

AGENDA
IRVINE RANCH WATER DISTRICT BOARD OF DIRECTORS
ADJOURNED REGULAR MEETING

Strategic Planning Workshop
Friday, January 17, 2020, 8:00 a.m.

IRWD District Office
15600 Sand Canyon Avenue, Irvine, CA
First Floor Multi-purpose Room

Roll Call: Steve LaMar, Mary Aileen Matheis, Doug Reinhart, Peer Swan, and John Withers

Discussion Topics with Approximate Schedule:

8:00 – 8:05 a.m.	1. Communications to the Board: Written and Oral	Matheis
8:05 – 9:20 a.m.	2. 2020 IRWD Goals and Target Activities List	All
9:20 – 9:30 a.m.	3. Break	
9:30 – 11:00 a.m.	4. Sewage Treatment Master Plan Update	All
11:00 a.m.	5. Adjourn	

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IRVINE RANCH WATER DISTRICT

Strategic Planning Workshop

January 17, 2020

Draft IRWD 2020 Goals and Target Activities



Summary:

Staff is presenting for the Board's review and comment the draft IRWD 2020 Goals and Target Activities. This document proposes 18 goals for IRWD to accomplish within the next five years. It also summarizes the Target Activities on which IRWD will focus in 2020 in order to advance the completion of these goals. Staff recommends that the Board review and provide input on the draft IRWD Goals and Target Activities for 2020.

IRWD's General Strategic Planning Process:

IRWD develops and adopts strategic planning documents each calendar year. These documents are utilized by staff to prioritize and deploy District resources, as well as to keep the Board apprised of the progress made on each Target Activity. The process utilized to develop these strategic planning documents has been critical to IRWD realizing its Strategic Objectives year after year.

In 2014 the District enhanced its approach to strategic planning, incorporating the effective elements of IRWD's past strategic planning process along with added steps in the process and broader involvement among the IRWD Management Team. A graphical overview of IRWD's Strategic Planning Process is attached as Exhibit "A". The "baseline" documents used for strategic planning – the *District Mission, Vision, and Values Statement* and the *IRWD Strategic Objectives* – are attached as Exhibits "B" and "C", respectively.

One of the added steps in the enhanced planning process was to conduct an in-depth discussion of how conditions that impact the District and the water industry are changing, and what goals IRWD should adopt / modify and prioritize in consideration of these changing conditions. The IRWD Management Team met to develop some initial thoughts on changing conditions for the Board's consideration. While staff will provide more details regarding this discussion at the Workshop, the following is a list of the most prominent changing conditions discussed:

1. Emerging contaminants – specifically PFAS – and the impact on regulations, analytical testing needs, and customer expectations;
2. Increases in legislation & regulation (*water; sewer; power; personnel; governance; transparency; natural treatment system; water quality; financial*) and IRWD's expanding role in development and implementation;
3. Increased integration of water supply solutions;
4. Climate change and its impact on imported water supplies, local groundwater availability, and IRWD's water banking activities;

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5. Response to service interruptions – water and/or energy supplies (Public Safety Power Shut Offs and other outages);
6. Cyber security;
7. Outcomes of current litigation;
8. Dam regulations and community perception;
9. Workforce logistics (e.g., office space, traffic);
10. Increased interaction with homeless population;
11. Tighter job market necessitating increasing training and education for new and existing employees;
12. Leveraging data to enhance IRWD’s analytical and decision-making capabilities;
13. Preserving and enhancing IRWD’s culture as the District grows; and
14. Preparing IRWD for build-out (technically, operationally, and financially).

As shown on the process overview graphic, the changing conditions discussed will drive the discussion on the development of IRWD’s Goals and Target Activities for 2020.

The draft IRWD 2020 Goals and Target Activities is attached as Exhibit “D”. As discussed last year, the Goals identified in this document are intended to serve as a “bridge” between the District’s long-term interests (as articulated by the IRWD Strategic Objectives) and the short-term, i.e., the activities to be conducted during the one-year period covered by the document. The Goals (numbered, but not in order of importance) provide this “bridge” by providing more detail than the Strategic Objectives, but at a high level perspective that reflects a five-year planning horizon.

In order to accomplish each goal, IRWD will typically undertake multiple activities. These are the Target Activities shown beneath each goal on the report. These Target Activities (lettered, but not in order of importance) are shown in an abbreviated format, but with enough specificity to understand and measure the scope of that activity. An expected completion date is provided to show when the activity is targeted for completion.

Recommendation:

That the Board provide input on the format and content of the draft IRWD 2020 Goals and Target Activities and adopt as revised during the workshop.

List of Exhibits:

- Exhibit “A” – IRWD Strategic Planning Process
- Exhibit “B” – IRWD Mission, Vision, and Values Statement (dated February 6, 2014)
- Exhibit “C” – IRWD Strategic Objectives (dated December 17, 2018)
- Exhibit “D” – Draft IRWD 2020 Goals and Target Activities Report

