to 8 percent effective March 1, 2016.

Further Reduction Through Self Certification:

On May 18, 2016, the State Board adopted a further revised regulation, extending the term of the regulation until January 2017. This extension was adopted based on continued uncertainty over long-term water supplies in California. The revised regulation incorporates a new methodology for calculating water reduction targets. Under the new methodology, agencies can self-certify

the availability of supplies to meet projected demands, assuming another three dry years. The percentage gap between an agency's supplies and demands in the third year will become the water agency's revised conservation target. Agencies must submit their respective self-certifications, with documentation, by June 22, 2016 with a retroactive effective date of June 1, 2016. Staff is preparing IRWD's self-certification and anticipates that the District's current conservation target of 8 percent will be further reduced.

Declaring a Water Shortage Level One:

In accordance with the District's WSCP, the response to water supply shortages varies depending on the magnitude and nature of the shortfall. The appropriate level of shortage that reflects local conditions, IRWD's reduced conservation target and the continued state drought emergency, is a Water Shortage Level One. IRWD's legal counsel has prepared a resolution to formally rescind the declaration of Water Shortage Level Two and to declare a Water Shortage Level One which represents a low-level shortage condition. Staff recommends that the Board adopt the resolution.

Level One Response Measures in Effect:

Water Shortage Level One response measures are incorporated into the Level Two response measures. As a result of the July 2015 Water Shortage Level Two declaration, the Level One measures are already in effect. The following Level One measures are either permanently in effect in years without shortages or have been already implemented as part of the Level One responses. The included prohibitions comply with the requirements of the State Board's Emergency Drought Regulations.

Prohibitions on water waste:

- Prevention of irrigation run-off and water waste;
- Leak prevention;
- Ban on washing down hard or paved surfaces, except when necessary to alleviate safety or sanitary hazards;
- Ban on the use of non-recirculating decorative fountains or water features;
- Ban on single-pass cooling; and
- Ban on the use of a hose for vehicle washing unless the hose has a positive, automatic shut-off device.

Commercial Car Washes:

Commercial conveyor and in-bay car wash systems must reuse water if equipped to do so.

Targeting Conservation Efforts:

The District will continue to offer on-site assistance to customers to help identify the source of inefficient and wasteful tier use and to provide recommendations for reducing water use.

Drought Messaging:

The District will continue its conservation outreach efforts including dedicated pages on the District's website, information in the Pipelines customer newsletter, and presentations to community groups such as city councils, community associations, chambers of commerce, business groups and schools.

Rescission of Level Two Response Measures:

Level Two response measures that will be rescinded based on improved local and statewide conditions are as follows:

- Customers shall reduce potable landscape watering by up to 50 percent;
- Swimming pools shall be filled to a lower level to minimize water loss due to splashing. Discretionary maintenance requiring refilling of swimming pools shall be prohibited. Filling newly-constructed pools and refilling pools for required, non-discretionary maintenance are not subject to the ban;
- Recycled water shall be required for construction activities, including earthwork, dust control and clean-up. The District may, at its discretion, waive this requirement if it can be demonstrated to the District's satisfaction that compliance with the requirement imposes undue hardship; and
- The use of recycled water is required for street sweeping activities. The District may, at its discretion, waive this requirement if it can be demonstrated to the District's satisfaction that compliance with the requirement imposes undue hardship.

Level Two Measure Remaining in Effect

The following Level Two Measure will remain in effect for the remainder of the term of the state Drought Emergency Regulation due to state action (Section 4735 California Civil Code), regardless of any declared water shortage stage by IRWD:

- Common interest associations shall not fine or assess owners of separate interests for reducing or eliminating the watering of vegetation or lawns, except as permitted by California Civil Code Section 4735.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

COMMITTEE STATUS:

This item was reviewed by the Water Resources and Policy and Communications Committee on June 6, 2016.

RECOMMENDATION:

THAT THE BOARD ADOPT A RESOLUTION RESCINDING RESOLUTION NO. 2015-18 AND DECLARING WATER SHORTAGE LEVEL ONE WHICH REPRESENTS A LOW-LEVEL SHORTAGE CONDITION.

LIST OF EXHIBITS:

Exhibit "A" – Water Shortage Contingency Plan
Exhibit "B" – Resolution Declaring Water Shortage Level One

EXHIBIT "A"

WATER SHORTAGE CONTINGENCY PLAN October 2014

PART I: EXECUTIVE SUMMARY

Background

IRWD's response to a water supply shortage varies depending on the magnitude and nature of the shortfall. A supply shortage is defined as a reduction in total supplies, typically resulting from one of two conditions:

- Drought conditions that limit availability of imported water or local supplies.
- System interruptions that result from emergency outage conditions.

IRWD's response to any water supply shortage depends on the cause, severity and anticipated duration of the shortage. Use of local supplies, storage and other supply augmentation measures can mitigate shortages, and are assumed to be in use to the maximum extent possible during declared shortage levels. The resultant net shortage levels can be addressed by demand reduction programs, as described in this Plan. This document is intended primarily to address drought supply shortages, however at the discretion of the Board, this Plan may also be used to address system outages, although these are more explicitly addressed in IRWD's Water Supply Reliability Study (June 2008).

Supply Shortage Conditions

Given the assumption that the level of water supply shortage experienced at any point in time is net of mitigating supply factors, two basic considerations emerge in formulating a water shortage plan: (1) the shortage must be offset by demand reduction, and (2) the demand reduction program must be incremental in nature since shortage conditions are normally progressive. This means that a shortage contingency plan should be designed to address varying levels of supply deficits with recommended actions predicated upon the actual deficit level. Therefore this plan develops a shortage response based upon four levels of supply cutbacks:

- *Level One* is a shortage warning and low level shortage condition with supply reductions of up to 10%.
- *Level Two* is a significant shortage condition indicated by shortages between 10 to 25%.
- *Level Three* is a severe shortage condition indicated by shortages ranging from 25 to 40%.
- *Level Four* is a crisis shortage condition resulting when shortages exceed 40%.

Each shortage level will trigger a set of response measures aimed at reducing demand to the level of supply. Steps taken within each level should be considered cumulative; that is, Level Two responses will include most if not all the responses in Level One plus the additional actions necessary to meet the Level Two condition. Level Three will include most if not all the responses in Level Two plus the additional measures necessary to meet a Level Three condition, and so on.

However, if a shortage condition persisted over an extended period of time, it may be necessary to implement a higher level response to sustain required reductions. Thus both the severity of supply reductions and the duration over which the reductions are experienced will determine the appropriate response.

Supply Shortage Response Measures

In addition to basic measures which are always in effect, there are three types of response measures that can be implemented by the District in the event of a supply shortage.

- Voluntary measures through increased public outreach, education and awareness (V)
- Demand management through the use of the District's allocation-based rate structure (D).
- Mandatory measures through restrictions on use and enforcement (M).

In general terms, voluntary customer responses and demand management through the use of the allocation-based rate structure will be used in all four shortage levels identified in this plan. A combination of voluntary and demand management strategies are likely to be sufficient to address virtually all shortage levels. Responses to shortages in Levels Three and Four may also include restrictions on use and enforcement. Below is a summary of anticipated supply shortage response measures.

Supply Shortage Response Measure	IRWD Supply Shortage Level	Voluntary (V), Demand Management (D) or Mandatory (M)
Public Education	Always In Effect	
Prohibition of Gutter Flooding	Always In Effect	
Prohibition of Leaks	Always In Effect	
Prohibition of Water Waste	Always In Effect	
Enhanced Public Awareness Campaign	Level One	V
Target Over-Allocation Customers for Surveys/Assistance	Level One	V
Review and Adjust Customer Allocations and/or Tiers as necessary	Level One/Two	D
Reduce Potable and Untreated Irrigation and Agricultural Allocations by 30% or other percentage specified in the shortage level declaration	Level Two	D
Reduce Potable and Untreated Irrigation Allocations by 60% or other percentage specified in the shortage level declaration	Level Three	D
Reduce Commercial, Industrial and Institutional Potable Allocations by 10% or other percentage specified in the shortage level declaration	Level Three	D
Increase Rates for Over-Allocation Use Tiers	Level Three/Four	D
Further reduction of allocations, tightening of tiers and rate increases to achieve necessary demand reductions	Level Four	D/M
Eliminate Outdoor Use (100% reduction)	Level Four	D/M
Mandatory restrictions and enforcement	Level Four	M

These response measures may be applied singly or in combination and may vary according to the severity and duration of the shortage. Other measures may be applied in lieu of or in addition to those described in this plan. The application of shortage level response measures or restrictions may vary as to type of water service. In the implementation of measures or restrictions on potable water service through the declaration of a shortage level, the District will determine and set forth how and to what extent, if any, such measures or restrictions, or different measures or restrictions, will be applied to non-potable water services furnished by the District. IRWD's Board of Directors will declare the level of shortage based on water supply conditions.

Imported Water Supply Shortage

An imported water supply shortage represents one of the main causes of a supply shortage for the District. In 2008 approximately one-third of IRWD's water supply was imported through Metropolitan Water District of Southern California (MWD). While potential reductions in imported water deliveries from MWD can be mitigated to some extent by the addition of other local supplies, such as increased pumping from groundwater facilities, or the conversion of certain potable water uses to recycled water (see IRWD's Water Resources Master Plan (WRPM) and Urban Water Management Plan (UWMP)), the range of shortages projected herein is assumed to be net of those supply augmentation measures. That is, supply shortages identified as, say 20%, is the actual shortage confronted by the District's customers after supply augmentation factors have been implemented. This plan is intended to develop a set of options to reduce demand; the development of supply augmentation options is outside the scope of this analysis and is addressed in the WRMP and UWMP.

In February 2008 the MWD adopted a Water Supply Allocation Plan based on its declared level of shortage. IRWD has performed analysis relating to varying hydrologic conditions, availability of supply augmentation measures and additional conservation. Based on the results of the modeling, Table 1 illustrates IRWD water shortage levels correlated with MWD's allocation shortage plan.

Table 1: IRWD Water Shortage Levels Correlated with MWD Allocation Stages:

MWD Stage	MWD Supply Shortage	IRWD Reliability Range	IRWD Shortage Level
1	5%	97-100%	1
2	10%	95-100%	1
3	15%	93-100%	1
4	20%	91-100%	1
5	25%	88-99%	1 or 2
6	30%	86-97%	2
7	35%	84-95%	2
8	40%	82-92%	2
9	45%	79-89%	2
10	50%	77-88%	2 or 3

The above table assumes a dry local hydrology for multiple years and limited access to groundwater. Actual correlations may differ depending on local hydrology at the time of the shortage.

PART II: SHORTAGE RESPONSE STRATEGIES

Basic Measures Always In Effect

The following basic measures are considered good water management practices, and are always in effect regardless of whether a shortage level is declared. These measures are contained in IRWD's Rules and Regulations (Section 15):

- (a) *Gutter Flooding* - No person shall cause or permit any water furnished to any property within the District to run or to escape from any hose, pipe, valve, faucet, sprinkler, or irrigation device into any gutter or otherwise to escape from the property if such running or escaping can reasonably be prevented.
- (b) *Leaks* - No person shall permit leaks of water that he has the authority to eliminate.
- (c) *Washing Hard Surface Areas* - Washing down hard or paved surfaces, including, but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards.
- (d) *Waste* - No person shall cause or permit water under his control to be wasted. Wasteful usage includes, but is not limited to, the uses listed in Section 13(a) of Exhibit 1 to the Memorandum of Understanding Regarding Urban Water Conservation in California, dated December 11, 2002, as amended from time to time, or the counterpart of said list contained in any successor document.

Under the District's allocation-based conservation rate structure that is in effect during non-shortage conditions, customer allocations are limited to the amount that is reasonable for the customer's needs and property characteristics, and reflect the exclusion of these types of wasteful water uses.

Water Supply Shortage Response Measures

IRWD would employ a range of measures in response to potential shortages depending on the level and duration. While the measures will be applied incrementally, this Plan builds in a level of flexibility to adopt additional measures to ensure the appropriate level of demand reduction. The use of IRWD's allocation-based rates and the assessment of higher rates for over-allocation or wasteful use provides IRWD with an additional strategy to help achieve demand reductions.

For illustration purposes, Table 2 shows water reductions requirements that would be required during three shortage conditions, using water demand data from 2007 (See Appendix A for total treated and untreated water demands).

Table 2: Water Conservation Requirements – Acre-Feet:

Shortage Percentage	10%	25%	40%
Treated and Untreated Water	6,673	16,683	26,693
Treated Water Only	5,874	14,686	23,497

In order to achieve the necessary demand reductions, IRWD's measures will progress from voluntary reductions to reduction of discretionary uses through financial incentives or restrictions to reduction of non-discretionary uses through financial incentives or restrictions based on the level of the shortage. Most shortages, unless extreme (Level Four or system outage), can be addressed with a combination of voluntary measures and a reduction of discretionary uses through financial incentives.

Response Measures: Voluntary

The single most important step the District can take in implementing voluntary measures is to inform the public consciousness in order to help reduce water demand. It should be noted that the District has implemented on-going water use efficiency and outreach programs since the early 1990's, and those efforts combined with the allocation-based tiered rates, have resulted in somewhat hardened levels of demand. The District will employ additional strategies to achieve the necessary demand reductions in a shortage situation. Most of the effort will be focused on providing additional outreach to high usage tier customers.

1. *Public Outreach:* An outreach program will educate the public and local leaders on the water supply situation; what actions are proposed; what the intended achievements are; and how these actions are to be implemented. This will be accomplished by having key District personnel present to groups such as the city council, community associations, chambers of commerce, business groups, etc. An endorsement of proposed District plans by these groups will assist in obtaining the public support essential in confronting water shortages.

The public at large will be informed through press releases, billing inserts, water conservation booths, community association meetings, newsletters, church groups, etc. Literature will be provided on the shortage condition, conservation methods, and water-saving devices and be distributed through the fire and police stations, libraries, city hall, schools, shopping center,

recreation facilities, etc. Certain behavior modifications, such as those listed below, can help address the need for immediate conservation.

- Survey plumbing every two months and eliminate water loss resulting from leaky plumbing fixtures.
- Restrict showers to five minutes or less; fill the bath tub no more than one-quarter full.
- Do not run water unnecessarily while shaving, brushing teeth, bathing, preparing food, etc.
- Run only full loads of laundry and dishes.
- Reduce landscape watering.
- Fill swimming pools to a lower level to minimize water loss due to splashing.

2. *Education Programs:* School programs will focus on the water shortage situation. In addition to the usual District background information, the supply situation and conservation methods will be highlighted. Demonstrations using sample water-saving devices can be given; literature will be distributed.
3. *Logo:* A water conservation or shortage response logo will be adopted and vigorously promoted as a symbol to influence public attitudes toward water use.
4. *Media:* Extensive use of all available forms of media will be employed and coordinated with other agencies. This includes public service messages on radio and television and press releases in local newspapers. The messaging and level of response will be correlated with the need for demand reductions.
5. *Target Over-Allocation Customers:* District staff will ramp up its ongoing outreach efforts to more aggressively target over-allocation customers. Over-allocation use is considered wasteful use; customers in these tiers will be contacted via letter, telephone, e-mail and other means. On-site assistance/audits will help identify the source of the over-allocation use and provide recommendations to address the problem.
6. *Customer Service:* Customers will be encouraged to work together to save water and to call IRWD's water use efficiency experts if assistance is needed to help find water leaks or to use water more water efficiently. If someone observing water waste within IRWD's service area is

unsure who the property owner is they can call in to IRWD's Customer Service Department for assistance. IRWD staff will contact the customer associated with the property and offer on-site assistance and recommendations to address the problem.

Response Measures: Demand Management and Use of Allocation-Based Rates

The allocation-based tiered rate structure adopted by IRWD in 1991 is intended to function as a tool to promote ongoing water use efficiency. Water is allocated on an individual customer basis established upon specific indoor uses and outdoor irrigation needs. The structure includes a five-tiered system for residential customers and a four-tiered system for non-residential customers, and charges progressively higher rates for progressively higher amounts of water used. Use within a customer's allocation is encouraged through a significantly tiered commodity pricing system which discourages wasteful use. The allocation-based tiered rates provide IRWD with an effective mechanism to alter demand through pricing.

Analysis of Usage and Tiers

A detailed analysis of the usage and tiers, with the most recently available data, is one of the first steps that should be undertaken in developing demand management strategies, including potential adjustments to the tiers and allocations. Appendix A: 2007 Annual Usage and Tier Break-Down shows the annual usage and tier break-down information for treated and untreated water sources, based on data from calendar year 2007. The first two tiers shown (1 and 2) indicate usage within allocation. Tiers 3 to 5 indicate over-allocation use.