IRWD Strategic Planning Process

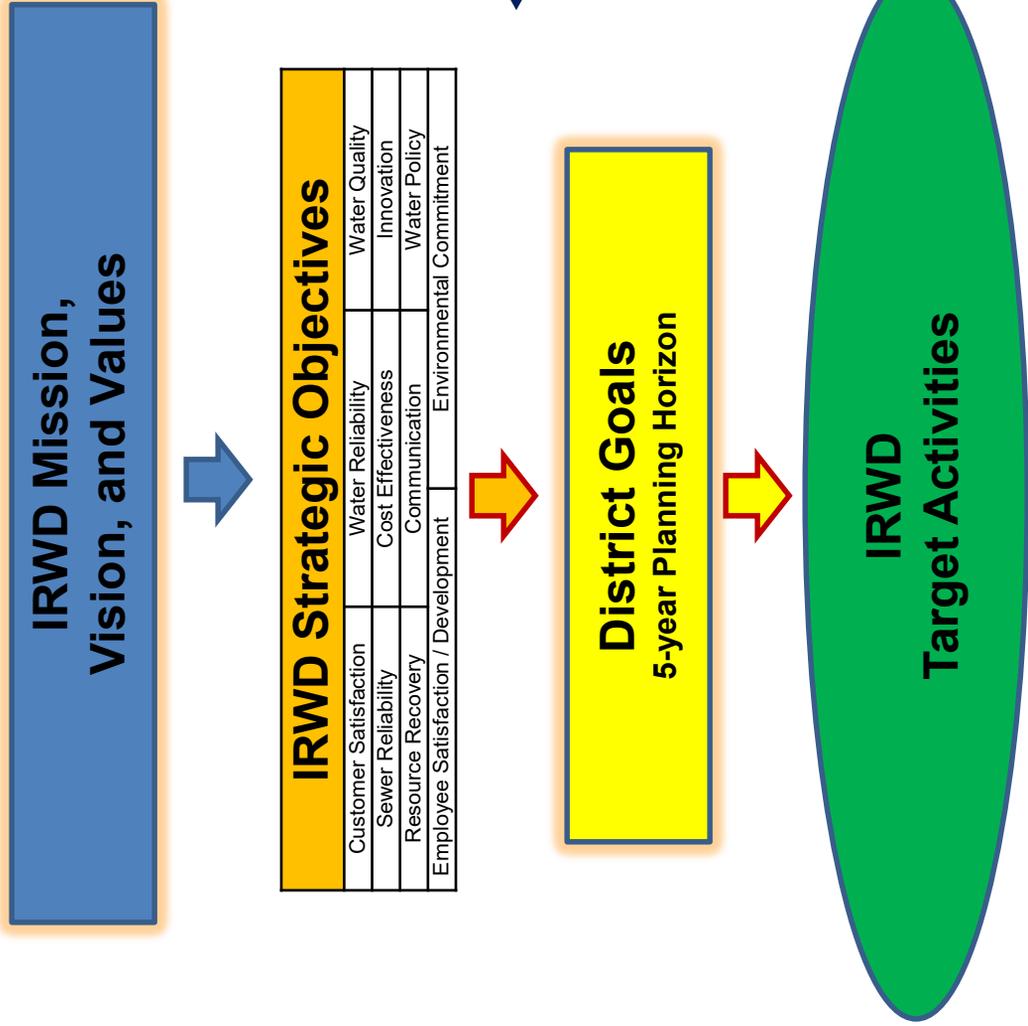


Exhibit "A"

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Exhibit "B"

Irvine Ranch Water District Mission, Vision, and Values

Mission

The mission of Irvine Ranch Water District, a public agency, is to provide high quality water and sewer service in an efficient, cost effective, and environmentally sensitive manner that provides a high level of customer satisfaction.

Vision

The Irvine Ranch Water District's vision is to achieve greater customer and employee satisfaction, increased reliability and resource conservation, and excellent external relationships with suppliers and others.

Values

Customer Service	We are dedicated to delivering superior service to our customers.
Employee Development	We are committed to recruiting and retaining top quality employees and to providing a workplace environment, training, and a recognition and reward system that enhances employee performance and satisfaction.
Resource Management	We are dedicated to providing, conserving, and maximizing the efficient use and reuse of water and renewable resources to the benefit of our customers and to enhance the environment.
Community Leadership	We will share our resources with the community through education, policy leadership and employee involvement.

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Exhibit C

Irvine Ranch Water District Strategic Objectives

Customer Satisfaction

Provide reliable, responsive, satisfying service to our customers in all aspects of our operations.

Water Reliability

Provide a continuous, reliable supply of water to our current and future customers that meets their needs and expectations, and accounts for changes in climate variability.

Water Quality

Deliver potable and non-potable water that meets all regulatory standards and customer requirements, and improve the water quality of local urban runoff.

Sewer Reliability

Plan, design, operate and maintain the sewer system in a consistent, reliable, and cost effective manner.

Cost Effectiveness

Optimize all of the District's activities to provide service at the lowest possible cost with high standards of quality and reliability.

Employee Satisfaction / Development

Provide employees with a working environment and the tools needed to optimize performance, productivity, and satisfaction and encourage individual career development and enjoyment.

Environmental Commitment

Conduct our business so that we either enhance our environment or minimize negative impacts.

Innovation

Optimize the use of technology and innovation in order to constantly improve processes to provide the most reliable and cost effective services to our customers.

Resource Recovery

Maximize the efficient recovery of resources including the recycling of water, recovery of energy, and use of organic materials for the benefit of our customers and the community.

Communication

Provide clear, accurate, transparent, and timely communication of information regarding our services, projects, finances, and activities utilizing multiple disciplinary tools that include educational programs, publications, electronic media and personal contact.

Water Policy

Develop and advocate for policies at the local, state, and federal levels that promote a reliable, high quality, and cost effective water supply for our customers, as well as the efficient use of resources.