Basic water allocations should be reviewed on a periodic basis taking into consideration changes since the most recent review of these allocations, including changes to the plumbing code that improve water use efficiency, water conservation devices and more efficient irrigation systems available to the average customer. Beyond this, there are several mechanisms that can be employed either separately or in combination to achieve the necessary level of demand reductions.

Allocation Adjustment Strategies for Demand Management

1. Adjusting the Tier Thresholds: This strategy does not adjust the actual allocation formula itself, but rather adjusts the percentage thresholds for the over-allocation tiers. The current tiers and thresholds for the various account types are shown in Table 3. Adjusting the tier thresholds downward would have the effect of shifting more use into the higher over-allocation tiers. Customers in these tiers would be subjected to increased rates depending on the extent of their use (percentage of use above allocation). Reducing the tier thresholds would send stronger price signals by moving over-using customers into the higher tiers.

Table 3: Allocation-Based Rates Tier Thresholds

Tier	Percentage of Allocation		
	Residential	Irrigation	Non-Residential
Low Volume	0-40%	0-40 %	N/A
Base	41-100%	41 – 100%	0-100%
Inefficient	101 – 150%	101 – 110%	101 – 110%
Excessive	151 -200%	111 -120%	111 -120%
Wasteful	201% +	121% +	121% +

2. Allocation Adjustments: An adjustment to the allocation entails refining the allocation formula. This can be done either as a simple percentage adjustment or by adjusting a specific portion of the formula. For example, residential allocations are made up of an indoor plus an outdoor allocation component. It is possible to adjust the outdoor component downward to allow for less outdoor irrigation or eliminate it altogether depending on the need for demand reductions. Water allocations could also be set to levels that would eliminate all outdoor water use including irrigation, car washing, pool filing, agricultural use of non-recycled water etc. Under this scenario the indoor component could be left the same or could be altered as necessary.
3. Rate Increases for Over-Allocation Use: This approach entails adopting higher rates for over-allocation use, and would be linked to purchases of imported water at Metropolitan's penalty rates, among other things.

These three types of allocation adjustments can be established and refined based on customer response in such a way that specified uses are discouraged. The allocations can be established in such a way that

certain uses are not included in the allocation. Customers engaging in these uses would receive over-allocation tier charges on their water bill.

In Levels One and Two, a combination of adjusting the tier thresholds and/or the allocations, as necessary, is likely to be sufficient to achieve the required demand reductions. In Levels Three and Four, those strategies, plus the use of rate increases with stronger price signals for over-allocation use, could be used to achieve further demand reductions. In all cases, adjustments to the allocations, tiers and rates will be at the discretion of the Board, and will be based on an assessment of the supply shortage, customer response and need for demand reductions.

Enforcement Mechanism:

Application of any or a combination of the allocation adjustment strategies will place customers into the higher usage tiers, which acts as a reporting and enforcement mechanism by creating a strong financial incentive for customers to reduce demands. The higher rates for above allocation use reflect and incorporate the cost of additional demand management measures, as well as the additional cost to IRWD of acquiring water supplies in a shortage.

Response Measures: Mandatory

Extreme shortage conditions (severe Level Three and Level Four) may require that the District adopt restrictions and/or ration water for health and safety purposes only. A system outage requires a rapid response based on the fact that there is typically a need for more immediate action to deal with an emergency situation. In a system outage emergency, the IRWD Board of Directors will declare a shortage based upon the projected impact of the system outage. Since adjustments to tiers and allocations typically have a time lag in implementation and effect, those measures will be of limited usefulness in a system outage. Therefore, in addition to the measures always in effect, the Board may impose any combination of the following mandatory measures and rationing to alleviate demands.

1. *Potable Irrigation Ban:* Outdoor irrigation would be the initial target for any demand reductions. Demand reductions or eliminations that cannot be met through voluntary measures and financial incentives related to adjustments in the allocation based rate structure, would be attained through a ban on potable irrigation. Table 4 indicates the potential demand reductions that could be

attained from 30%, 60% and complete elimination of outdoor irrigation. This includes dedicated landscapes, mixed use commercial accounts and residential outdoor irrigation.

Table 4: Potential Water Savings (AF) Based on Irrigation Cutbacks:

% Irrigation Cutback	30%	60%	100%
Potable Irrigation	8,980	17,959	29,932
Untreated Irrigation	351	701	1,169
Total	9,330	18,660	31,101

2. *Ban on car-washing and pool-filling:* Demand reductions on car-washing and pool filling that cannot be achieved through voluntary measures and financial incentives related to adjustments in the allocation-based rate structure would be attained through a ban on these actions.

Enforcement Measures

1. *Flow restrictors:* Under extreme conditions of noncompliance, the District could install flow restrictors in individual service lines. Thus, water would be available for drinking, cooking, sponge baths, and slow fill of toilet tanks, but showers and other high volume type uses would not be possible. Under these conditions individual customer reaction would be severe. It would probably be necessary to augment the customer service field service staff to maintain surveillance of these services to assure that unauthorized changes are not made by the customer.
2. *Mandatory Restrictions and Fines:* The District's ability to establish restrictions on water use and to possibly discontinue non-health and safety related service in the case of repeat violators is provided for under the Water Code of the State of California Chapters 3 and 3.5).

PART III: SHORTAGE RESPONSE PLAN

IRWD Water Supply Shortage Levels

In the event of a shortage, IRWD's Board of Directors, in accordance with the provisions of the California Water Code, will determine and declare the shortage level based on an assessment of the available supplies and demands, and may adjust the measures applied based on response in order to achieve the appropriate level of reduction. The following are the levels of shortage which may be declared; the approximate ranges of conditions the levels represent; and the reductions to be achieved:

Level One (Shortage Warning - up to 10% shortage):

Measures selected would be designed to achieve the following objectives:

Objectives:

- Public awareness of water supply situation and conservation opportunities
- Encourage diligent repair of water leaks
- Reduce over-allocation use
- Reduce outdoor over-irrigation

Measures: The measures used in Level One are primarily voluntary actions that modify customer behavior resulting from an enhanced public awareness campaign. In addition, increased outreach targeted toward over-allocation customers to help them identify the source of their overuse, and correct the problem should be sufficient to meet the objectives in Level One.

Costs and Outcomes: Based on 2007 data, a supply shortage of 10% represents approximately 6,600 AF. Information from the 2007 Annual Usage and Tier Break-Down presented in Appendix A indicates that over allocation use (sum of usage in tiers 3-5) accounts for approximately 4,200 AF of non-recycled water usage. Therefore, reducing the over-allocation use, combined with a strong public awareness campaign is expected to be sufficient to achieve the necessary reductions in Level One. The cost to implement voluntary responses is minimal, especially considering the return in reduced demand on the investment. None of the recommended steps would be difficult to implement or administer. The District has the basic infrastructure to pursue most voluntary measures through the Public Affairs and Conservation Departments. However, the District may need to conduct training and adjust its staff resources to effectively provide additional outreach to high usage tier customers.

Level Two (Significant Shortage Condition - 10-25% shortage): Measures selected would be designed to incorporate the objectives listed under Level One, and achieve the following further reduction in use:

Objectives:

- Review of allocations and potential adjustments to reduce outdoor irrigation and agricultural uses by 30%, or a percentage to be specified in the shortage declaration, based on a supply and demand analysis.
- Discourage filling of fountains, pools and water features and other discretionary uses.

Measures: Use of allocation and tier threshold adjustments is expected to be sufficient to achieve the necessary demand reduction objectives in a Level Two shortage. Adjustments to the allocations would employ the demand management/allocation adjustment strategies described in Part II of the document (pages 8-9).

Costs and Outcomes: A Level Two shortage can be offset by voluntary public response and perhaps minimal additional measures, such as reducing water allocations for non-crucial water uses including irrigation demands. Again using the 2007 Annual Usage and Tier Break-Down in Appendix A, a 30% reduction in potable irrigation and agricultural use (potable and untreated) would reduce the demands by an additional 9,300 AF , which combined with the Level One measures would result in a reduction in total demand of approximately 25%. Currently, there are some agricultural users using treated water within IRWD's service area. However, in the future, this demand is anticipated to decline to zero, in which case additional measures and adjustments to the allocations may be necessary to achieve the necessary Level 2 reductions. Depending on the duration and severity of the Level Two shortage, additional temporary staff in water conservation may be required to increase water awareness campaigns and assist customers with reduced irrigation allocations.

Level Three (Severe Shortage Condition - 25-40% shortage): Measures selected would be designed to incorporate the objectives listed under Level Two, and achieve the following further reduction in use.

Objectives:

- Further reductions in and/or eliminations of non-essential uses.
- Further reduce outdoor irrigation and agricultural uses by 60%, or a percentage to be specified in the shortage declaration, based on an analysis of supply and demand.
- Reduction in commercial, industrial and institutional use by 10%, or a percentage to be specified in the shortage declaration, based on an analysis of supply and demand.

- Elimination of specific municipal uses such as street cleaning, hydrant flushing, water-based recreation, etc.
- Activation of a District Task Force to investigate and consult with high-volume users (i.e. public authorities, universities, community associations, etc.) to assist in reducing the water demands of their properties.

Measures: Again, use of the demand management/allocation-based rate adjustment strategies described in Part II of this document (pages 8-9) will be used as a key tool to achieve these objectives. For example, allocations can be reduced to minimize outdoor use and other discretionary uses by excluding those types of uses from the allocation. If necessary, higher rates for over-allocation use could also be adopted, at the discretion of the Board.

Costs and Outcomes: While it is difficult to precisely estimate the total reduction in demand that would be realized from the cumulative measures taken in Levels One, Two and Three, a Level Three shortage condition could entail significant adjustments to allocations and the implementation of mandatory measures to meet the District's reduction needs. In addition to increasing over-allocation tier charges, all common area landscape irrigation and agricultural irrigation should be reduced drastically, or eliminated completely if necessary by adjusting the water use allocations. Reduction of allocations of treated and untreated water serving irrigation (including residential landscapes) by 60% would reduce total demand by approximately 27% (see Appendix A: 2007 Annual Usage and Tier Break-Down). When one meter serves both internal use and landscaping, monitoring and public support would be needed to ensure that no irrigation takes place. An expanded irrigation group would be effective in these efforts. Untreated or recycled water use would only be reduced as needed based on the impact of reduced wastewater flows to recycled water production. Commercial, industrial and institutional customer allocations would be reduced by up to 10%.

Level Four (Crisis Shortage Condition - more than 40% shortage): Measures selected would be designed to incorporate the objectives listed under Level Three, and achieve the following further reductions in use:

Objectives:

- Cease all outdoor water uses for landscape and agriculture, subject to reserved rights relating to local wells.

Measures: A Level Four shortage would likely require further adjustments to allocations and the use of all the Demand Management/Allocation-Based Rates strategies described in Part II (pages 8-9) at the discretion of the Board. In addition, the Board may determine that it is necessary to use mandatory restrictions and possible discontinuation of non-health and safety related service in order to achieve the necessary demand reductions in a Level Four shortage.

Costs and Outcomes: If over-allocation charges had been previously avoided, this tool would almost certainly be needed at this level of supply deficiencies. Increasing the over-allocation tier charge, formulated upon projected penalty charges imposed by outside supply agencies, could be added to the allocation-based tiered rate structure, sufficient to encourage demand reduction to required levels, pay for an equivalent water conservation project designed to meet the required reduction in demands and provide a source of revenue to purchase additional supplies at penalty rates. Over-allocation usage tier charges would also offset the additional administrative and implementation costs to the district including increased staffing to address shortages and enhancement and expansion of the District's water conservation programs and projects.

Appendix A

2007 Annual Treated and Untreated Water Usage and Tier Break-Down

USER DESCRIPTION	TOTAL (AFY)	Allocation Tier (AFY)				
		1	2	3	4	5
AG-TREATED	975	975	0	0	0	0
AG-UNTREATED	6,669	6,669	0	0	0	0
COMM-TREATED	8,431	8,153	163	114		0
COMM-UNTREATED	9	9	0	0	0	0
CONSTRUCTION	882	882	0	0	0	0
INDUST-TREATED	5,273	5,034	50	32	156	0
LAKE	141	141	0	0	0	0
IRRIG-TREATED	6,313	4,442	1,450	81	60	280
IRRIG-UNTREATED	1,164	647	396	22	16	83
MULTI-RESIDENTIAL	10,681	6,608	3,473	425	93	82
PUBLIC AUTHORITY-TREATED	2,652	2,463	26	21	142	0
SINGLE-RESIDENTIAL	23,537	13,138	7,784	1,878	450	287
TOTAL Acre-Feet	66,731	49,166	13,341	2,575	917	733
Percentage	100%	75%	20%	4%	2%	1%

EXHIBIT “B”

RESOLUTION NO. 2016- ____

RESOLUTION OF THE BOARD OF DIRECTORS OF IRVINE RANCH WATER DISTRICT DECLARING WATER SHORTAGE LEVEL ONE (SHORTAGE WARNING)

WHEREAS, Irvine Ranch Water District (“IRWD”) has adopted its Rules and Regulations For Water, Sewer, Recycled Water, and Natural Treatment System Service (the “Rules and Regulations”); and

WHEREAS, Section 15 of the Rules and Regulations, entitled “Water Conservation and Water Supply Shortage Program and Regulations” was adopted by this Board of Directors on February 9, 2009, following a public hearing held upon notice duly given and based on findings of necessity for the adoption of the water conservation program contained in said Section 15 of the Rules and Regulations, set forth as Section 15.1.2 thereof, and Section 15 was duly published following adoption, in accordance with California Water Code Sections 375 and 376; and

WHEREAS, the Board of Directors has adopted an amended Water Shortage Contingency Plan, which serves as the resource and supporting document for the implementation of Section 15 of the Rules and Regulations; and

WHEREAS, Section 15.5 of the Rules and Regulations provides that the Board of Directors may declare levels of shortage and describes four levels of shortage with approximate ranges of conditions and the corresponding water use reductions to be achieved; and

WHEREAS, the Water Shortage Contingency Plan describes an illustrative list of measures that may be implemented in each level, and Section 15 further provides that at the time of declaring a level of shortage conditions, the Board in its discretion will determine the particular response measures that will be implemented, which may include measures in a different level from the level(s) shown or other measures in lieu of or in addition to those measures; and

WHEREAS, the State of California has experienced several years of a severe statewide drought. In April 2015, the Governor issued an Executive Order mandating a 25 percent statewide reduction in urban potable water use from 2013 levels, and in May 2015, the State Water Resources Control Board (SWRCB) adopted a regulatory framework that allocated to the District a mandated reduction amount of 16 percent over the period of June 2015 to February 2016; and

WHEREAS, in response to these actions, the Board declared a Level Two water shortage condition on July 13, 2015. Level Two is a significant water shortage condition, involving a 10 – 25% shortage; and

WHEREAS, in February 2016, the SWRCB modified its regulatory framework, incorporating credits and adjustments for sustainable supplies, growth and climate, and extended it to October 2016. As a result of the adjustments, IRWD’s conservation target was modified to

8 percent effective March 1, 2016; and

WHEREAS, on May 18, 2016, the SWRCB extended the term of the regulation to January 2017, based on continued uncertainty over long-term water supplies in California, and incorporated a new methodology for calculating water reduction targets, under which each agency will self-certify the availability of supplies to meet projected demands, assuming another three dry years, and the percentage gap between supplies and demands in the third year will become the water agency's revised conservation target; and

WHEREAS, under the revised methodology, it is anticipated that IRWD's current target of 8 percent will further lowered; and

WHEREAS, Section 15 of the Rules and Regulations provides that the application of shortage level response measures or restrictions may vary as to type of water service, and that through the declaration of a shortage level, the Board will determine and set forth how and to what extent, if any, the implementation of measures or restrictions on potable water service will be applied to non-potable water services furnished by IRWD; and

WHEREAS, because the water reduction mandate only applies to potable water, IRWD's response measures in this declaration address potable water; and

WHEREAS, Section 15 of the Rules and Regulations is intended to complement and be used in tandem with the allocation-based tiered pricing structure implemented as a demand management measure on an ongoing basis as part of the District's rates and charges; and

WHEREAS, as contemplated in Section 15 of the Rules and Regulations and the Water Shortage Contingency Plan, the Board has, by separate action through the adoption of Resolution No. 2015-17, implemented demand management measures through adjustments in the allocation-based pricing structure, and has proposed to modify these measures for 2016-17 in recognition of the above-recited changes.