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Exhibit "D"

Strategic Planning
2020 IRWD Goals and Target Activities List

Updated: January 17, 2020

GM = General Manager's Office
 TS = Technical Services
 OPS = Operations

POL = Water Policy
 A&F = Administration and Finance
 HR = Human Resources

Goals and Target Activities	Target Completion Date	Lead
<i>1. Optimize and protect local groundwater utilization</i>		
a. Conduct well treatment and conveyance study for Wells 51, 52, and two Tustin Legacy well sites	May 2020	TS
b. Include IRWD's recycled water demands in OCWD's total water demand calculations	June 2020	POL
c. Collaborate with OCWD on South Basin Clean-up Project	Dec. 2020	POL
d. Collaborate with OCWD and the Groundwater Producers to develop policies and implement solutions to contain and remove PFAS contamination from groundwater and the Basin	Dec. 2020	TS POL
<i>2. Evaluate and invest in projects and programs that will enhance future long-term water supply reliability</i>		
a. Develop agreements with MWD and MWDOC that will provide water supply reliability from high priority water rights during periods of drought and supply interruptions	June 2021	POL
b. Advocate methods for filling the Orange County Groundwater Basin, including development of ways to promote exchanges	Complete	POL
c. Work with OCWD on Green Acres Project water supply	June 2020	POL
d. Develop sources for Title XVI funding, or other federal funding, for the Syphon Reservoir Improvement Project	June 2021	GM
<i>3. Optimize use of Irvine Lake as a water resource facility for IRWD and its partners.</i>		
a. Resolve property and other issues with Serrano Water District, the County of Orange, and the Irvine Company	March 2020	A&F
b. Develop agreement with Serrano Water District and with the Baker Plant Partners for providing water system reliability utilizing Irvine Lake	April 2020	POL
c. Complete final design of sloped outlet pipe to replace the Irvine Lake Outlet Tower	Nov. 2021	TS
d. Initiate design of Santiago Creek Dam Spillway Replacement	June 2020	TS
e. Complete environmental review of project to replace outlet tower and spillway for the Santiago Creek Dam	June 2021	POL
f. Identify controls to limit the growth of quagga mussels in pipelines from Irvine Lake and MWD to protect the Baker Plant and other facilities	Dec. 2020	POL

2020 IRWD Goals and Target Activities List DRAFT

4. <i>Develop water banking recharge, storage, and extraction capacity supplies for IRWD and water banking partners, and store water as it becomes available by working with current and future partners</i>		
a. Execute long-term unbalanced exchange agreements for Stockdale West with CA Department of Water Resources	June 2020	POL
b. Execute long-term exchange agreements to maximize benefits of non-SWP water (1-for-1 exchange)	Jan. 2020	POL
c. Identify and procure additional supplies of water for banking purposes through Mojave, San Luis Obispo, and others	Dec. 2020	POL
5. <i>Develop and implement the Kern Fan Groundwater Storage Project</i>		
a. Finalize and execute Agreement and Bylaws with Rosedale to establish the Kern Fan Groundwater Storage Project JPA	June 2020	POL
b. Identify and secure land as needed for the Kern Fan Groundwater Storage Project	June 2020	POL
c. Complete planning and environmental compliance work for the Kern Fan Groundwater Storage Project	Dec. 2020	POL
d. Establish terms for agreements with State Agencies for the construction of aqueduct turnout and the operation of the Kern Fan Groundwater Storage Project	Dec. 2020	POL
e. Secure water storage investment funding, or other federal funding , for the Kern Fan Project and advocate to include the project on the Bureau of Reclamation’s Report to Congress	Dec. 2020	GM POL
f. Identify and begin to secure additional water sources for the Kern Fan Groundwater Storage Project through statewide system integration arrangements	Dec. 2020	POL
6. <i>Develop water recycling facilities and applications for optimal benefit</i>		
a. Complete Irvine Lake Pipeline North Conversion Project	Complete	TS
b. Complete Sewage Treatment Master Plan	Aug. 2020	TS
c. Update the Salt Management Plan to reflect new projects and to assess impacts of salt loadings on water recycling	June 2020	POL
d. Complete CEQA and alternatives analysis for the Syphon Reservoir Improvement Project	Nov. 2020	POL TS
e. Complete geotechnical investigation for the Syphon Reservoir Improvement Project	April 2020	TS
f. Initiate design of the Syphon Reservoir Improvement Project	Aug. 2020	TS
g. Work with other agencies on recycled water use opportunities, based on outcomes of IRWD’s Sewage Treatment Master Plan	Nov. 2020	POL
h. Design and construct recycled water filtration facilities for San Joaquin Reservoir	July 2021	TS
i. Develop customer guidelines for using recycled water	Feb. 2020	POL
j. Amend IRWD Master Reclamation permit to allow recycled water in decorative lakes	Dec. 2020	TS

2020 IRWD Goals and Target Activities List DRAFT

7. Maximize resource recovery from fully functional biosolids and other resource recovery facilities		
a. Biosolids Class A Facilities operational and commissioned	May 2020	TS
b. Secure agreements with multiple outlets for biosolids	March 2020	OPS
c. Initiate partnerships with others to utilize surplus capacity	Sept. 2020	OPS
d. Develop plans to introduce FOG to the IRWD Biosolids Facilities	April 2021	OPS
e. Develop plan to introduce foodwaste into the IRWD Biosolids Facilities	Dec. 2021	OPS
8. Improve energy service reliability, manage demands, and control costs		
a. Finalize contract to outsource operation and maintenance of biogas treatment and micro-turbine systems	March 2020	OPS
b. Complete design and installation of compressed natural gas fueling station at the Operations Center	April 2021	TS
c. Complete water/sewer agency electricity tariff research in partnership with SCE that will incentivize IRWD to shift loads to over-generation periods.	Dec. 2020	POL
d. Coordinate with SunPower to complete the installation of the photovoltaic (solar) energy system at the Baker Plant	Feb. 2020	TS
9. Maximize watershed protection		
a. Work with Regional Board to secure updated NPDES Permit for IRWD facilities	Dec. 2020	TS
b. Work with the County and others, permit and implement the Selenium TMDL offset trading program	March 2020	OPS
c. Incorporate the Total Nitrogen (TN) / Total Phosphorus (TP) Offset Plan into the IRWD NPDES Permit	Complete	TS
d. Implement Evaluate in-house Pre-treatment program elements: permitting, agreements, and monitoring reports	April 2020	TS
e. Implement in-house FOG program, including billing	June 2020	TS
f. Complete construction of MWRP recycled water emergency diversion facilities to San Diego Creek	Complete	TS
g. Align IRWD's feasibility study of project to capture and treat urban runoff flows downstream from the San Joaquin Marsh utilizing funding from Measure M with County and UCI study	March 2020	OPS
h. Work with OC Flood to ensure appropriate storm-flow capacity in San Diego Creek	June 2020	GM
i. Work with the County, OCWD, OCSD, and others to obtain a recycled water emergency diversion connection to the Santa Ana River	Nov. 2020	TS
j. Participate in the Fecal Coliform Task Force to assist in the development of a reasonable TMDL	Complete	OPS