NOW, THEREFORE, THE BOARD OF DIRECTORS OF IRVINE RANCH WATER DISTRICT DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:

Section 1. The Board of Directors hereby finds that a shortage warning and low level shortage condition, involving a shortage up to 10%, exists and declares that as of the adoption hereof, a Level One condition shall be in effect.

Section 2. The following measures shall be in effect during the Level One shortage condition, including measures that are always in effect:

Measures Always In Effect

- (a) *Gutter Flooding* - No person shall cause or permit any water furnished to any property within the District to run or to escape from any hose, pipe, valve, faucet, sprinkler, or irrigation device into any gutter or otherwise to escape from the property if such running or escaping can reasonably be prevented.

EXHIBIT "B"

- (b) *Leaks* - No person shall permit leaks of water that he has the authority to eliminate.
- (c) *Washing Hard Surface Areas* - Washing down hard or paved surfaces, including, but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards.
- (d) *Waste* - No person shall cause or permit water under his control to be wasted. Wasteful usage includes, but is not limited to, the uses listed in Section 13(a) of Exhibit 1 to the Memorandum of Understanding Regarding Urban Water Conservation in California, dated December 11, 2002, as amended from time to time, or the counterpart of said list contained in any successor document.
- (e) *Single-pass cooling* - Potable water shall not be used for single-pass cooling.
- (f) *Non-recirculating water features* - Non-recirculating fountains and water features using potable water shall not be used.
- (g) *Ban on car washing* - No person shall use a hose to wash a motor vehicle, except when the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use.

Additional Measures To Be In Effect

- (h) *Drought messaging* - General conservation efforts including dedicated pages on IRWD's website, information provided in the *Pipelines* customer newsletter, and drought-related presentations to groups such as city councils, community associations, chambers of commerce, business groups, and schools.
- (i) *Common interest developments* - No owner of a separate interest within a common interest development shall be fined or assessed by the association for reducing or eliminating the watering of vegetation or lawns, except as permitted by California Civil Code Section 4735.
- (j) *Targeted conservation efforts* - Customers in the inefficient and wasteful tiers will be contacted via letter, telephone, e-mail and other means. On-site assistance/audits will be offered to help identify the source of the over-allocation use and provide recommendations to address the problem.
- (k) *Commercial car washes* - Commercial conveyor and in-bay car wash systems must reuse water if equipped to do so, and shall repair and maintain the equipment in a manner that allows for the operation of the reuse system.

Level Two Measures Rescinded:

- (a) *Ban on discretionary pool-filling* - No person shall drain and re-fill a pool for discretionary maintenance that can be deferred. Filling newly constructed pools and re-filling pools for required, non-discretionary maintenance are not subject to the ban.
- (b) *Survey for leaks* - Each customer shall survey plumbing every two months and eliminate water loss resulting from leaky plumbing fixtures.
- (c) *Showering* - Each person shall restrict showers to five minutes or less; fill the bath tub no more than one-quarter full.

- (d) *Running water* - No person shall run water unnecessarily while shaving, brushing teeth, bathing, preparing food, etc.
- (e) *Washing machines and dishwashers* - Customers shall run only full loads of laundry and dishes.
- (f) *Landscape watering* - Customers shall reduce potable landscape watering by up to 50%.
- (g) *Swimming pools* - Customers shall fill swimming pools to a lower level to minimize water loss due to splashing.
- (h) *Construction activities* - The use of recycled water shall be required for construction activities, including earthwork, dust control and clean-up. IRWD may, at its discretion, waive this requirement if it can be demonstrated to IRWD's satisfaction that compliance with the requirement imposes undue hardship.
- (i) *Street sweeping* - The use of recycled water is required for street sweeping activities. IRWD may, at its discretion, waive this requirement if it can be demonstrated to IRWD's satisfaction that compliance with the requirement imposes undue hardship.

Section 3. The declaration of water shortage condition Level Two, made by this Board of Directors on July 13, 2015, is hereby rescinded and superseded by this declaration.

ADOPTED, SIGNED and APPROVED this ____ day of _____, 2016.

President, IRVINE RANCH WATER
DISTRICT and of the Board of Directors
thereof

Secretary, IRVINE RANCH WATER
DISTRICT and of the Board of Directors
thereof

APPROVED AS TO FORM:
BOWIE, ARNESON, WILES & GIANNONE
IRWD Legal Counsel

June 13, 2016

Prepared by: Tony Mossbarger

Submitted by: Cheryl Clary

Approved by: Paul Cook 

ACTION CALENDAR

INFORMATION SERVICES PROFESSIONAL SERVICES SUPPORT CONTRACT RENEWALS

SUMMARY:

IRWD requires additional resources to supplement existing staff to support and operate the Oracle Financial and Customer Care and Billing (CC&B) systems. In 2015, the Board authorized various outside service providers to assist in providing information technology services through June 2016. The providers include Infosys, the CC&B systems integrator, to provide managed support services; LCS Technologies to provide on-call database administration (DBA) services; and Outsource Technical to provide on-call programming, analysis, project management, and networking services. Staff has identified the need to continue these support services through FY 2017. In addition, staff has identified specific, one-time CC&B-related projects for completion by Infosys.

Staff recommends the Board authorize the General Manager to execute Professional Services Agreements for the period July 1, 2016 to June 30, 2017 as follows:

- Infosys Ltd. in the amount of \$375,000 for support services and one-time special projects;
- LCS Technologies in the amount of \$100,000 for on-call DBA services; and
- Outsource Technical in the amount of \$225,000 for on-call programming, analysis, project management, and networking services.

BACKGROUND:

Infosys Utility Billing Support Services

A utility billing software support services contract was awarded to Infosys in September 2015 in the amount of \$432,000. The contract provided managed support services for the period of August 2015 to June 2016 and one-time projects which staff did not have the existing resources to complete.

Infosys has provided IRWD with managed support services for the Oracle CC&B system since August 2014. It provides highly skilled, experienced, and reliable resources that are very familiar with IRWD's systems, standards, and staff. Infosys has proven that it can provide additional resources to handle urgent projects with tight deadlines, as occurred with rate changes for FY 2015-16.

Staff has identified the need to continue the software support services agreement for the period July 1, 2016 through June 30, 2017. Under the proposed scope, Infosys will provide support for issues involving a high degree of complexity, while District staff will handle routine and less complex requests. The proposed software support services contract will be in effect from July 1, 2016 through June 30, 2017, and is needed due to internal staffing and resource availability. The pricing for managed support services remains the same for this year's proposed contract. The proposed support request is \$28,333 per month for 12 months totaling \$340,000.

In addition to the software support services, staff has identified certain additional one-time projects which staff does not have the existing resources to complete. These projects include:

- Implementation of a new bill format to accommodate sewer loan accounts;
- Programming to automate adjustments for overcharges of late payment charges; and
- Modifications in CC&B required to generate the general ledger transactions resulting from the Oracle Financial Software Upgrade and Project Management implementation project.

The cost of the additional one-time projects totals \$35,000. The scope for the software managed support services and change requests is included in Exhibit "A".

The District is also in the process of redesigning its customer utility bill. The redesign is not yet completed; therefore, the cost of this effort is unknown at this time and is not included in the above scope of work.

Staff recommends that the Board authorize the General Manager to execute a Professional Services Agreement with Infosys Ltd. in the amount of \$375,000.

LCS Technologies On-Call DBA Services

Staff currently utilizes database administration resources from LCS Technologies to provide support for the Oracle Financial System and the Oracle CC&B system. There is an ongoing need for database administration services for IRWD's software systems as a result of several projects the District has recently undertaken, including the Oracle Financial Software Upgrade and Project Management implementation project, as well as smaller scale software and networking projects. In addition, consultants with the required skills could be retained to back fill staff vacancies where staff is working on special projects or for leaves of absence.

LCS Technologies has provided IRWD with database administration support services for the District's Oracle systems since August 2011. It provides highly skilled, experienced, and reliable resources that are very familiar with IRWD's systems, standards, and staff. LCS Technologies has proven that it can provide resources to handle urgent projects with tight deadlines, as has occurred with the Oracle Financial System Software Upgrade and Project Management implementation project. The pricing for database administration support services remains the same for this year's proposed contract.

LCS Technologies' proposal with related fee schedule is attached as Exhibit "B".

Staff recommends that the Board authorize the General Manager to execute a Professional Services Agreement with LCS Technologies in the amount of \$100,000.

Outsource Technical On-Call Programming and Analysis Services

Staff currently utilizes on-call programming and analysis resources from Outsource Technical to provide support to regular positions. There is an ongoing need for programming, analysis, project management, and network assistance related to IRWD's software systems and networks as a result of several major capital projects the District has recently undertaken, including the Oracle Financial System Software Upgrade and Project Management implementation project, as well as smaller scale software and networking projects. In addition, consultants with the required skills could be retained to backfill staff vacancies where staff is working on special projects or for leaves of absence. Staff proposes to retain programmers, analysts, project managers, and network consultants who would provide services on an on-call basis.

Outsource Technical has provided IRWD with on-call programming and analysis services for the District's Oracle systems since November 2012. It provides highly skilled, experienced, and reliable resources that are very familiar with IRWD's systems, standards, and staff. Outsource Technical has proven that it can provide quality resources to handle urgent projects, as has occurred with the Oracle Financial System Software Upgrade and Project Management implementation project. The pricing for on-call programming and analysis services remains the same for this year's proposed contract.

Outsource Technical's proposal with related fee schedule is attached as Exhibit "C".

Staff recommends that the Board authorize the General Manager to execute a Professional Services Agreement with Outsource Technical in the amount of \$225,000.

FISCAL IMPACTS:

These amounts are budgeted in the current fiscal year's budget or in the current expense authorizations of affected projects. The professional services will be charged to the appropriate projects or expense account.

ENVIRONMENTAL COMPLIANCE:

This item is not a project as defined in the California Environmental Quality Act Code of Regulations, Title 14, Chapter 3, Section 15378.

COMMITTEE STATUS:

This item was reviewed by the Finance and Personnel Committee on June 7, 2016.

RECOMMENDATION:

THAT THE BOARD AUTHORIZE THE GENERAL MANAGER TO EXECUTE PROFESSIONAL SERVICES AGREEMENTS FOR THE PERIOD JULY 1, 2016 TO JUNE 30, 2017 WITH INFOSYS LTD. IN THE AMOUNT OF \$375,000 FOR MANAGED SUPPORT SERVICES AND ONE-TIME PROJECTS; LCS TECHNOLOGIES IN THE AMOUNT OF \$100,000 FOR ON-CALL DATABASE ADMINISTRATION SERVICES; AND OUTSOURCE TECHNICAL IN THE AMOUNT OF \$225,000 FOR ON-CALL PROGRAMMING, ANALYSIS, PROJECT MANAGEMENT, AND NETWORKING SERVICES.

LIST OF EXHIBITS:

- Exhibit "A" – Infosys Scope for Managed Support Services and Change Request
- Exhibit "B" – LCS Technologies Proposal for On-Call DBA Services
- Exhibit "C" – Outsource Technical Proposal for On-Call Programing, Analysis, Project Management, and Networking Services

Exhibit "A"

Service Level Agreement

- ☐ Total fixed price for **12 months of L2/L3 support** is **\$340 K USD**
- ☐ Scope and resource loading details are provided below
- ☐ No Enhancements hours
- ☐ Only CC&B Technical Resources are considered for the support. OUBI applications are not considered in the scope.
- ☐ Onsite Office hours : 9:00 AM PST/PDT – 5:30 PM PST/PDT
- ☐ Average 29 hours per ticket for L2/L3 support

	Jul'16	Aug'16	Sep'16	Oct'16	Nov'16	Dec'16	Jan'17	Feb'17	Mar'17	Apr'17	May'17	June'17
Tickets Per Month	20	20	20	20	20	20	20	20	20	20	20	20
Onsite Resource	1	1	1	1	1	1	1	1	1	1	1	1
Offshore Resource	2	2	2	2	2	2	2	2	2	2	2	2

Requirement Details	Onsite Effort (Hrs.)	Off shore Effort (Hrs.)	UAT Onsite (Hrs.)	UAT Off shore (Hrs.)	TOTAL	\$Value	Remark	
Ticket 20886: CCB Analysis for EBS ID/Account Consolidation project. (1) There is the planning of new/adopted values in CC&B for following. -GL Account -Process account -Improvement District These new values will be added with new effective dates. For Improvement District on Premise there will be crossreference provision in CC&B, while generating GL string this crossreference will be used so that corresponding new values can be passed to EBS. (2) By default Future1 will be 16100 instead of 00000 and if any conservation fund comes, use value 17100. These values 16100 and 17100 will be confirmed by business. Below is the list of conservation fund. - Over Allocation Commodity Low Volume - Over Allocation Commodity Inefficient - Over Allocation Commodity Excessive - Over Allocation Commodity Wasteful	24	60	8	16	108	\$6,180.00	Please refer note 28916 under ticket 20886 for more detail	
Miscellaneous Requests	40	40	10	10	100	\$11,700.00		
TOTAL	64	100	18	26	208	\$17,880.00		
TIME LINES: START DATE: 4-APRIL-2016 END DATE 29-APRIL-2016								

Requirement Details (CR 16983)	Onsite Effort (Hrs.)	Off shore Effort (Hrs.)	UAT Onsite (Hrs.)	UAT Off shore (Hrs.)	TOTAL	\$Value	Remark
1. SD#21722 New bill Template for Sewer Loan Accounts - Configuration of new route Type for Loan. - Set up new bill cycle for loan account. - Set up new Postrout batch for Sewer Loan Accounts.(Existing folders will be used for generation of postrout files for loan). - Custom Service Script for postrout batch to fetch loan specific information like Previous month payment details, payment distribution, Previous principal balance, remaining principal balance etc. - A separate xml file will be created for loan. So additional Logic will be required to create separate xml for loan in BILDS batch. (Please note that the loan statment/bill will not be	40	152	24	24	240	\$12,320.00	
2. SD#21768 Fix for over charged LPC adjustments created between Aug-2014 to Mar 6th 2016 Requirement: In a bill, if multiple Late Payment Charges (LPC) are showing up due to non-timely payment of different bills in past, IRWD wants to return penalty part (10%) with interest, if Late Payment Charge is applied 11.5% consecutively. As part of IRWD process, first time 11.5 % (10%Penalty +1.5% interest) should be charged in bill under late payment but after that only 1.5% interest should be charged on bill. So except first time 11.5%, on all other consecutive 11.5% LPC showing up in a bill, 10% amount to be returned with interest. Below are the interest calculation and other rules. (1) For fiscal year 2014(July1)-2015(June30), interest rate will be $0.25 \times 10 / 12 = 0.208$.	16	56	8	16	96	\$4,800.00	
TOTAL	56	208	32	40	336	\$17,120.00	

EXHIBIT B

LCS TECHNOLOGIES INC
YOUR CONSULTING COMPANY FOR ORACLE SOLUTIONS

April 4, 2016

ON CALL SERVICES

Hi Tony,

We very much appreciate your business and support. As you know, LCS Technologies, Inc. (LCS) is your single source provider for Oracle services and software.

We are providing this proposal for On Call Services to assist Irvine Ranch Water District with ongoing support of your Oracle database environments from July 1, 2016 through June 30, 2017.

We are providing this proposal on a Time and Materials basis. We will invoice IRWD for actual time and travel expenses incurred. We understand that most of the work will be provided remotely so travel expenses should be minimal.

Our hourly rates for On Call Services are:

- Project Manager \$150
- Database Administrator \$135

Please let me know if you have any questions.

Sincerely,



Steve Simonetto
CEO
LCS Technologies, Inc.
916-761-4097

YOUR **CONSULTING COMPANY** FOR ORACLE SOLUTIONS

11230 GOLD EXPRESS DRIVE, SUITE 310-140, GOLD RIVER, CA 95670 | 855.277.5527 | LCS-TECHNOLOGIES-INC.COM



April 06, 2016

Irvine Ranch Water District
Attn: Tony Mossbarger, Director of Information Technology
15600 Sand Canyon Avenue
Irvine, CA 92619-7000

Dear Mr. Mossbarger,

Proposal for Information Technology (IT) Professional Services and Consulting

OS Technical (OST) is pleased to submit this proposal to provide Information Technology Professional Services and Consulting in response to your request.

OST is an IT consulting firm providing professional services to both public and private sector clientele. Our emphasis is providing experienced technical consultants on an on-demand basis to support enterprise software projects. OST has been in business for over 18 years and is headquartered in Newport Beach, CA. We have extensive experience providing IT professional services and consultants to numerous clients who continue to do business with us year over year. A few of our clients are Newport Corporation, County of Orange, Irvine Company, PIMCO, Pacific Life and CareMore among others.

OST has been providing IT professional services and consulting for Irvine Ranch Water District (the District) since February 2013 with an emphasis on Oracle R-12 E-Business Suite. During this time, we have provided subject matter expertise to support enterprise software implementations, customizations and quality assurance. Services include:

- Attending project meetings as requested by the District
- Producing monthly billings in a form acceptable to the District
- Participating in weekly project status phone calls with Mohit Saini, the Project Lead for the District
- Providing IT Professional Services and Consulting as requested by the District

Our staff executing the delivery of IT professional services and consulting will consist of:

Mr. Steven Shwam, Senior Account Executive - Mr. Shwam has been with OST for 8 years. He has provided IT professional services and consultants for enterprise software projects for clientele including CareMore, Molina Healthcare, Pacific Dental Services, Forever 21, and ICU Medical among others. Steven will be the primary point of contact for the District, providing delivery of IT professional services and consulting per the direction of the District.

Ms. Janet Chung, Recruiting Manager - Ms. Chung has been working with OST for 5 years. Janet has over 15 years of experience sourcing and screening technical professionals for deployment on enterprise software projects. Her competencies include Oracle EBS, .Net and Java.



Work will be billed at the following rates:

Hourly Rates

Project Management	\$128.00-\$140.00
Oracle DBA	\$120.00-\$135.00
Oracle Analyst	\$115.00-\$125.00
Oracle Developer	\$105.00-\$150.00
Software QA	\$90.00-\$100.00
IT Network & Systems Support	\$65.00-\$85.00

Our project delivery teams are paid current prevailing wage rates and we have insurance coverage that meets or exceeds the minimum District requirements.

If you have any questions, or I can be of further assistance, please call.

Sincerely,

A handwritten signature in cursive script, appearing to read 'S. Shwam'.

Steven Shwam
Sr. Account Executive
OS Technical

June 13, 2016

Prepared by: Tanja Fournier

Submitted by: Robert Jacobson/Cheryl Clary

Approved by: Paul Cook 

ACTION CALENDAR

PROPOSED 2016 GENERAL OBLIGATION BOND AND CERTIFICATES OF PARTICIPATION DEBT ISSUANCE

SUMMARY:

Based on the District's decreasing cash balances, additional planned capital projects and regulations limiting reimbursement of prior Capital Fund and Replacement Fund expenditures, staff recommends the issuance of debt to fund previous and future capital expenditures.

In May 2016, staff and the District's independent registered municipal advisor, Public Financial Management (PFM), developed and distributed a Request for Proposal to a group of pre-qualified underwriters for a bond issuance estimated for September 2016. In connection with the proposed bond issuance and based on the proposals received, staff is recommending the following:

- Issuance of General Obligation Bonds (GO) in an amount not to exceed \$130,000,000;
- Issuance of Certificates of Participation (COPs) for an amount not to exceed \$100,000,000;
- Retention of Bank of America Merrill Lynch and Morgan Stanley as Underwriters for a GO Bond issue;
- Retention of Goldman Sachs as Underwriter for a COPs issue;
- Retention of Orrick, Herrington & Sutcliffe and Bowie, Arneson, Wiles & Giannone as co-bond counsel; and,
- That the Board adopt the Resolution of Intent to Issue Bonds, attached as Exhibit "A".

BACKGROUND:

As of April 30, 2016, IRWD's cash balance was \$237 million, which is a \$207 million (or 46.6%) decrease from December 2010 when the District last issued new money debt (\$175 million Build America Bonds). All bond proceeds from the 2010 bond issuance have since been spent. The District's history of sufficient unrestricted cash balances (liquidity) has been a substantial contributor to its current exemplary credit ratings (AAA, AAA, Aa1). Cash flow projections indicate that further reductions in the District's cash balances will continue. A Summary of Cash Flow Projections, including the recommended debt issuance, is attached as Exhibit "B".

Regulations Regarding Reimbursement of Capital Expenditures:

Public agencies are permitted to issue bonds for reimbursement of previous capital expenditures and to fund future planned capital projects. Treasury regulations provide the District with the ability to reimburse costs for a period of up to three years following expenditures for an open project, and 18-months following Board acceptance of a project.

As was previously discussed with the Committee, in September 2016 the District will begin to lose the ability to reimburse the capital and replacement funds for significant expenditures that have occurred over the past three years. The capital reimbursements are primarily related to the Biosolids project, as well as the Baker Water Treatment facility and other smaller capital projects. A Schedule of Eligible Project Reimbursements, showing available reimbursement amounts by month, is attached as Exhibit "C". Staff will provide additional detail regarding reimbursement restrictions at the meeting.

GO Bond and COPs Issuance:

Staff proposes the District proceed with a GO bond issuance, primarily for new capital reimbursement, with an expected issuance in September 2016 for a maximum of \$130,000,000 million, including cost of issuance. The proposed bond proceeds would reimburse advances from the Capital Fund for expenditures from September 2013 through August 2016.

Staff also proposes issuing COPs to reimburse replacement-related capital expenditures for construction of the District's Biosolids facility. Based on the amount of replacement costs expended to date, as well as remaining projected replacement expenditures for the Biosolids facility, staff proposes an amount not to exceed \$100,000,000, including cost of issuance. Utilizing a COPs structure for Replacement Fund expenditures is necessary because the use of District GO authorization is not permitted to finance replacement project expenditures. The proposed COPs issuance is net of \$11.1 million in contributions to the Replacement Fund received from fiscal year (FY) 2013-2014 through FY 2016-17 from the Biosolids fixed charge paid by District customers during that period. The Summary of Expenditures by Improvement District for the GO and COPs issues is attached as Exhibit "D".

Potential 2010 COPs Refunding Opportunity:

The District currently has \$54.7 million COPs outstanding at a fixed rate of 3.82%. As part of the recommended COPs issuance, staff also recommends including the option to refund all, or a portion of, the District's 2010 COPs fixed rate issue, should favorable economics continue. Based on current economics, a refunding of the issue would generate savings to the District of approximately \$5.0 to \$5.5 million. Staff will continue to monitor potential savings during the new issuance process in order to determine if a refunding continues to provide an economic benefit to the District.

Underwriters and Bond Counsel Selection:

In connection with the GO and COPs issuance, staff received proposals from Bank of America Merrill Lynch (BAML), Goldman Sachs (Goldman), Morgan Stanley, Citigroup, US Bank and Wells Fargo to act in an underwriter capacity for the District's debt issuance. Staff and PFM evaluated the proposals and, based on proposed fee schedules, recommended financing structures, planned financing teams and marketing strategies selected Goldman, BAML and Morgan Stanley, as finalists for debt issuance.

Based on staff's analysis of the proposals, as well as feedback from PFM, staff recommends that BAML and Morgan Stanley be retained as underwriters for the GO bond issue and Goldman Sachs be retained as underwriter for the COP's issue, including any potential refunding of the 2010 COPs issue. A comparison of proposed fee structures including bond takedown, reimbursable expenses and legal costs is attached as Exhibit "E".

Additionally, it is recommended that Orrick, Herrington & Sutcliffe, and Bowie, Arneson, Wiles & Giannone be retained as co-bond counsel.

Proposed Issuance Mode and Structure:

Staff continues to evaluate the proposed debt structuring options available to the District including fixed versus variable mode, senior versus subordinate status and principal repayment schedule.

FISCAL IMPACTS:

A \$130 million GO bond sale will reimburse the Capital Fund for approximately \$123 million of eligible expenditures that have occurred during the three years prior to expected issuance, and a \$100 million COP's issuance will reimburse the Replacement Fund for eligible expenditures that have occurred over the past three years, and remaining estimated expenditures related to the Biosolids project through project completion.

The underwriter fees, expenses, and cost of issuance, including legal, rating agencies, trustee, and printing for the GO bond issue and the COPs issue are estimated at \$563,000 and \$501,000, respectively.

ENVIRONMENTAL COMPLIANCE:

This item is not a project as defined in the California Environmental Quality Act Code of Regulations, Title 14, Chapter 3, Section 15378.

COMMITTEE STATUS:

This item was reviewed by the Finance and Personnel Committee on June 7, 2016.

RECOMMENDATION:

THAT THE BOARD APPROVE THE ISSUANCE OF GENERAL OBLIGATION BONDS IN AN AMOUNT NOT TO EXCEED \$130 MILLION IN EITHER A FIXED OR VARIABLE MODE TO BE DETERMINED PRIOR TO ISSUANCE, AND APPROVE THE ISSUANCE OF CERTIFICATES OF PARTICIPATION IN AN AMOUNT NOT TO EXCEED \$100 MILLION, IN A FIXED OR VARIABLE MODE TO BE DETERMINED PRIOR TO ISSUANCE, AND APPROVE THE RETENTION OF BANK OF AMERICA MERRILL LYNCH AND MORGAN STANLEY AS UNDERWRITERS FOR THE GO BOND ISSUE, AND APPROVE THE RETENTION OF GOLDMAN SACHS AS UNDERWRITER FOR THE COPS ISSUE (TO INCLUDE ANY POTENTIAL REFUNDING OF THE DISTRICT'S 2010 COPS ISSUE), AND RETAIN ORRICK, HERRINGTON & SUTCLIFFE AND BOWIE, ARNESON, WILES & GIANNONE AS CO-BOND COUNSEL; AND ADOPT THE FOLLOWING RESOLUTION BY TITLE:

RESOLUTION NO. 2016 - ____

RESOLUTION OF THE BOARD OF DIRECTORS
OF THE IRVINE RANCH WATER DISTRICT
DECLARING INTENTION TO ISSUE
CONSOLIDATED BONDS OF SAID DISTRICT
(CONSOLIDATED SERIES 2016)

LIST OF EXHIBITS:

Exhibit "A" – Resolution of Intent to Issue Bonds
Exhibit "B" – Summary of Cash Flow Projections
Exhibit "C" – Schedule of Eligible Project Reimbursements
Exhibit "D" – Summary of Project Expenditures and Cost of Issuance
Exhibit "E" – Summary of Underwriter Proposal Fees and Expenses

Exhibit "A"

RESOLUTION NO. 2016-_____

RESOLUTION OF THE BOARD OF DIRECTORS
OF THE IRVINE RANCH WATER DISTRICT
DECLARING INTENTION TO ISSUE
CONSOLIDATED BONDS OF SAID DISTRICT
(CONSOLIDATED SERIES 2016)

WHEREAS, the Board of Directors of Irvine Ranch Water District ("IRWD") deems it proper that bonds of Improvement District Nos. 112, 113, 125, 153, 154, 185, 188, 212, 213, 225, 240, 253, 285 and 288 (the "Included Improvement Districts") be issued as consolidated bonds (hereinafter referred to as the "Bonds") pursuant to Sections 36447 and following of the California Water Code and Section 53541 of the California Government Code; and

WHEREAS, the Board of Directors has been presented with a proposed resolution providing for the issuance of the Bonds.

NOW, THEREFORE, the Board of Directors of the Irvine Ranch Water District DOES HEREBY RESOLVE, DETERMINE and ORDER as follows:

Section 1. The resolution providing for issuance of the Bonds, as presented to this Board of Directors concurrently herewith, is approved as to form. The total principal amount of the Bonds shall be a maximum amount of \$130,000,000, and the Bonds shall be comprised of the proportional amounts of the Included Improvement Districts determined as provided therein. The Bonds shall constitute the consolidated several general obligations of the Included Improvement Districts and shall, in addition, constitute obligations of IRWD payable from certain net revenues and secured by a pledge of revenues of IRWD as provided in said resolution providing for issuance.

The Bonds, the provisions for payment of and security for the Bonds, the interest rates to be borne by the Bonds, conversion from one interest rate determination method to another, purchase, remarketing, and other features of the Bonds shall be conceptually as set forth in the proposed form of the resolution providing for issuance of the Bonds and in an indenture to be entered into in connection with the negotiated sale of the Bonds. The indenture or the form thereof shall be adopted concurrently with the adoption of the resolution providing for issuance.

Section 2. Monday, the 25th day of July, 2016, at the hour of 5:00 p.m. of said day (or as soon thereafter as is reasonably practicable) in the Board of Directors Room of Irvine Ranch Water District, 15600 Sand Canyon Avenue, Irvine, California, be and the same are hereby fixed by this Board of Directors as the time and place for a hearing on the proposed resolution of issuance.

Section 3. At the time and place fixed in Section 2 or at any time or place to which such hearing may be continued, any person interested, including any person owning land in the Included Improvement Districts or any person otherwise interested in the Bonds as consolidated bonds, may appear and be heard concerning any matter set forth in this resolution declaring

intention and the proposed resolution of issuance or any matters material thereto, including the question of whether the burden on the lands of any of the Included Improvement Districts would be increased over the burden that would be borne by such Included Improvement District were its bonds sold separately.

Section 4. The Secretary is directed to publish notice of such hearing by publishing a copy of this resolution declaring intention once a week for two successive weeks pursuant to Section 6066 of the California Government Code, in a newspaper of general circulation published in Orange County. The first publication shall be at least fourteen (14) days prior to the time fixed for the hearing. The Secretary is further directed to post a copy of this resolution declaring intention in three public places within each Included Improvement District for at least fourteen (14) days prior to the time fixed for the hearing. To the extent the Secretary has, prior to adoption hereof, accomplished any of the publications or postings directed by this Section, the same are hereby ratified.

ADOPTED, SIGNED AND APPROVED this _____ day of _____, 2016.

President/Vice President
IRVINE RANCH WATER DISTRICT
and of the Board of Directors
thereof

Secretary/Assistant Secretary
IRVINE RANCH WATER DISTRICT
and of the Board of Directors
thereof

APPROVED AS TO FORM:

BOWIE, ARNESON,
WILES & GIANNONE
Legal Counsel - IRWD

By _____

BAWG/ 00191143/ 053116

RESOLUTION NO. __

RESOLUTION OF THE BOARD OF DIRECTORS OF
THE IRVINE RANCH WATER DISTRICT PROVIDING
FOR THE ISSUANCE OF CONSOLIDATED BONDS
OF SAID DISTRICT, APPROVING DOCUMENTS AND
AUTHORIZING AND RATIFYING CERTAIN ACTIONS
(CONSOLIDATED SERIES 2016)

WHEREAS, the below-recited authorized, unissued bonds of improvement districts of Irvine Ranch Water District ("IRWD") may be issued as consolidated bonds;

IMPROVEMENT DISTRICT NO. 112

WHEREAS, pursuant to Resolution No. 2008-29 adopted by the Board of Directors of IRWD on May 27, 2008, a special election was conducted in Improvement District No. 112 of IRWD on August 26, 2008, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 112 thereof in the amount of \$28,512,300 at a maximum interest rate of twelve percent (12%) per annum, to acquire and construct works and facilities for the acquisition, collection, storage, distribution and treatment of water and water rights, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment, urban runoff diversion and treatment systems, and all necessary equipment and property therefor, reconstruction, replacements and additions to said facilities, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, all in accordance with the Plan of Works for Improvement District No. 112?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$28,512,300, the principal amounts of \$1,370,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A," \$1,370,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" and \$3,000,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, SERIES 2010B have been issued and sold;

IMPROVEMENT DISTRICT NO. 113

WHEREAS, pursuant to Resolution No. 2004-21 adopted by the Board of Directors of IRWD on June 14, 2004, a special election was conducted in Improvement District No. 113 of IRWD on August 31, 2004, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 113 thereof in the amount of \$25,769,500 at a maximum interest rate of twelve percent (12%) per annum, to acquire and construct works and facilities for the acquisition, collection, storage, distribution and treatment of water and water rights, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment, urban runoff diversion and treatment systems, and all necessary equipment and property therefor, reconstruction, replacements and additions to said facilities, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, all in accordance with the Plan of Works for Improvement District No. 113?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$25,769,500, the principal amount of \$1,500,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2006," \$5,000,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2007," \$1,500,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A," \$1,500,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" and \$5,300,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, SERIES 2010B have been issued and sold;