2020 IRWD Goals and Target Activities List DRAFT

<i>10. Ensure financial and rate stability</i>		
a. Pursue development and/or sale opportunities at former Carpenter HQ property and the buffer property around Wells 21 and 22 Desalter property	Dec. 2020	A&F
b. Develop / lease on remaining Sand Canyon Professional Center II property	June 2020	A&F
c. Update outstanding deed, access and other contractual restrictions related to real property	Complete	A&F
d. Update Cost of Service Study for the IRWD water and sewer systems	July 2020	A&F
e. Develop updated facility and pipeline unit costs for IRWD's Replacement Planning Model	April 2020	TS
f. Convert IRWD's LIBOR-based swaps to new interest rate index	Dec. 2020	A&F
<i>11. Identify, assess and implement new technologies, systems, and facilities to improve operating efficiency</i>		
a. Complete addition of linear assets to the Enterprise Asset Management system	Complete	OPS
b. Develop mobility solution for Enterprise Asset Management system	April 2020	OPS
c. Implement findings of IT-related existing/new technology opportunity assessment while maintaining IRWD's cyber security	Complete	A&F
d. Assess the District's overall cybersecurity risk profile; establish overall plan for addressing cybersecurity awareness, education, response, and prevention at IRWD	June 2020	A&F
e. Assess availability of data systems under certain service outage scenarios and implement programs to strengthen systems	May 2020	A&F
f. Convert IRWD email system from GroupWise to Outlook	March 2020	A&F
g. Develop assessment IRWD's future warehousing needs	March 2020	A&F
h. Evaluate office space needs to the Sand Canyon Headquarters Building and develop plan as needed	March 2020	A&F
i. Expand parking capabilities at the Michelson Operations Center	Oct. 2020	OPS
j. Develop plan for overall management of IRWD data (technical, financial, other)	June 2020	A&F
k. Update IRWD's Delegation of Authority policies	Complete	A&F
l. Update IRWD Strategic Measures Dashboard	June 2020	A&F
m. Renew IRWD's Clean Air Act Title V Permit	Sept. 2020	TS

2020 IRWD Goals and Target Activities List DRAFT

<i>12. Enhance customer communications</i>		
a. Enhance customer communication through an improved customer web access portal	Dec. 2020	A&F
b. Develop and implement Phase 3 of the Water Use Efficiency Outreach Program based on findings of the 2018 program and the 2019 Study	Oct. 2020	POL
c. Implement the Syphon Reservoir Improvement Project Outreach Program from EIR through Design Phase	Nov. 2020	POL
d. Implement the technical update of the IRWD Customer Care and Billing (CC&B) system	Dec. 2021	A&F
e. Update water use efficiency graphics / displays in the hallways at the Sand Canyon and Marsh Campus facilities	Oct. 2020	POL
<i>13. Maximize water use efficiency in the community</i>		
a. Complete a study to assess the potential for additional water use efficiency in IRWD's service area	Complete	POL
b. Implement automated methodology for quantifying irrigated areas and meter locations by linking aerial image data to meter and parcel data	June 2020	POL
c. Expand / enhance water use efficiency demonstration gardens within the IRWD service area: IVC, Irvine City Hall	Dec. 2020	POL
<i>14. Recruit, develop and retain a highly skilled, motivated, and educated work force</i>		
a. Assess the experience and training of IRWD employees to ensure a continued supply of highly skilled labor, and develop programs, for example an Apprenticeship Program, to close any labor skills gaps identified	Complete	HR
b. Engage with So. Cal. Water, Energy and Education Alliance, and local education community to implement a technical skills career path to ensure a future supply of skilled labor.	Dec. 2020	HR
c. Staff to engage with Santiago Canyon College to develop water distribution and maintenance systems internship program	Dec. 2020	HR
d. Complete implementation of District-wide corporate values initiative Initiate managers meetings and work groups to address topics identified by the corporate values initiative	April 2020	GM

2020 IRWD Goals and Target Activities List DRAFT

<i>15. Guide and lead local, state and federal policies and legislation</i>		
a. Advocate for legislation or regulations that protects local investments in water recycling and extraordinary supplies, without adding additional mandates on agencies , and protects IRWD’s ability to access those supplies, without penalty, during times of drought or shortage	Sept. 2020	GM POL
b. Advocate for an alternative funding source for safe and accessible drinking water in California, which is e Consistent with the Board’s adopted policy on a statewide public goods charge, oppose a statewide tax on water for Low Income Rate Assistance or to fund other resiliency efforts	Sept. 2020	GM
e. Engage in discussions surrounding water and sewer rates in order to protect the use of water budget based tiered rate structures, including discussions related to Low Income Rate Assistance programs and Proposition 218 reforms consistent with Board direction	Shift to 16.h	GM
d. Engage in discussions related to the fees charged on new developments in order to protect IRWD’s ability to charge cost-of-service based connections fees, including the ability to use the District’s capital cost allocation model	Sept. 2020	GM
e. Advocate against, or mitigate through amendments if necessary, legislation that reduces the protections obtained in AB 1486 (Ting, 2019) or that seeks to limit a local agency’s ability to use, lease, or dispose of property it owns	Sept. 2020	GM
f. Advocate for legislation or regulations that address the impacts of Public Safety Power Shutoff (PSPS) on water and wastewater agencies, including providing certainty regarding the ability of agencies to run their backup generators during PSPS events	Sept. 2020	GM
g. Seek reauthorization of and increased appropriations for the Bureau of Reclamation’s Title XVI, the Water Storage Investment Programs, and/or authorization and appropriation for other Bureau of Reclamation programs beneficial to IRWD (e.g., establishment of a dam safety program)	Dec. 2020	GM