IMPROVEMENT DISTRICT NO. 125

WHEREAS, by Resolution No. 2013-43 adopted on November 11, 2013, and pursuant to Section 36454 *et seq.* of the California Water Code, the Board of Directors of IRWD ordered the consolidation of Improvement District Nos. 102, 105, 106, 121, 130, 135, 140, 161, 182, 184 and 186, as modified by certain annexations and detachments previously ordered by the Board, into a single improvement district designated "Improvement District No. 125," and the authorized but unissued bonds of Improvement District Nos. 102, 105, 106, 121, 130, 135, 140, 161, 182, 184 and 186 permitted pursuant to Section 36438 of the California Water Code to be issued and sold as the bonds of Improvement District No. 125 totaled \$xxxxxxxxxxxxxx upon said consolidation;

WHEREAS, the bonds permitted to be issued and sold as the bonds of Improvement District No. 125 consist of authorized but unissued bonds of Improvement District Nos. 106, 121, 130, 140, 161, 182, 184 and 186, as recited below (at the time of said consolidation no

unissued amounts remained from the authorizations for Improvement District Nos. 102, 105 and 135);

Improvement District No. 106

WHEREAS, pursuant to Resolution No. 1976-70 adopted by the Board of Directors of IRWD on August 20, 1976, a special election was conducted in Improvement District No. 106 of IRWD on November 2, 1976, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 106 thereof in the amount of \$22,895,000 at a maximum interest rate of eight percent (8%) per annum, to acquire and construct works and facilities for the acquisition, collection, storage and distribution of water and water rights, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, the payment of operating and other costs of the District and the establishment of all or part of the bond reserve fund out of the proceeds of the sale of said bonds, all in accordance with the Plan of Works for Improvement District No. 106?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$22,895,000, the principal amounts of \$4,475,000 of bonds designated "WATERWORKS BONDS, ELECTION 1976, SERIES A, OF IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 106," \$1,505,000 of bonds designated "WATERWORKS BONDS, ELECTION 1976, SERIES B, OF IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 106," \$1,170,000 of bonds designated "WATERWORKS BONDS, ELECTION 1976, SERIES C, OF THE IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 106," \$3,570,000 of bonds designated "WATERWORKS BONDS, ELECTION 1976, SERIES D, OF THE IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 106," \$10,670,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1984" and \$1,179,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1985" have been issued and sold prior to the above-recited consolidation of Improvement District No. 106 into Improvement District No. 125;

Improvement District No. 121

WHEREAS, pursuant to Resolution No. 1978-58 adopted by the Board of Directors of IRWD on April 17, 1978, a special election was conducted in Improvement District No. 121 of

IRWD on June 19, 1978, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 121 thereof in the amount of \$35,437,000 at a maximum interest rate of eight percent (8%) per annum, to acquire and construct works and facilities for the acquisition, collection, storage and distribution of water and water rights, to enable said District to utilize a water supply furnished under the State Water Resources Development System (commonly known as the "State Water Project") pursuant to Section 12944.5 of the Water Code of the State of California, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, and the payment of operating and other costs of the District and the establishment of all or part of the bond reserve fund out of the proceeds of the sale of said bonds, all in accordance with the Plan of Works for Improvement District No. 121?

WHEREAS, more than one-half of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$35,437,000, the principal amounts of \$1,350,000 of bonds designated "WATERWORKS BONDS, ELECTION 1978, SERIES A, OF IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 121," \$9,850,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1984," \$782,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1985," \$2,900,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A," \$2,900,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" and \$14,400,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, SERIES 2010B" have been issued and sold prior to the above-recited consolidation of Improvement District No. 121 into Improvement District No. 125;

Improvement District No. 130 (consolidated)

WHEREAS, by Resolution No. 2008-56 adopted on October 13, 2008, the Board of Directors of IRWD ordered the consolidation of Improvement District Nos. 103 and 109 into a single improvement district designated "Improvement District No. 130," and pursuant to Section 36438 of the California Water Code, the authorized but unissued bonds of Improvement District Nos. 103 and 109, recited as follows, permitted to be issued and sold as the bonds of Improvement District No. 130 totaled \$72,304,000 upon said consolidation;

WHEREAS, pursuant to Resolution No. 1977-37 adopted by the Board of Directors of IRWD on April 18, 1977, a special election was conducted in Improvement District No. 103 of

IRWD on May 31, 1977, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an additional indebtedness and issue general obligation bonds for Improvement District No. 103 thereof in the amount of \$19,345,000 at a maximum interest rate of eight percent (8%) per annum, to acquire and construct works and facilities for the acquisition, collection, storage and distribution of water and water rights, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, and the payment of operating and other costs of the District and the establishment of all or part of the bond reserve fund out of the proceeds of the sale of said bonds, all in accordance with the Plan of Works for Improvement District No. 103 as heretofore amended by and described in Resolution No. 1977-36 of the Board of Directors of the District?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, pursuant to Resolution No. 1978-59 adopted by the Board of Directors of IRWD on April 17, 1978, a special election was conducted in Improvement District No. 103 of IRWD on June 19, 1978, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 103 thereof in the amount of \$7,381,000 at a maximum interest rate of eight percent (8%) per annum, to acquire and construct works and facilities for the acquisition, collection, storage and distribution of water and water rights, to enable said District to utilize a water supply furnished under the State Water Resources Development System (commonly known as the "State Water Project") pursuant to Section 12944.5 of the Water Code of the State of California, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, and the payment of operating and other costs of the District and the establishment of all or part of the bond reserve fund out of the proceeds of the sale of said bonds, all in accordance with the Supplement to the Plan of Works for Improvement District No. 103?

WHEREAS, more than one-half of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, pursuant to Resolution No. 1978-64 adopted by the Board of Directors of IRWD on April 17, 1978, a special election was conducted in Improvement District No. 109 of IRWD on June 19, 1978, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 109 thereof in the amount of \$73,194,000 at a maximum interest rate of eight percent (8%) per annum, to acquire and construct works and facilities for the acquisition, collection, storage and distribution of water and water rights, to enable said District to utilize a water supply furnished under the State Water Resources Development System (commonly known as the "State Water Project") pursuant to Section 12944.5 of the Water Code of the State of California, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, and the payment of operating and other costs of the District and the establishment of all or part of the bond reserve fund out of the proceeds of the sale of said bonds, all in accordance with the Supplement to the Plan of Works for Improvement District No. 109?

WHEREAS, more than one-half of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of the above-recited authorized amounts of Improvement District Nos. 103 and 109, the following amounts were issued and sold prior to the consolidation of said improvement districts into Improvement District No. 130: (1) Improvement District No. 103 (1977 authorization) - the principal amounts of \$6,530,000 comprising a portion of the bonds designated "WATERWORKS BONDS, SERIES B, OF THE IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 103," \$275,000 of bonds designated "WATERWORKS BONDS, SERIES C, OF THE IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 103," \$4,450,000 of bonds designated "WATERWORKS BONDS, SERIES D, OF THE IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 103," \$3,750,000 of bonds designated "WATERWORKS BONDS, SERIES E, OF THE IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 103" and \$470,000 of bonds designated "WATERWORKS BONDS, ELECTION 1977, SERIES F, OF THE IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 103;" (2) Improvement District No. 103 (1978 authorization) - no bonds of said authorized amount of \$7,381,000 were issued and sold prior to the above-recited consolidation of Improvement District No. 103; (3) Improvement District No. 109 - the principal amounts of \$4,800,000 of bonds designated "WATERWORKS BONDS, ELECTION 1978, SERIES A, OF IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 109," \$1,200,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1984" and \$6,141,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1985;"

WHEREAS, of the authorized and unissued amount of \$72,304,000 of Improvement District No. 130 upon its consolidation, the principal amounts of \$2,650,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A," \$2,650,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" and \$11,700,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, SERIES 2010B" have been issued and sold prior to the above-recited consolidation of Improvement District No. 130 into Improvement District No. 125;

Improvement District No. 140 (consolidated)

WHEREAS, by Resolution No. 1989-59 adopted on August 28, 1989, the Board of Directors of IRWD ordered the consolidation of Improvement District Nos. 104, 141 and 142 into a single improvement district designated "Improvement District No. 140," and pursuant to Section 36438 of the California Water Code, the authorized but unissued bonds of Improvement District Nos. 104, 141 and 142, recited as follows, permitted to be issued and sold as the bonds of Improvement District No. 140 totaled \$108,773,000 upon said consolidation;

WHEREAS, pursuant to Resolution No. 1972-53 adopted by the Board of Directors of IRWD on November 17, 1972, Improvement District No. 104 of IRWD was formed and general obligation bonds of IRWD for Improvement District No. 104 in the amount of \$32,760,000 were authorized in proceedings taken pursuant to the provisions of Chapter 3.5 of Part 6 of Division 13 of the California Water Code;

WHEREAS, pursuant to Resolution No. 1978-60 adopted by the Board of Directors of IRWD on April 17, 1978, a special election was conducted in Improvement District No. 141 of IRWD on June 19, 1978, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 141 thereof in the amount of \$43,471,000 at a maximum interest rate of eight percent (8%) per annum, to acquire and construct works and facilities for the acquisition, collection, storage and distribution of water and water rights, to enable said District to utilize a water supply furnished under the State Water Resources Development System (commonly known as the "State Water Project") pursuant to Section 12944.5 of the Water Code of the State of California, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, and the payment of operating and other costs of the District and the establishment of all or part of the bond reserve fund out of the proceeds of the sale of said bonds, all in accordance with the Plan of Works for Improvement District No. 141?

WHEREAS, more than one-half of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, pursuant to Resolution No. 1978-61 adopted by the Board of Directors of IRWD on April 17, 1978, a special election was conducted in Improvement District No. 142 of IRWD on June 19, 1978, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 142 thereof in the amount of \$40,899,000 at a maximum interest rate of eight percent (8%) per annum, to acquire and construct works and facilities for the acquisition, collection, storage and distribution of water and water rights, to enable said District to utilize a water supply furnished under the State Water Resources Development System (commonly known as the "State Water Project") pursuant to Section 12944.5 of the Water Code of the State of California, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, and the payment of operating and other costs of the District and the establishment of all or part of the bond reserve fund out of the proceeds of the sale of said bonds, all in accordance with the Plan of Works for Improvement District No. 142?

WHEREAS, more than one-half of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of the above-recited authorized amounts of Improvement District Nos. 104, 141 and 142, the following amounts were issued and sold prior to the consolidation of said improvement districts into Improvement District No. 140: (1) Improvement District No. 104 - the principal amount of \$xxxxxxxx comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1989"; (2) Improvement District No. 141 - the principal amounts of \$2,350,000 of bonds designated "WATERWORKS BONDS, ELECTION 1978, SERIES A, OF IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 141," \$5,250,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1984" and \$642,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1985;" (3) Improvement District No. 142 - the principal amount of \$115,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1984;"

WHEREAS, of the authorized and unissued amount of \$108,773,000 of Improvement District No. 140 upon its consolidation, the principal amounts of \$[11,341,750] comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1989," \$6,000,000 comprising a portion of consolidated bonds

designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1993," \$4,827,320 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1995," \$900,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A" and \$900,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" have been issued and sold prior to the above-recited consolidation of Improvement District No. 140 into Improvement District No. 125;

Improvement District No. 161

WHEREAS, pursuant to Resolution No. 1978-63 adopted by the Board of Directors of IRWD on April 17, 1978, a special election was conducted in Improvement District No. 161 of IRWD on June 19, 1978, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 161 thereof in the amount of \$40,786,000 at a maximum interest rate of eight percent (8%) per annum, to acquire and construct works and facilities for the acquisition, collection, storage and distribution of water and water rights, to enable said District to utilize a water supply furnished under the State Water Resources Development System (commonly known as the "State Water Project") pursuant to Section 12944.5 of the Water Code of the State of California, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, and the payment of operating and other costs of the District and the establishment of all or part of the bond reserve fund out of the proceeds of the sale of said bonds, all in accordance with the Plan of Works for Improvement District No. 161?

WHEREAS, more than one-half of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$40,786,000, the principal amounts of \$735,000 of bonds designated "WATERWORKS BONDS, ELECTION 1978, SERIES A, OF IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 161," \$1,100,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2006," \$1,800,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A;" \$1,800,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" and \$7,000,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, SERIES 2010B" have been issued and sold prior to the above-recited consolidation of Improvement District No. 161 into Improvement District No. 125;

Improvement District No. 182

WHEREAS, pursuant to Resolution No. 1988-11 adopted by the Board of Directors of IRWD on January 25, 1988, a special election was conducted in Improvement District No. 182 of IRWD on March 1, 1988, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 182 thereof in the amount of \$74,653,000 at a maximum interest rate of twelve percent (12%) per annum, to acquire and construct works and facilities for the acquisition, collection, storage and distribution of water and water rights, to enable the Irvine Ranch Water District to utilize a water supply furnished under the State Water Resources Development System (commonly known as the "State Water Project"), including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, all in accordance with the Plan of Works for Improvement District No. 182?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$74,653,000, the principal amounts of \$7,350,000 of bonds designated "WATERWORKS BONDS, ELECTION 1988, SERIES A, OF IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 182," \$357,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2006," \$850,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A," \$850,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" and \$3,000,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2010B" have been issued and sold prior to the above-recited consolidation of Improvement District No. 182 into Improvement District No. 125;

Improvement District No. 184

WHEREAS, pursuant to Resolution No. 1988-30 adopted by the Board of Directors of IRWD on March 14, 1988, a special election was conducted in Improvement District No. 184 of IRWD on April 19, 1988, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 184 thereof in the amount of \$79,065,000 at a maximum interest rate of twelve

percent (12%) per annum, to acquire and construct works and facilities for the acquisition, collection, storage and distribution of water and water rights, to enable the Irvine Ranch Water District to utilize a water supply furnished under the State Water Resources Development System (commonly known as the "State Water Project"), including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, all in accordance with the Plan of Works for Improvement District No. 184?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$79,065,000, the principal amounts of \$600,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A," \$600,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" and \$2,750,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2010B" have been issued and sold prior to the above-recited consolidation of Improvement District No. 184 into Improvement District No. 125;

Improvement District No. 186

WHEREAS, pursuant to Resolution No. 1989-27 adopted by the Board of Directors of IRWD on April 24, 1989, a special election was conducted in Improvement District No. 186 of IRWD on June 13, 1989, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 186 thereof in the amount of \$19,266,000 at a maximum interest rate of twelve percent (12%) per annum, to acquire and construct works and facilities for the acquisition, collection, storage and distribution of water and water rights, to enable the Irvine Ranch Water District to utilize a water supply furnished under the State Water Resources Development System (commonly known as the "State Water Project"), including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, all in accordance with the Plan of Works for Improvement District No. 186?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$19,266,000, the principal amounts of \$5,632,690 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1989," \$500,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A" and \$500,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" have been issued and sold prior to the above-recited consolidation of Improvement District No. 186 into Improvement District No. 125;

WHEREAS, no bonds of the consolidated authorized amount of \$xxxxxxxxxxxxx permitted to be sold as the bonds of Improvement District No. 125 have heretofore been issued and sold;

IMPROVEMENT DISTRICT NO. 153

WHEREAS, pursuant to Resolution No. 78-5-3 adopted by the Board of Directors of the Santiago County Water District ("SCWD") on May 2, 1978, a special election was conducted in Improvement District No. 1 of SCWD on June 13, 1978, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Santiago County Water District incur a bonded indebtedness for Improvement District No. 1 thereof in the sum of \$237,300,000 for the purpose of the acquisition and construction of works and facilities useful or necessary to convey, supply, store or make use of water, including all land, easements, rights of way and other property necessary therefor, and including all engineering, inspection, legal and fiscal agent's fees, costs of the bond election and of the issuance of bonds, and bond interest estimated to accrue during the construction period and for a period not to exceed twelve months after the completion of construction, and all costs and estimated costs incidental to or connected with such acquisition, construction or financing of said facilities?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and SCWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, effective July 1, 2006, SCWD was consolidated with IRWD and IRWD was designated the consolidated successor district, and pursuant to the order of consolidation, the \$237,300,000 authorized but unissued principal amount of SCWD Improvement District No. 1's water bonds were transferred to Improvement District No. 153;

WHEREAS, no bonds of said authorized amount of \$237,300,000 have been issued and sold;

IMPROVEMENT DISTRICT NO. 154

WHEREAS, pursuant to Resolution No. 78-5-11 adopted by the Board of Directors of the Santiago County Water District ("SCWD") on May 2, 1978, a special election was conducted in Improvement District No. 2 of SCWD on June 13, 1978, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Santiago County Water District incur a bonded indebtedness for Improvement District No. 2 thereof in the sum of \$4,760,000 for the purpose of the acquisition and construction of works and facilities useful or necessary to convey, supply, store or make use of water, including all land, easements, rights of way and other property necessary therefor, and including all engineering, inspection, legal and fiscal agent's fees, costs of the bond election and of the issuance of bonds, and bond interest estimated to accrue during the construction period and for a period not to exceed twelve months after the completion of construction, and all costs and estimated costs incidental to or connected with such acquisition, construction or financing of said facilities?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and SCWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, effective July 1, 2006, SCWD was consolidated with IRWD, IRWD was designated the consolidated successor district, and pursuant to the order of consolidation, the \$4,760,000 authorized but unissued principal amount of SCWD Improvement District No. 2's water bonds were transferred to Improvement District No. 154;

WHEREAS, no bonds of said authorized amount of \$4,760,000 have been issued and sold;

IMPROVEMENT DISTRICT NO. 185

WHEREAS, pursuant to Resolution No. 2013-57 adopted by the Board of Directors of IRWD on December 16, 2013, a special election was conducted in Improvement District No. 185 of IRWD on March 4, 2014, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 185 thereof in the amount of \$13,500,000 at a maximum interest rate of twelve percent (12%) per annum, to acquire and construct works and facilities for the acquisition, collection, storage, distribution and treatment of water and water rights, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment, urban runoff diversion and treatment systems, and all necessary equipment and property therefor, reconstruction, replacements and additions to said facilities, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, all in accordance with the Plan of Works for Improvement District No. 185?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, no bonds of said authorized amount of \$13,500,000 have been issued and sold;

IMPROVEMENT DISTRICT NO. 188

WHEREAS, pursuant to Resolution No. 1989-28 adopted by the Board of Directors of IRWD on April 24, 1989, a special election was conducted in Improvement District No. 188 of IRWD on June 13, 1989, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 188 thereof in the amount of \$8,174,000 at a maximum interest rate of twelve percent (12%) per annum, to acquire and construct works and facilities for the acquisition, collection, storage and distribution of water and water rights, to enable the Irvine Ranch Water District to utilize a water supply furnished under the State Water Resources Development System (commonly known as the "State Water Project"), including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, all in accordance with the Plan of Works for Improvement District No. 188?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$8,174,000, the principal amounts of \$2,957,010 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1989," \$90,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A," \$90,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" and \$1,300,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2010B" have been issued and sold;

IMPROVEMENT DISTRICT NO. 212

WHEREAS, pursuant to Resolution No. 2008-30 adopted by the Board of Directors of IRWD on May 27, 2008, a special election was conducted in Improvement District No. 212 of

IRWD on August 26, 2008, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 212 thereof in the amount of \$108,711,800 at a maximum interest rate of twelve percent (12%) per annum, to acquire and construct works and facilities for the collection, treatment and disposal of sewage and the storage and distribution of reclaimed water, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, reconstruction, replacements and additions to said facilities, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, all in accordance with the Plan of Works for Improvement District No. 212?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$108,711,800, the principal amounts of \$3,650,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A," \$3,650,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" and \$8,400,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2010B" have been issued and sold;

IMPROVEMENT DISTRICT NO. 213

WHEREAS, pursuant to Resolution No. 2004-22 adopted by the Board of Directors of IRWD on June 14, 2004, a special election was conducted in Improvement District No. 213 of IRWD on August 31, 2004, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 213 thereof in the amount of \$87,647,500 at a maximum interest rate of twelve percent (12%) per annum, to acquire and construct works and facilities for the collection, treatment and disposal of sewage and the storage and distribution of reclaimed water, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, reconstruction, replacements and additions to said facilities, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, all in accordance with the Plan of Works for Improvement District No. 213?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$87,647,500, the principal amount of \$11,100,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2006," \$6,300,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2007," \$3,200,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A" and \$3,200,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" have been issued and sold;

IMPROVEMENT DISTRICT NO. 225

WHEREAS, by Resolution No. 2013-43 adopted on November 11, 2013, and pursuant to Section 36454 *et seq.* of the California Water Code, the Board of Directors of IRWD ordered the consolidation of Improvement District Nos. 2(202), 206, 221, 230, 235, 250, 261, 282, 284 and 286, as modified by certain annexations and detachments ordered by the Board, into a single improvement district designated "Improvement District No. 225," and the authorized but unissued bonds of Improvement District Nos. 2(202), 206, 221, 230, 235, 250, 261, 282, 284 and 286 permitted to be issued and sold pursuant to Section 36438 of the California Water Code as the bonds of Improvement District No. 225 totaled \$406,892,840 upon said consolidation;

WHEREAS, the bonds permitted to be issued and sold as the bonds of Improvement District No. 225 consist of authorized but unissued bonds of Improvement District Nos. 2(202), 206, 221, 230, 250, 261, 282, 284 and 286, as recited below (at the time of said consolidation no unissued amount remained from the authorization for Improvement District No. 235);

Improvement District No. 2(202)

WHEREAS, pursuant to Resolution No. 1971-xx adopted by the Board of Directors of IRWD on June 18, 1971, Improvement District No. 2^a of IRWD was formed and general obligation bonds of IRWD for Improvement District No. 2 in the amount of \$30,316,000 were authorized in proceedings taken pursuant to the provisions of Chapter 3.5 of Part 6 of Division 13 of the California Water Code;

WHEREAS, of said authorized amount of \$30,316,000, the principal amounts of \$8,160,000 of bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 2, 1971 SEWER BONDS, SERIES A," \$8,370,000 of bonds

^a Subsequently renamed Improvement District No. 2(202).

designated "BONDS OF IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 2, 1971 SEWER BONDS, SERIES B" and \$11,880,000 of bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 2, 1971 SEWER BONDS, SERIES C;"

Improvement District No. 206

WHEREAS, pursuant to Resolution No. 1975-46 adopted by the Board of Directors of IRWD on July 17, 1975, a special election was conducted in Improvement District No. 206 of IRWD on November 4, 1975, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: : Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 206 thereof in the amount of \$69,665,000, at a maximum interest rate of eight percent (8%) per annum, to acquire and construct works and facilities for the collection, treatment, and disposal of sewage, including dams, reservoirs, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, the payment of operating and other costs of the District and the establishment of all or part of the bond reserve fund out of the proceeds of the sale of said bonds, all in accordance with the Plan of Works for Improvement District No. 206?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$69,665,000, the principal amounts of \$4,515,000 of bonds designated "SEWER BONDS, ELECTION 1975, SERIES A, OF THE IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 206," \$3,925,000 of bonds designated "SEWER BONDS, ELECTION 1975, SERIES B, OF THE IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 206," \$2,135,000 of bonds designated "SEWER BONDS, ELECTION 1975, SERIES C, OF THE IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 206," \$2,405,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1984" and \$4,937,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1985" have been issued and sold prior to the above-recited consolidation of Improvement District No. 206 into Improvement District No. 225;

Improvement District No. 221

WHEREAS, pursuant to Resolution No. 1978-65 adopted by the Board of Directors of IRWD on April 17, 1978, a special election was conducted in Improvement District No. 221 of IRWD on June 19, 1978, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 221 thereof in the amount of \$50,452,000 at a maximum interest rate of eight percent (8%) per annum, to acquire and construct works and facilities for the collection, treatment and disposal of sewage, and the acquisition, storage and treatment of reclaimed water, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, and the payment of operating and other costs of the District and the establishment of all or part of the bond reserve fund out of the proceeds of the sale of said bonds, all in accordance with the Plan of Works for Improvement District No. 221?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$50,452,000, the principal amounts of \$8,980,000 of bonds designated "SEWER BONDS, ELECTION 1978, SERIES A, OF IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 221," \$11,660,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1984," \$8,314,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1985," \$7,800,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A," \$7,800,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" and \$5,900,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2010B" have been issued and sold prior to the above-recited consolidation of Improvement District No. 221 into Improvement District No. 225;

Improvement District No. 230 (consolidated)

WHEREAS, by Resolution No. 2008-56 adopted on October 13, 2008, the Board of Directors of IRWD ordered the consolidation of Improvement District Nos. 3(203) and 290 into a single improvement district designated "Improvement District No. 230," and pursuant to Section 36438 of the California Water Code, the authorized but unissued bonds of Improvement District Nos. 3(203) and 290, recited as follows, permitted to be issued and sold as the bonds of Improvement District No. 230, totaled \$132,651,000 upon said consolidation;

WHEREAS, pursuant to Resolution No. 1971-25 adopted by the Board of Directors of IRWD on June 18, 1971, Improvement District No. 3^b of IRWD was formed and general obligation bonds of IRWD for Improvement District No. 3 in the amount of \$23,630,000 were

^b

Subsequently renamed Improvement District No. 3(203).

authorized in proceedings taken pursuant to the provisions of Chapter 3.5 of Part 6 of Division 13 of the California Water Code;

WHEREAS, pursuant to Resolution No. 1978-66 adopted by the Board of Directors of IRWD on April 17, 1978, a special election was conducted in Improvement District No. 3(203) of IRWD on June 19, 1978, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 3(203) thereof in the amount of \$56,662,000 at a maximum interest rate of eight percent (8%) per annum, to acquire and construct works and facilities for the collection, treatment and disposal of sewage, and the acquisition, storage and treatment of reclaimed water, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, and the payment of operating and other costs of the District and the establishment of all or part of the bond reserve fund out of the proceeds of the sale of said bonds, all in accordance with the Supplement to the Plan of Works for Improvement District No. 3(203)?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, pursuant to Resolution No. 1978-71 adopted by the Board of Directors of IRWD on April 17, 1978, a special election was conducted in Improvement District No. 290 of IRWD on June 19, 1978, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 290 thereof in the amount of \$78,231,000 at a maximum interest rate of eight percent (8%) per annum, to acquire and construct works and facilities for the collection, treatment and disposal of sewage, and the acquisition, storage and treatment of reclaimed water, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, and the payment of operating and other costs of the District and the establishment of all or part of the bond reserve fund out of the proceeds of the sale of said bonds, all in accordance with the Plan of Works for Improvement District No. 290?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of the above-recited authorized amounts of Improvement District Nos. 3(203) and 290, the following amounts were issued and sold prior to the consolidation of said improvement districts into Improvement District No. 230: (1) Improvement District No. 3(203) (1971 authorization) - the principal amount of \$9,090,000 of bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 3, 1971 SEWER BONDS, SERIES A;" (2) Improvement District No. 3(203) (1978 authorization) - the principal amounts of \$1,285,000 of bonds designated "SEWER BONDS, ELECTION 1978, SERIES A, OF IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 3(203)" and \$3,475,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1984;" and (3) Improvement District No. 290 - the principal amounts of \$905,000 of bonds designated "SEWER BONDS, ELECTION 1978, SERIES A, OF THE IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 290," \$500,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1984," \$7,422,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1985" and \$3,195,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1991" were issued and sold prior to the below-recited consolidation of Improvement District No. 290;

WHEREAS, of the authorized and unissued amount of \$132,651,000 of Improvement District No. 230 upon its consolidation, the principal amounts of \$8,350,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A;" \$8,350,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B," and \$21,200,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2010B" have been issued and sold prior to the above-recited consolidation of Improvement District No. 230 into Improvement District No. 225;

Improvement District No. 250

WHEREAS, pursuant to Resolution No. 1978-69 adopted by the Board of Directors of IRWD on April 17, 1978, a special election was conducted in Improvement District No. 250 of IRWD on June 19, 1978, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 250 thereof in the amount of \$286,727,000 at a maximum interest rate of eight percent (8%) per annum, to acquire and construct works and facilities for the collection, treatment and disposal of sewage, and the acquisition, storage and treatment of reclaimed water, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts

with other agencies, and the payment of operating and other costs of the District and the establishment of all or part of the bond reserve fund out of the proceeds of the sale of said bonds, all in accordance with the Plan of Works for Improvement District No. 250?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$286,727,000, the principal amounts of \$7,590,000 of bonds designated "SEWER BONDS, ELECTION 1978, SERIES A, OF THE IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 250," \$7,980,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1984," \$29,526,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1985," \$10,217,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1991," \$9,900,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1993," \$15,071,160 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1995," \$19,884,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2006," \$42,000,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2007," \$15,650,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A," \$15,650,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" and \$43,150,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, SERIES 2010B have been issued and sold prior to the above-recited consolidation of Improvement District No. 250 into Improvement District No. 225;

Improvement District No. 261

WHEREAS, pursuant to Resolution No. 1978-70 adopted by the Board of Directors of IRWD on April 17, 1978, a special election was conducted in Improvement District No. 261 of IRWD on June 19, 1978, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 261 thereof in the amount of \$46,364,000 at a maximum interest rate of eight percent (8%) per annum, to acquire and construct works and facilities for the collection, treatment and disposal of sewage, and the acquisition, storage and treatment of reclaimed water, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts

with other agencies, and the payment of operating and other costs of the District and the establishment of all or part of the bond reserve fund out of the proceeds of the sale of said bonds, all in accordance with the Plan of Works for Improvement District No. 261?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$46,364,000, the principal amounts of \$1,275,000 of bonds designated "SEWER BONDS, ELECTION 1978, SERIES A, OF IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 261," \$1,100,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2006," \$3,950,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A," \$3,950,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" and \$17,100,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2010B" have been issued and sold prior to the above-recited consolidation of Improvement District No. 261 into Improvement District No. 125;

Improvement District No. 282

WHEREAS, pursuant to Resolution No. 1988-13 adopted by the Board of Directors of IRWD on January 25, 1988, a special election was conducted in Improvement District No. 282 of IRWD on March 1, 1988, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 282 thereof in the amount of \$59,101,000 at a maximum interest rate of twelve percent (12%) per annum, to acquire and construct works and facilities for the collection, treatment and disposal of sewage and the storage and distribution of reclaimed water, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, all in accordance with the Plan of Works for Improvement District No. 282?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$59,101,000, the principal amounts of \$5,000,000 of bonds designated "SEWER BONDS, ELECTION 1988, SERIES A, OF IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 282," \$490,000

comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A," \$490,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" and \$3,500,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2010B" have been issued and sold prior to the above-recited consolidation of Improvement District No. 282 into Improvement District No. 225;

Improvement District No. 284

WHEREAS, pursuant to Resolution No. 1988-14 adopted by the Board of Directors of IRWD on January 25, 1988, a special election was conducted in Improvement District No. 284 of IRWD on March 1, 1988, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 284 thereof in the amount of \$92,590,000 at a maximum interest rate of twelve percent (12%) per annum, to acquire and construct works and facilities for the collection, treatment and disposal of sewage and the storage and distribution of reclaimed water, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, all in accordance with the Plan of Works for Improvement District No. 284?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$92,590,000, the principal amounts of \$7,650,000 of bonds designated "SEWER BONDS, ELECTION 1988, SERIES A, OF IRVINE RANCH WATER DISTRICT FOR IMPROVEMENT DISTRICT NO. 284," \$850,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A," \$850,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" and \$3,500,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2010B" have been issued and sold prior to the above-recited consolidation of Improvement District No. 284 into Improvement District No. 225;

Improvement District No. 286

WHEREAS, pursuant to Resolution No. 1989-29 adopted by the Board of Directors of IRWD on April 24, 1989, a special election was conducted in Improvement District No. 286 of IRWD on June 13, 1989, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 286 thereof in the amount of \$40,531,000 at a maximum interest rate of twelve percent (12%) per annum, to acquire and construct works and facilities for the collection, treatment and disposal of sewage and the storage and distribution of reclaimed water, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, all in accordance with the Plan of Works for Improvement District No. 286?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$40,531,000, the principal amounts of \$250,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A" and \$250,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" have been issued and sold prior to the above-recited consolidation of Improvement District No. 286 into Improvement District No. 225;

WHEREAS, no bonds of the consolidated authorized amount of \$406,892,840 permitted to be sold as the bonds of Improvement District No. 225 have heretofore been issued and sold;

IMPROVEMENT DISTRICT NO. 240

WHEREAS, by Resolution No. 1989-59 adopted on August 28, 1989, the Board of Directors of IRWD ordered the consolidation of Improvement District Nos. 204, 241 and 242 into a single improvement district designated "Improvement District No. 240," and pursuant to Section 36438 of the California Water Code, the authorized but unissued bonds of Improvement District Nos. 204 and 242^c, recited as follows, permitted to be issued and sold as the bonds of Improvement District No. 240 totaled \$35,267,000 upon said consolidation;

WHEREAS, pursuant to Resolution No. 1972-54 adopted by the Board of Directors of IRWD on November 17, 1972, Improvement District No. 204 of IRWD was formed and general obligation bonds of IRWD for Improvement District No. 204 in the amount of \$27,385,000 were authorized in proceedings taken pursuant to the provisions of Chapter 3.5 of Part 6 of Division 13 of the California Water Code;

WHEREAS, pursuant to Resolution No. 1978-68 adopted by the Board of Directors of IRWD on April 17, 1978, a special election was conducted in Improvement District No. 242 of IRWD on June 19, 1978, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

^c No authorized bonds of Improvement District No. 241 remained unissued upon the consolidation of such improvement districts.