2020 IRWD Goals and Target Activities List DRAFT

<i>16. Engage and shape policies and regulations put forth by local, state and federal agencies</i>		
a. Engage productively with stakeholders, industry associations, and state agencies to effectively implement the enacted long-term water use efficiency legislation	Dec. 2021	GM POL
b. Continue discussions and provide input to the SWRCB on development of water loss standards	July 2020	GM POL
c. Advocate that IRWD’s Water Resilience Portfolio principles and the “initial actions” contained in the policy paper are implemented either in the Governor’s Water Resilience Portfolio or through other means	Dec. 2020	GM
d. Engage on the implementation of the Safe Drinking Water Program in order to ensure that the program is implemented in a way to effectively move communities to sustainable access to safe drinking water	Dec. 2021	GM
e. Engage in discussions surrounding water and sewer rates in order to protect IRWD’s ability to use a water budget-based tiered rate structure, including discussions related to Low Income Rate Assistance programs, water system sustainability, and OEHHA’s “Human Right to Water” assessment tools	Sept. 2020	GM
f. Advocate that the SB 1383 Proposed Organics Waste Reductions Regulations preserve and promote the use of biosolids	March 2020	GM
g. Engage with stakeholders, industry associations, and regulatory agencies on PFAS, and the regulatory actions proposed by federal and state agencies	Dec. 2021	GM
<i>17. Collaborate with other agencies and entities through leadership and innovation</i>		
a. Advocate for IRWD’s Desalination Policy Principles	Aug. 2020	POL
b. Evaluate and promote opportunities for shared services such as third party billing and inspection / testing of recycled water systems for UC Irvine and the City of Tustin	June 2020	A&F
c. Support enhanced engagement and leadership roles within ACWA, WateReuse, CASA, and other District associations	Dec. 2020	GM
d. As part of the IRWD Sewage Treatment Master Plan, work with OCSD to identify mutually beneficial opportunities for use of IRWD sewer flows	Shift to 6.g	OPS
e. Finalize agreement for a pilot program through which MWDOC can participate in IRWD’s water banking program	March 2020	POL

2020 IRWD Goals and Target Activities List DRAFT

<i>18. Implement opportunities that enhance safety, security, and emergency preparedness throughout the District</i>		
a. Evaluate/implement CCTV security enhancements at the Sand Canyon Offices and the Michelson Operations Center facilities	May 2020	A&F
b. Complete construction of improvements to eliminate the use of chlorine gas at Primary Disinfection Facility	June 2021	TS
c. Conduct additional scenario training for the Emergency Ops Team & Policy Group	June 2020	HR
d. Conduct assessment for dedicated IRWD Emergency Operations Center (EOC) and possible satellite EOC(s)	Feb. 2020	HR
e. Develop plan to implement improvements that would ensure operational continuity of critical IRWD facilities, targeting three days of self-sustained operations	June 2020	TS
f. Revise all District energy control procedures (ECPs) and integrate with Maximo service work order system	Sept. 2020	OPS
g. Evaluate installation of natural gas storage system at the Operations Center and other locations	June 2020	TS
h. Ensure compliance with America’s Water Infrastructure Act (AWIA) to meet EPA requirements for emergency preparedness	March 2020	A&F
i. Develop and implement IRWD’s Hazard Mitigation Plan	July 2020	HR
j. Revise Specific Hazard Response Plans addenda to the Emergency Response Plan	Dec. 2020	HR
k. Assess all of IRWD’s existing dams to establish a risk-based Dam Safety Program	Oct. 2020	TS

IRVINE RANCH WATER DISTRICT

Strategic Planning Workshop

January 17, 2020

Sewage Treatment Master Plan Update



Summary:

IRWD's sewage and recycled water systems and demands have changed significantly since the District prepared a Wastewater Treatment Master Plan in 2003, and its service area now approaching buildout. HDR was retained to prepare a new Sewage Treatment Master Plan. At the Strategic Planning Workshop, staff and HDR will provide a project overview and an update on the status of the work.

Background:

In 2003, IRWD prepared a Wastewater Treatment Master Plan that defined a logical, cost effective program to upgrade and expand the District's recycling treatment plants to handle projected sewage flows, meet effluent quality requirements, and satisfy recycled water demands through 2025. IRWD has implemented many of the recommendations in the 2003 Master Plan including the Michelson Water Recycling Plant (MWRP) Phase 1 and Phase 2 Upgrades, Los Alisos Water Recycling Plant (LAWRP) 2005 Upgrades, and the Harvard Avenue Trunk Sewer Diversion to MWRP.

The service area, water recycling plants, and the wastewater industry as a whole have experienced a number of changes since completion of the 2003 Plan. This prompted staff to prepare a new master plan that evaluates the sewer system through buildout. HDR completed several components of the Master Plan, which is now over 50% complete. Completion of the Master Plan is scheduled for August 2020. At the Workshop, staff will provide an overview of the Plan and will solicit feedback on work completed to date and the proposed path forward. The presentation will including discussion of the following topics:

- Overview of the project,
- Key initial findings,
- Summary of system-wide alternatives,
- Results of the system-wide alternatives evaluation, and
- Confirmation of the proposed path forward

Recommendation:

That the board provide input regarding the selected system-wide alternative.