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 242 thereof in the amount of \$7,942,000 at a maximum interest rate of eight percent (8%) per annum, to acquire and construct works and facilities for the collection, treatment and disposal of sewage, and the acquisition, storage and treatment of reclaimed water, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, and the payment of operating and other costs of the District and the establishment of all or part of the bond reserve fund out of the proceeds of the sale of said bonds, all in accordance with the Plan of Works for Improvement District No. 242?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of the above-recited authorized amounts of Improvement District Nos. 204, and 242, the following amount was issued and sold prior to the consolidation of said improvement districts into Improvement District No. 240: Improvement District No. 204 - \$60,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1984;"

WHEREAS, subsequent to such consolidation, pursuant to Resolution No. 1989-67 adopted by the Board of Directors of IRWD on October 23, 1989, a special election was conducted in Improvement District No. 240 of IRWD on November 28, 1989, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 240 thereof in the amount of \$79,949,000 at a maximum interest rate of twelve percent (12%) per annum, to be issued in addition to previously authorized bonds to acquire and construct works and facilities for the collection, treatment and disposal of sewage and the storage and distribution of reclaimed water, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, all in accordance with the consolidated and amended Plan of Works for Improvement District No. 240?

WHEREAS, of said authorized and unissued amount of \$115,216,000 of Improvement District No. 240, the principal amounts of \$15,068,550 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1989," \$16,800,000 comprising a portion of consolidated bonds designated "BONDS

OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1993," \$10,050,920 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 1995," \$2,250,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A" and \$2,250,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" have been issued and sold;

IMPROVEMENT DISTRICT NO. 253

WHEREAS, pursuant to Resolution No. 78-5-7 adopted by the Board of Directors of the Santiago County Water District ("SCWD") on May 2, 1978, a special election was conducted in Improvement District No. 1 of SCWD on June 13, 1978, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Santiago County Water District incur a bonded indebtedness for Improvement District No. 1 thereof in the sum of \$121,280,000 for the purpose of the acquisition and construction of works for the collection, treatment and disposal of sewage, waste water, including trunk sewers, sewage treatment, water reclamation facilities, pumping stations, and including all land, easements and other property necessary therefor, and including all engineering, inspection, legal and fiscal agent's fees, costs of the bond election and of the issuance of bonds, and bond interest estimated to accrue during the construction period and for a period not to exceed twelve months after the completion of construction, and all costs and estimated costs incidental to or connected with such acquisition, construction or financing of said facilities?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and SCWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, effective July 1, 2006, SCWD was consolidated with IRWD and IRWD was designated the consolidated successor district, and pursuant to the order of consolidation, the \$121,280,000 authorized but unissued principal amount of SCWD Improvement District No. 1's sewer bonds were transferred to Improvement District No. 253;

WHEREAS, no bonds of said authorized amount of \$121,280,000 have been issued and sold;

IMPROVEMENT DISTRICT NO. 285

WHEREAS, pursuant to Resolution No. 2013-58 adopted by the Board of Directors of IRWD on December 16, 2013, a special election was conducted in Improvement District No. 285 of IRWD on March 4, 2014, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 285 thereof in the amount of \$21,300,000 at a maximum interest rate of twelve percent (12%) per annum, to acquire and construct works and facilities for the collection, treatment and disposal of sewage and the storage and distribution of reclaimed water, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, reconstruction, replacements and additions to said facilities, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, all in accordance with the Plan of Works for Improvement District No. 285?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, no bonds of said authorized amount of \$21,300,000 have been issued and sold;

IMPROVEMENT DISTRICT NO. 288

WHEREAS, pursuant to Resolution No. 1989-30 adopted by the Board of Directors of IRWD on April 24, 1989, a special election was conducted in Improvement District No. 288 of IRWD on June 13, 1989, at which election there was submitted to the qualified voters of said Improvement District the following bond proposition:

BOND PROPOSITION: Shall the Irvine Ranch Water District incur an indebtedness and issue general obligation bonds for Improvement District No. 288 thereof in the amount of \$8,977,000 at a maximum interest rate of twelve percent (12%) per annum, to acquire and construct works and facilities for the collection, treatment and disposal of sewage and the storage and distribution of reclaimed water, including dams, reservoirs, storage tanks, treatment facilities, pipes, pumping equipment and all necessary equipment and property therefor, acquiring funds to fulfill contractual commitments to carry out the powers and purposes of the District contained in contracts, including contracts with other agencies, all in accordance with the Plan of Works for Improvement District No. 288?

WHEREAS, more than two-thirds of the votes cast at said election were cast in favor of incurring said indebtedness and issuing said general obligation bonds and IRWD was authorized to issue bonds in the amount and for the purpose set forth in said proposition;

WHEREAS, of said authorized amount of \$8,977,000, the principal amounts of \$150,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009A" and \$150,000 comprising a portion of consolidated bonds designated "BONDS OF IRVINE RANCH WATER DISTRICT, CONSOLIDATED SERIES 2009B" have been issued and sold;

WHEREAS, the Board of Directors has evaluated the various factors associated with the issuance of portions of the above-described authorized, unissued bonds as consolidated bonds and has found that the sale of the bonds of the Included Improvement Districts, as defined below, as consolidated bonds will not increase the cost that any Included Improvement District will pay for its bonds over the cost it would have paid had its bonds been sold separately;

WHEREAS, the Board of Directors of IRWD deems it proper that portions of the above-described authorized, unissued bonds of the Included Improvement Districts (as hereinafter defined, the "Bonds") be issued as the consolidated several general obligations of the Included Improvement Districts pursuant to Section 36447 *et seq.* of the California Water Code, and pursuant to Section 53541 of the California Government Code;

WHEREAS, pursuant to Water Code Section 36447.15 IRWD is authorized to provide credit enhancement in connection with the issuance or carrying of consolidated general obligation bonds for improvement districts by pledging and applying all or any part of the revenues of IRWD to the payment or security of any or all of the principal, redemption price and purchase price of the bonds and the interest thereon in the manner and upon terms that the Board of Directors may deem advisable;

WHEREAS, it is in the interest of IRWD to secure the timely payment of the principal, redemption price and purchase price of and interest on the Bonds by pledging certain revenues of IRWD;

WHEREAS, pursuant to subdivision (f) of Section 36447.15, the Board of Directors of IRWD has, by adoption of Resolution No. 2010-40, adopted criteria to govern its determinations to use pledges pursuant to Section 36447.15, including evaluation of the use of a pledge in lieu of or in combination with other credit enhancement and liquidity options available to the Board, and has duly considered such criteria in regard to the use of a pledge of certain revenues of IRWD in connection with the proposed Bonds;

WHEREAS, there has been placed on file with the Secretary of IRWD the form of an indenture for the Bonds, pursuant to which the above-described transactions will be accomplished, as well as the form of a contract of purchase relating to the Bonds and this Board desires to approve the forms and authorize the execution thereof;

WHEREAS, the Bonds will be offered for sale using an official statement;

[WHEREAS, it is in the interest of IRWD to secure the timely payment of the principal and purchase price of and interest on the Bonds by obtaining a letter of credit with respect to the Bonds and entering into a reimbursement agreement with the provider of the letter of credit;]

WHEREAS, this Board desires to authorize the selection of the initial trustee [and initial remarketing agent] with respect to the Bonds, and such other agents as may be required or permitted to perform the duties described under the indenture;

WHEREAS, the forms of the indenture and other documents on file with the Secretary as described in this resolution set forth or describe the terms of the Bonds and/or the sale thereof, and the terms pursuant to which the above-described transactions will be accomplished;

WHEREAS, this Board finds that the sale of the Bonds on such terms is in the best interest of IRWD and each of the Included Improvement Districts and finds that the sale of the Bonds as consolidated bonds on such terms will not cause any Included Improvement District to pay more than it would have paid had its bonds been sold separately or had its bonds been sold without such terms;

WHEREAS, this Board desires to authorize the execution and delivery of any and all documents and instruments and the performance of any and all acts and things necessary or proper for carrying out the transactions contemplated by this resolution and the indenture, including, but not limited to, any and all documents, instruments, acts and things necessary or proper for securing and maintaining a rating or ratings with respect to the Bonds.

NOW, THEREFORE, the Board of Directors of IRWD DOES HEREBY RESOLVE, DETERMINE AND ORDER as follows:

Section 1. Pursuant to Division 13 of the California Water Code, consolidated bonds of IRWD (the "Bonds"), shall be issued for the purposes set forth in the recitals hereof in an aggregate principal sum of not to exceed [\$130,000,000] and maturing on or before 40 years from their date, as tax-exempt obligations under the provisions of Sections 103, 148 and 149 of the Internal Revenue Code of 1986. Subject to the preceding limitations in this Section, the Treasurer of IRWD (the "Treasurer") is authorized, at the time of sale of the Bonds, to determine and set forth in a certificate(s) delivered by the Treasurer at the time of closing and delivery of the Bonds the principal amount, dates of maturity and sinking fund payments that will in his judgment optimize the cost of funds to IRWD. Pursuant to Section 36447 *et seq.* of the Water Code, the Bonds shall constitute, when originally issued, the consolidated several general obligations, in the proportions determined by the Treasurer and set forth in a certificate(s) delivered by the Treasurer at the time of closing and delivery of the Bonds, of Improvement District Nos. 112, 113, 125, 153, 154, 185, 188, 212, 213, 225, 240, 253, 285 and 288 (collectively, the "Included Improvement Districts" and each, an "Included Improvement District"), whose remaining authorized amounts of bonds, described in the recitals hereof, shall be reduced by such respective amounts. The Bonds shall in addition constitute obligations of IRWD payable from certain net revenues and secured by a pledge of revenues of IRWD as provided herein.

Section 2. The Bonds shall be designated "BONDS OF IRVINE RANCH WATER DISTRICT, [CONSOLIDATED] SERIES 2016" and further designated as provided in the Indenture (defined below), and the Bonds shall be numbered as determined by the Trustee (defined below). The Bonds shall be of the denominations specified in the Indenture. Pursuant to the determinations by the Treasurer as provided above, the Bonds shall be dated, bear interest at the rates, mature on the dates and in the aggregate principal amounts, be issued in the form, have such sinking fund installments, be subject to redemption, and have such other terms and be in other respects as provided in the Indenture.

Section 3. Pursuant to Section 5050 et seq. of the Government Code, the President of the Board of Directors of IRWD is hereby authorized and directed to sign all of said Bonds by his manual or facsimile signature and the Secretary of IRWD is hereby authorized and directed to affix thereto the seal of IRWD by facsimile or otherwise and to attest thereto by her manual or facsimile signature.

Section 4. The Bonds shall be issued pursuant to an indenture of trust (the "Indenture") by and between IRWD and the Trustee, as defined herein. The Indenture, including the form of the Bonds, is hereby approved in the form on file with the Secretary upon adoption of this resolution, and the President and Secretary of IRWD are authorized and directed to execute it in such form, with such changes, insertions and deletions as are approved by, and on the date for closing and delivery established by, the Treasurer with the concurrence of the President of IRWD, which approval and concurrence will be conclusively evidenced by execution and delivery thereof. The form of the Indenture as so executed and delivered is incorporated herein as of its date, by this reference. This resolution, each Bond and the Indenture shall together constitute the contract between IRWD and the owner of such Bond, and reference is hereby made to this resolution, each Bond and the Indenture for a complete statement of such contract. [] is hereby selected as the initial Trustee (the "Trustee").

Section 5. The Bonds shall be the several consolidated obligations of the Included Improvement Districts in the proportions that the respective amounts of Bonds attributed to each Included Improvement District determined by the Treasurer as set forth in Section 1 hereof bear to the aggregate principal amount of Bonds being issued. The Bonds shall be payable from the following sources: (1) ad valorem assessments on taxable land in the Included Improvement Districts, (2) water and sewer charges which in the discretion of the Board of Directors of IRWD are fixed and collected in the Included Improvement Districts in lieu of assessments, (3) proceeds from the sale of property in the Included Improvement Districts for delinquent assessments, all such amounts referred to in clauses (1), (2) and (3) to be collected and applied as the several obligations of the Included Improvement Districts as provided herein, (4) all moneys and earnings thereon held in the funds and accounts created under the terms of the Indenture (except the Rebate Fund, as that term is defined in the Indenture), and (5) certain net revenues of IRWD as provided in Section 6.

Section 6. IRWD covenants hereby to impose and collect or cause the imposition and collection of the annual assessments in the Included Improvement Districts, or charges for water and sewer service in the Included Improvement Districts in lieu thereof, and delinquent assessments and proceeds from the sale of property therefor, in the amounts necessary to satisfy the requirements stated in the Indenture. The assessments and charges levied upon and collected within any Included Improvement District shall not exceed the amount required to pay such Included Improvement District's proportional share of the requirements stated in the Indenture with respect to principal, purchase price and redemption price of, and interest on, the Bonds, which share shall correspond to the portion of the total par value of the Bonds comprised by the par value included on behalf of such Included Improvement District, as specified in Section 1 hereof. Any provision of this resolution to the contrary notwithstanding, IRWD may, to the extent permitted by law, but except as provided in the next paragraph, shall not be obligated to, apply funds of IRWD to the payment of principal, purchase price and redemption price of, and interest on the Bonds.

IRWD hereby further pledges certain revenues for the payment of the Bonds in accordance with the terms and conditions set forth in such forms of the Indenture.

Section 7. There shall be created and funded pursuant to the Indenture a general obligation bond fund designated “2016 BONDS OF THE IRVINE RANCH WATER DISTRICT, GENERAL OBLIGATION BOND FUND” or as otherwise provided in the Indenture (the “General Obligation Bond Fund”).

Moneys deposited in the General Obligation Bond Fund shall be apportioned within the fund according to each Included Improvement District's proportional share thereof determined as specified in Section 1 hereof. The General Obligation Bond Fund shall be applied for the purposes provided in the Indenture, and all taxable land within each Included Improvement District having a proportional share thereof shall be and remain liable to be assessed for such purposes. The assessments and charges levied upon and collected within any such Included Improvement District shall not exceed the amount required to pay such Included Improvement District's proportional share of the requirements stated in the Indenture with respect to principal, purchase price and redemption price of, and interest on, the Bonds, which share shall correspond to the portion of the total par value of the Bonds comprised by the par value included on behalf of such Included Improvement District. Moneys raised by each Included Improvement District for this purpose shall be deposited to the Included Improvement District's account within the General Obligation Bond Fund and shall be used solely for the purpose of paying such Included Improvement District's proportional share of the requirements stated in the Indenture with respect to principal, purchase price and redemption price of, and interest on, the Bonds.

Section 8. There shall be created such other funds and accounts as are required under the Indenture. Any moneys deposited in any such fund or account that is apportioned to Included Improvement Districts shall be obtained from and apportioned within the fund or account according to each Included Improvement District's proportional share in accordance with Section 36447.1 of the Water Code. Moneys in any fund or account that is apportioned to Included Improvement Districts shall be disbursed only to the extent of the share apportioned therein to the Included Improvement District on whose behalf they are disbursed. Any charges and annual assessments used to establish any fund or account under the Indenture that is apportioned to Included Improvement Districts shall be set aside within such fund or account to the account of the Included Improvement District from which they were obtained.

Section 9. The contract of purchase for the Bonds, by and between IRWD and _____ (the “Underwriter”), to be dated as of such date as may be established by the Treasurer of IRWD, is hereby approved in the form on file with the Secretary upon adoption of this resolution, and the Treasurer of IRWD is authorized and directed to execute it in such form, with such changes, insertions and deletions as are approved by, and on the date for delivery established by, the Treasurer, which approval will be conclusively evidenced by execution and delivery thereof. The form of the contract of purchase relating to the Bonds, as so executed and delivered (the “Contract of Purchase”) is incorporated herein as of its date, by this reference.

Section 10. In accordance with Sections 36447.7 and 36447.9 of the California Water Code, and after review of the terms and provisions of the Bonds (including the terms of the sale

of the Bonds under the proposed form of the Contract of Purchase), the Board of Directors hereby finds that the sale of the Bonds at private sale without advertising for bids will be consistent with the prudent management of IRWD's fiscal affairs and will produce a lower interest cost on the Bonds.