List of Exhibits:

Exhibit "A" – Draft Sewage Treatment Master Plan Project Update Presentation

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Sewage Treatment Master Plan Project Update

Strategic Planning Workshop
January 17, 2020



Purpose of Sewage Treatment Master Plan

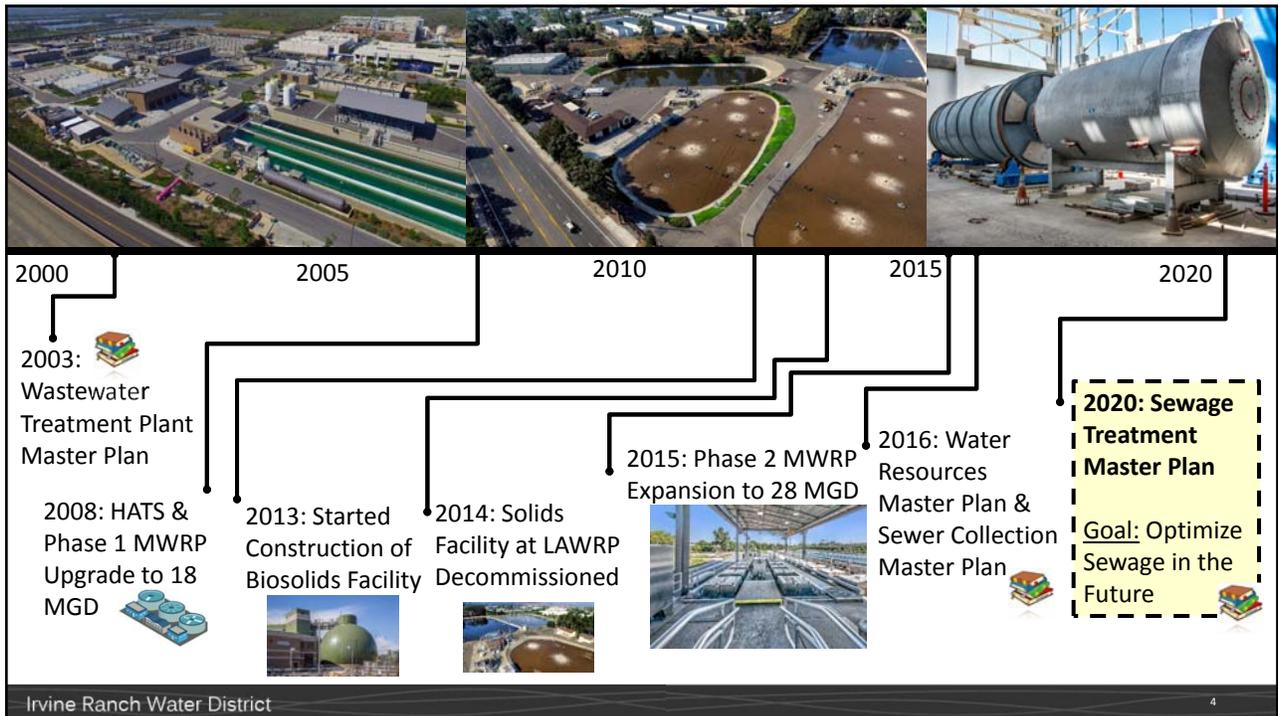
Develop a long term plan for optimizing
sewage conveyance and treatment of future
build out sewer flows

Irvine Ranch Water District 2

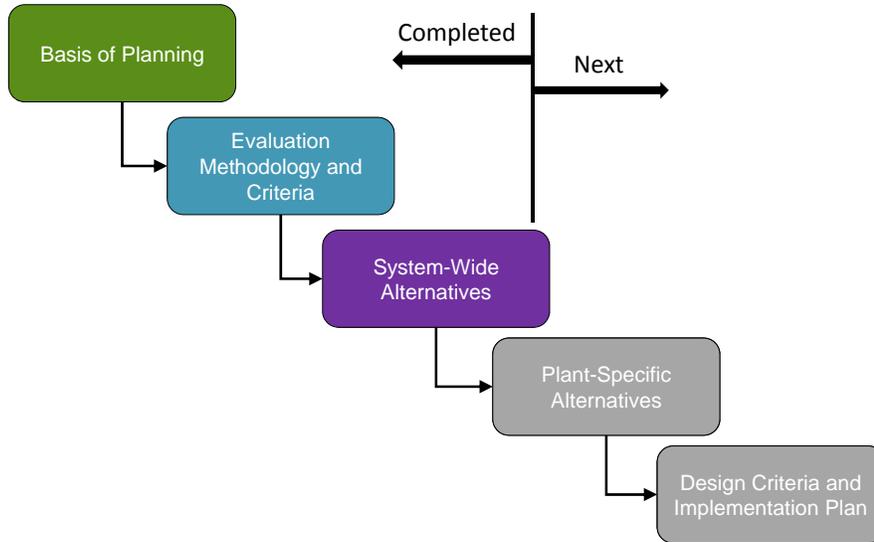


Agenda

- Project overview
- System-wide alternatives
- Economic analysis
- Non-economic analysis
- Initial findings

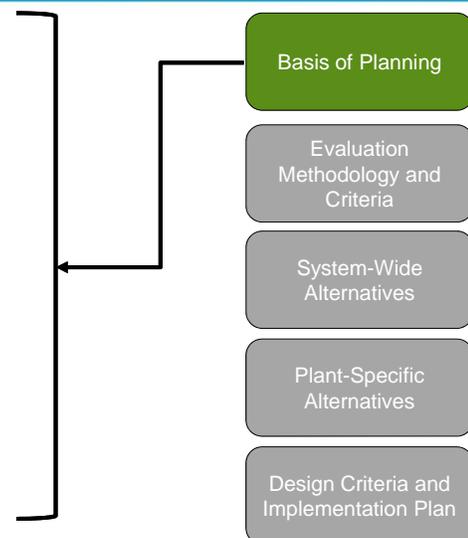


Overview of Project Phases



Highlights from Basis of Planning

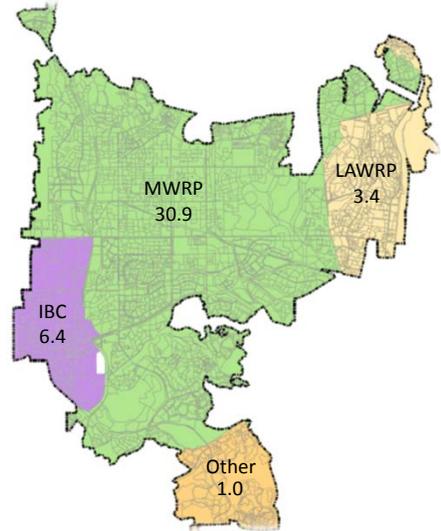
- Multiple inter-departmental workshops
- Interagency agreements
- Sewer model
- Sewer flows and loads
- Non-potable water supply and demand



Summary of Projected Sewer Flows & Recycled Water Demands

Sewer Flow Projections

Sewershed	2016 Sewer Collection Master Plan (Build-out)	2017 (Actual)	2020 Sewage Treatment Master Plan (Build-out)
MWRP, mgd	32.6	20.2	30.9
LAWRP, mgd	4.0	3.3	3.4
IBC, mgd	7.0	5.4	6.4
All Other, mgd	1.0	1.0	1.0
Total, mgd	44.6	29.9	41.7



2.9 mgd Reduction

Summary of Projected Sewer Flows & Recycled Water Demands

Sewer Flow Projections

Sewershed	2016 Sewer Collection Master Plan (Build-out)	2017 (Actual)	2020 Sewage Treatment Master Plan (Build-out)
MWRP, mgd	32.6	20.2	30.9
LAWRP, mgd	4.0	3.3	3.4
IBC, mgd	7.0	5.4	6.4
All Other, mgd	1.0	1.0	1.0
Total, mgd	44.6	29.9	41.7

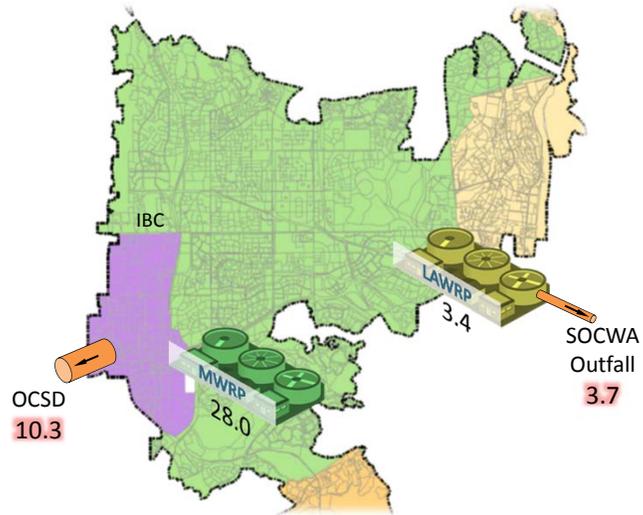
Recycled Water Demand Projections

Service Area	Sewage Treatment Master Plan (Build-out)
MWRP, AFY	28,952
LAWRP, AFY	2,059
Total, AFY	31,011
Total, mgd	27.7

14.0 mgd available sewage



Baseline Condition at Build-out



Maxims for System-wide Alternatives

The alternative must:

- Maximize future system flexibility
- Maintain sewage treatment at MWRP and LAWRP
- Minimize stranding assets at MWRP
- Accommodate potential future Potable Reuse