Section 11. The preliminary official statement relating to the Bonds (the "Preliminary Official Statement"), in substantially the form presented to the Board at this meeting, is hereby approved with such changes, insertions and deletions as the Treasurer with the concurrence of the President of IRWD shall approve; such approval shall be conclusively evidenced by the Treasurer's execution and delivery of a "deemed final" certificate under the Securities and Exchange Act of 1934, as amended, with respect to the Preliminary Official Statement, which execution and delivery are hereby authorized and approved. The Board hereby approves the use of the Preliminary Official Statement by the Underwriter in connection with the offering and sale of the Bonds. An official statement relating to the Bonds to be dated the date determined by the Treasurer (the "Official Statement"), in substantially the form of the Preliminary Official Statement with such changes thereto as are necessary or appropriate to reflect the terms of the Bonds and satisfy the requirements of the Contract of Purchase and with such other changes as the Treasurer with the concurrence of the President shall approve (such approval and concurrence to be conclusively evidenced by execution and delivery thereof), is hereby approved, and the Board hereby approves the use of the Official Statement by the Underwriter in connection with the offering and sale of the Bonds, and the Board hereby further approves the use by the Underwriter of any supplement or amendment to the Official Statement which the Treasurer shall determine is necessary so that the Official Statement does not include any untrue statement of a material fact and does not omit to state a material fact necessary to make the statements therein not misleading. The Treasurer of IRWD is hereby authorized and directed to execute the Official Statement and any amendment or supplement thereto, in the name and on behalf of IRWD and thereupon to cause the Official Statement and any such amendment or supplement to be delivered to the Underwriter.

Section 12. The distribution of the Preliminary Official Statement and the Official Statement, inclusive of the above-authorized changes, is hereby authorized.

Section 13. The Treasurer, with the concurrence of the President of IRWD, is hereby authorized and directed to select and appoint, or approve the selection and appointment of, such initial paying agents and other agents as may be required or permitted to perform the duties described under the Indenture.

Section 14. Upon the payment of the purchase price for the Bonds as provided for in the Contract of Purchase, the Trustee is hereby authorized and directed to authenticate and deliver the Bonds as provided in the Contract of Purchase, in the amounts, maturities and denominations as provided in the Indenture.

[Section 15. The reimbursement agreement relating to the Bonds, by and between IRWD and _____, inclusive of the letter of credit described therein, is hereby approved in the form on file with the Secretary upon adoption of this resolution, and the President and Secretary of IRWD are authorized and directed to execute it in such form, with such changes, insertions and deletions as are approved by, and on the date for closing and delivery established by, the Treasurer with the concurrence of the President of

IRWD, which approval will be conclusively evidenced by execution and delivery thereof. The form of the reimbursement agreement, inclusive of the letter of credit, as so executed and delivered is incorporated herein as of its date, by this reference.]

[Section 16. _____ is hereby selected as the initial remarketing agent for the Bonds. The remarketing agreement relating to the Bonds, by and between IRWD and _____, is hereby approved in the form on file with the Secretary upon adoption of this resolution, and the President and Secretary of IRWD are authorized and directed to execute it in such form, with such changes, insertions and deletions as are approved by, and on the date for closing and delivery established by, the Treasurer with the concurrence of the President of IRWD, which approval and concurrence will be conclusively evidenced by execution and delivery thereof. The form of the remarketing agreement relating to the Bonds, as so executed and delivered is incorporated herein as of its date, by this reference.]

[Section 17. When the Bonds shall be in an index tender mode, the Treasurer of the District is authorized for all tender periods to do or cause to be done any and all of the following, if and to the extent required or permitted by the Indenture: to require an unscheduled mandatory tender and establish the date thereof, to rescind an unscheduled mandatory tender, to determine the scheduled mandatory tender date and call protection date for each ensuing tender period, and on behalf of the District in connection with all of the foregoing to give, exercise, make and deliver any notices, directions, elections and requests required or permitted in the Indenture or remarketing agreement to be given, exercised, made or delivered by the District.]

Section 18. The President, the Treasurer, the Secretary and each other officer of IRWD, acting singly, be and each of them hereby is authorized and directed to execute and deliver any and all documents and instruments, and to do and cause to be done any and all acts and things necessary or proper for carrying out the transactions contemplated by this resolution, the Indenture, and the other documents and instruments approved or authorized by this resolution including, but not limited to, continuing disclosure agreements and any and all documents, instruments, acts and things necessary or proper for securing and maintaining a rating or ratings with respect to the Bonds.

Section 19. This resolution shall take effect immediately upon its adoption.

ADOPTED, SIGNED AND APPROVED this _____ day of _____, 2016.

President/Vice President
IRVINE RANCH WATER DISTRICT
and of the Board of Directors
thereof

Secretary/Assistant Secretary

IRVINE RANCH WATER DISTRICT
and of the Board of Directors
thereof

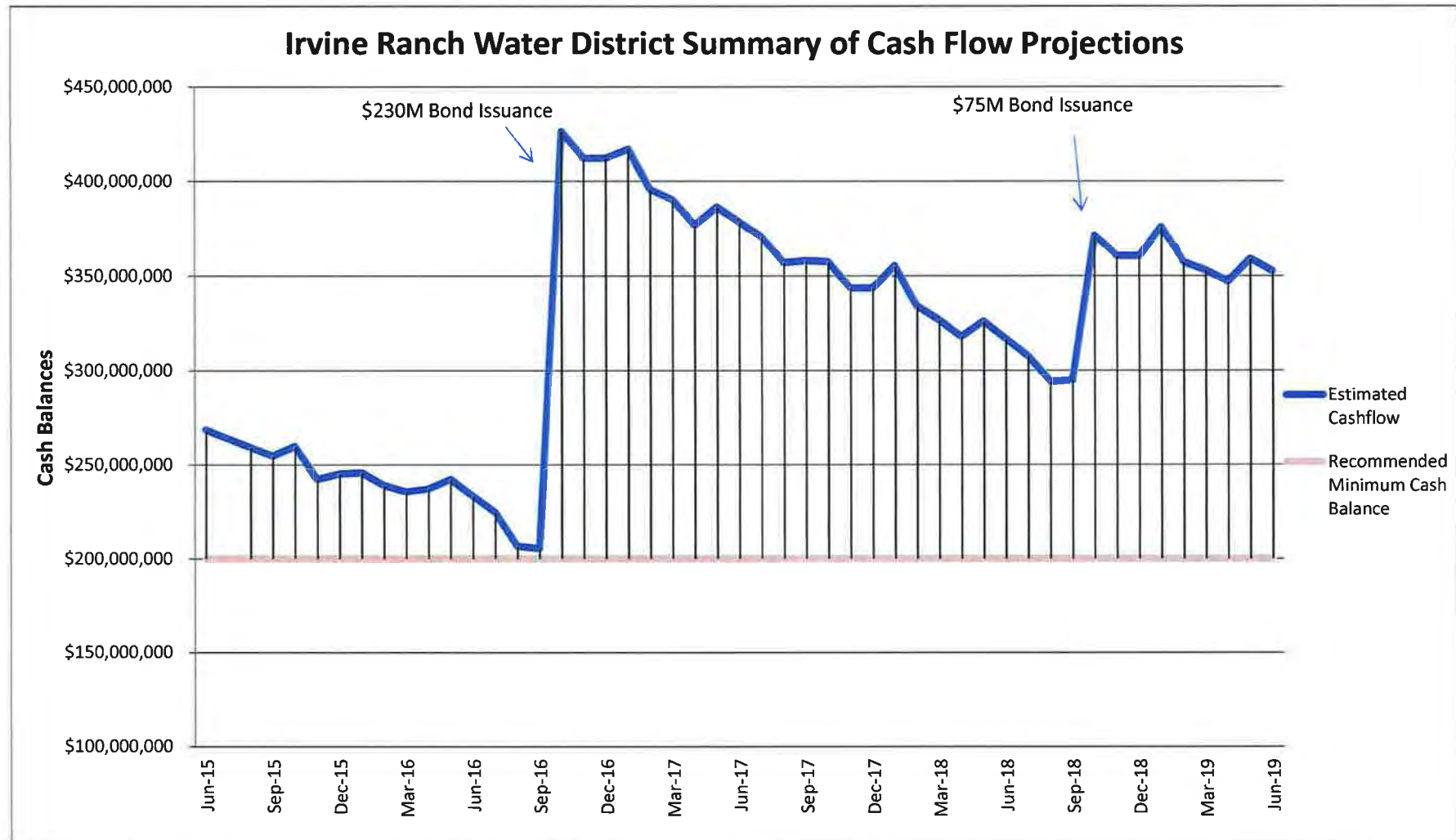
APPROVED AS TO FORM:

BOWIE, ARNESON,
WILES & GIANNONE
Legal Counsel - IRWD

By _____

BAWG/00191105/053116

Exhibit "B"



IRVINE RANCH WATER DISTRICT
Summary of Cash Flow Projections
FY 2016/2017 through FY 2018/2019

2016-2017	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	
	<i>*Estimated</i>												
BEGINNING BALANCE	\$224,514,442	\$206,528,066	\$205,392,327	\$426,470,398	\$412,092,423	\$412,092,423	\$416,857,463	\$395,548,816	\$389,841,087	\$376,842,381	\$386,147,377	\$378,417,291	
ENDING BALANCE	<u>\$206,528,066</u>	<u>\$205,392,327</u>	<u>\$426,470,398</u>	<u>\$412,092,423</u>	<u>\$404,253,855</u>	<u>\$416,857,463</u>	<u>\$395,548,816</u>	<u>\$389,841,087</u>	<u>\$376,842,381</u>	<u>\$386,147,377</u>	<u>\$378,417,291</u>	<u>\$370,649,998</u>	
MONTHLY CHANGES	(\$17,986,376)	(\$1,135,739)	\$221,078,071	(\$14,377,975)	(\$7,838,567)	\$4,765,040	(\$21,308,647)	(\$5,707,729)	(\$12,998,706)	\$9,304,996	(\$7,730,086)	(\$7,767,293)	138,296,989
Notes													
Proposed Bond Issuance			230,000,000										

2017-2018	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	
BEGINNING BALANCE	\$370,649,998	\$356,907,361	\$357,908,442	\$357,353,660	\$343,604,624	\$343,604,624	\$355,264,150	\$333,932,087	\$326,669,681	\$317,835,403	\$326,054,834	\$316,724,136	
ENDING BALANCE	<u>\$356,907,361</u>	<u>\$357,908,442</u>	<u>\$357,353,660</u>	<u>\$343,604,624</u>	<u>\$336,450,293</u>	<u>\$355,264,150</u>	<u>\$333,932,087</u>	<u>\$326,669,681</u>	<u>\$317,835,403</u>	<u>\$326,054,834</u>	<u>\$316,724,136</u>	<u>\$307,365,465</u>	
MONTHLY CHANGES	(\$13,742,637)	\$1,001,082	(\$554,783)	(\$13,749,036)	(\$7,154,331)	\$11,659,526	(\$21,332,063)	(\$7,262,406)	(\$8,834,278)	\$8,219,431	(\$9,330,698)	(\$9,358,671)	(70,438,865)
Notes													
Proposed Bond Issuance													

2018-2019	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	
BEGINNING BALANCE	\$307,365,465	\$294,130,491	\$294,857,948	\$371,346,603	\$360,461,236	\$360,461,236	\$375,998,047	\$357,069,111	\$352,795,316	\$347,068,224	\$358,821,462	\$352,558,820	
ENDING BALANCE	<u>\$294,130,491</u>	<u>\$294,857,948</u>	<u>\$371,346,603</u>	<u>\$360,461,236</u>	<u>\$356,424,328</u>	<u>\$375,998,047</u>	<u>\$357,069,111</u>	<u>\$352,795,316</u>	<u>\$347,068,224</u>	<u>\$358,821,462</u>	<u>\$352,558,820</u>	<u>\$346,385,491</u>	
MONTHLY CHANGES	(\$13,234,974)	\$727,458	\$76,488,654	(\$10,885,367)	(\$4,036,908)	\$15,536,811	(\$18,928,936)	(\$4,273,795)	(\$5,727,092)	\$11,753,239	(\$6,262,643)	(\$6,173,329)	34,983,119
Notes													
Proposed Bond Issuance			75,000,000										

Assumptions:

Revenue does not include sale of Serrano Summit

Debt service assumes \$130 million ad valorem assessment bonds and \$100 million COPS issued in FY 2016-2017 & \$75 Million ad valorem assessment bonds FY 2018-2019

Exhibit "C"

Irvine Ranch Water District Schedule of Eligible Project Reimbursements

MONTH	FY 2013-2014	FY 2014-2015	FY 2015-2016
July	129,150 ⁽¹⁾	2,459,109	2,330,572
August	465,106 ⁽¹⁾	3,496,998	3,471,530
September	2,468,520	1,769,635	2,537,131
October	1,178,783	11,228,693	7,874,038
November	1,711,864	5,182,641	6,536,008
December	3,193,402	9,041,334	12,201,009
January	1,431,225	6,557,447	2,113,906
February	4,792,013	5,679,783	7,280,469
March	1,851,060	7,415,425	4,601,350
April	2,569,416	7,209,251	5,240,096
May	2,999,847	5,848,755	5,417,284 ⁽²⁾
June	8,255,983	12,986,662	5,417,284 ⁽²⁾
Total	30,452,114	78,875,734	65,020,677
Eligible Reimbursements To Date			174,348,525

(1) Expenditures no longer available for reimbursement

(2) Estimate Based on FY 15/16 Ten Month Average

Exhibit "D"

IRVINE RANCH WATER DISTRICT SUMMARY OF EXPENDITURES BY IMPROVEMENT DISTRICT May 31, 2016

General Obligation Bonds

ID	GO Authorization	Eligible Reimbursements Through April 2016	Estimated Additional Expenditures Through August 2016	Total Estimated Reimbursable Expenditures
112	\$22,772,300	\$2,405,892	\$233,868	\$2,639,760
113	10,969,500	1,573,060	319,398	1,892,458
125	322,089,640	17,910,274	2,452,797	20,363,071
153	237,300,000	8,223,438	900,799	9,124,237
154	4,839,000	163,777	21,933	185,710
185	13,500,000	1,657,185	266,297	1,923,482
188	3,736,990	160,002	23,974	183,976
212	93,011,800	10,579,686	1,474,133	12,053,819
213	63,847,500	4,612,955	390,730	5,003,685
225	406,894,840	45,783,385	5,978,766	51,762,151
240	68,796,530	1,379,322	225,196	1,604,518
253	122,283,000	12,849,900	1,661,097	14,510,997
285	21,300,000	1,618,644	299,990	1,918,634
288	8,677,000	151,456	20,156	171,612
Total	\$1,400,018,100	\$109,068,976	\$14,269,134	\$123,338,110
Contingency				\$6,099,565
Estimated Cost of Issuance ⁽¹⁾				\$562,325
Total Estimated Bond Issue				\$130,000,000

(1) Assumes \$130 million par bond amount of bonds issued

Certificates of Participation

Eligible Reimbursements Through April 2016	Potential Biosolids Expenditures between May 2016 and Project Completion	Contribution to Replacement Fund for Biosolids 2014-2017	Total Reimbursable Expenditures	Total COP Issuance
\$54,444,983	\$54,352,531	(\$11,100,000)	\$97,697,514	\$97,697,514
Contingency				1,801,469
Estimated Cost of Issuance ⁽¹⁾				\$501,017
Total Estimated COP's Issue				\$100,000,000

(1) Assumes \$100 million par COPs issued

Exhibit “E”
Proposed Underwriter Expenses

General Obligation Bonds (\$130 Million) ⁽¹⁾						
Underwriting Expenses	Goldman		<i>(Recommended)</i> Bank of America		<i>(Recommended)</i> Morgan Stanley	
	\$/Bond	Total	\$/Bond	Total	\$/Bond	Total
Fixed Rate ⁽²⁾	1.82	236,600.00	1.99	258,700.00	1.99	258,700.00
Variable Rate ⁽²⁾	0.74	96,200.00	1.04	135,200.00	1.54	200,200.00

Certificate of Participation (\$100 Million) ⁽¹⁾						
Underwriting Expenses	<i>(Recommended)</i> Goldman		Bank of America		Morgan Stanley	
	\$/Bond	Total	\$/Bond	Total	\$/Bond	Total
Fixed Rate ⁽³⁾	2.07	207,000.00	2.24	224,000.00	2.24	224,000.00

(1) Assumes 30 yr Level Debt

(2) Assumes \$0.29 for other fees

(3) Assumes \$0.54 for other fees