Basis of Planning

Evaluation Methodology and Criteria

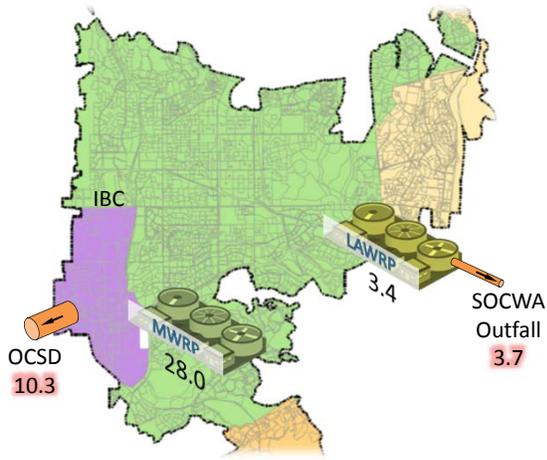
System-Wide Alternatives

Plant-Specific Alternatives

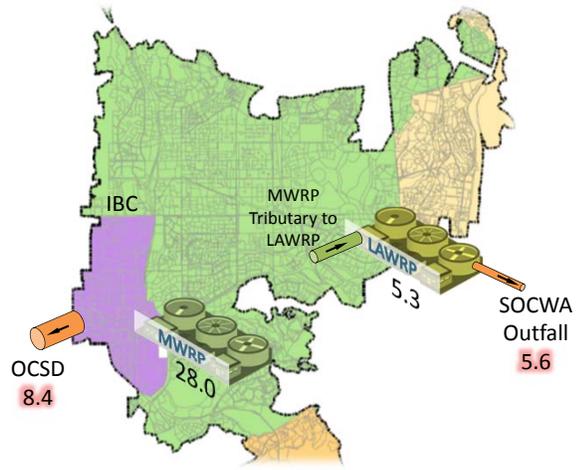
Design Criteria and Implementation Plan



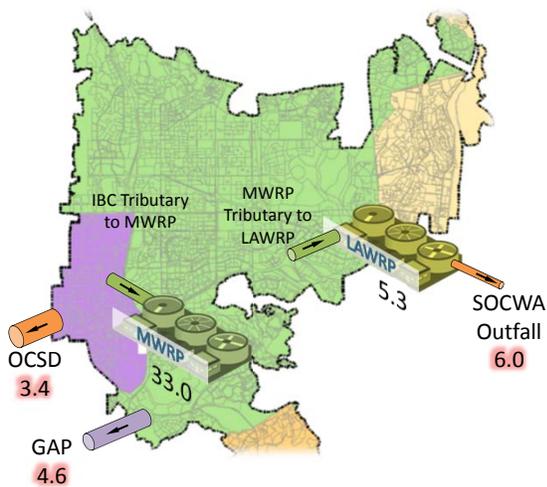
Baseline at Build-out



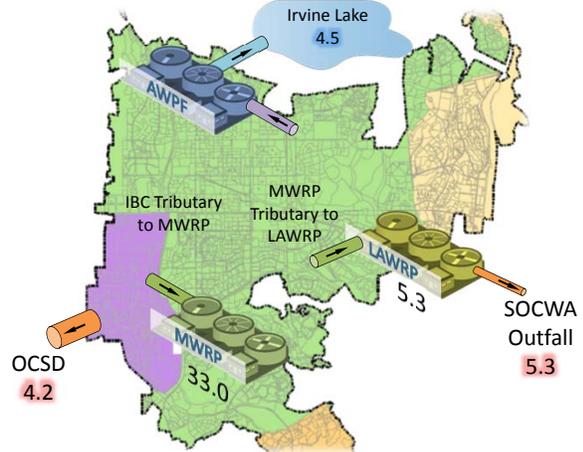
Alt 1 – Gravity Diversion to LAWRP



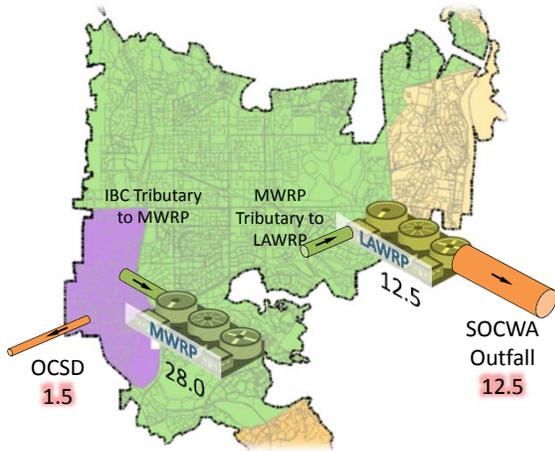
Alt 6b – GAP



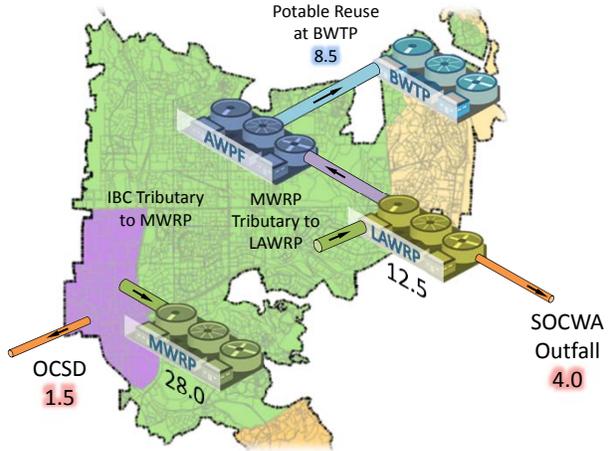
Alt 7b – Potable Reuse at Irvine Lake



Alt 9 – SOCWA Outfall Improvements

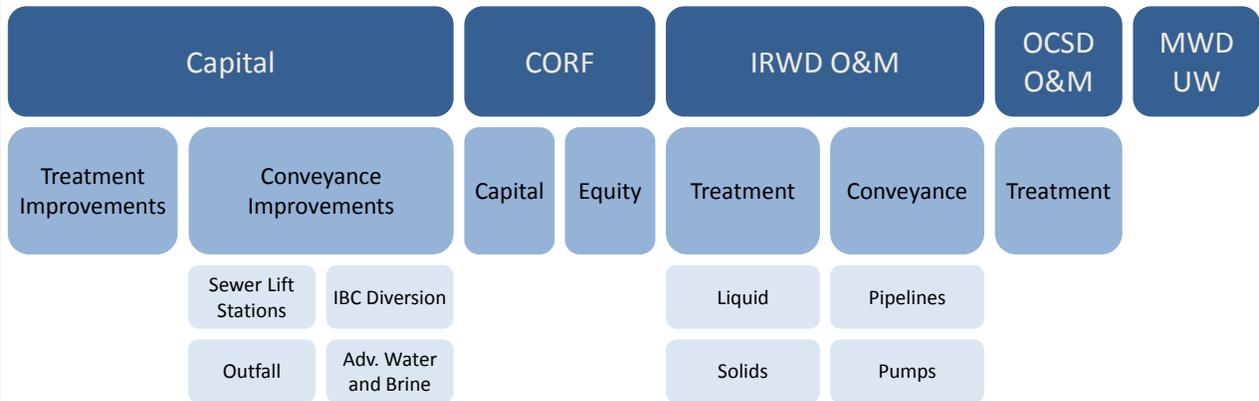


Alt 12 – Potable Reuse at Baker WTP



Overview of Cost Estimate

System-Wide Alternatives

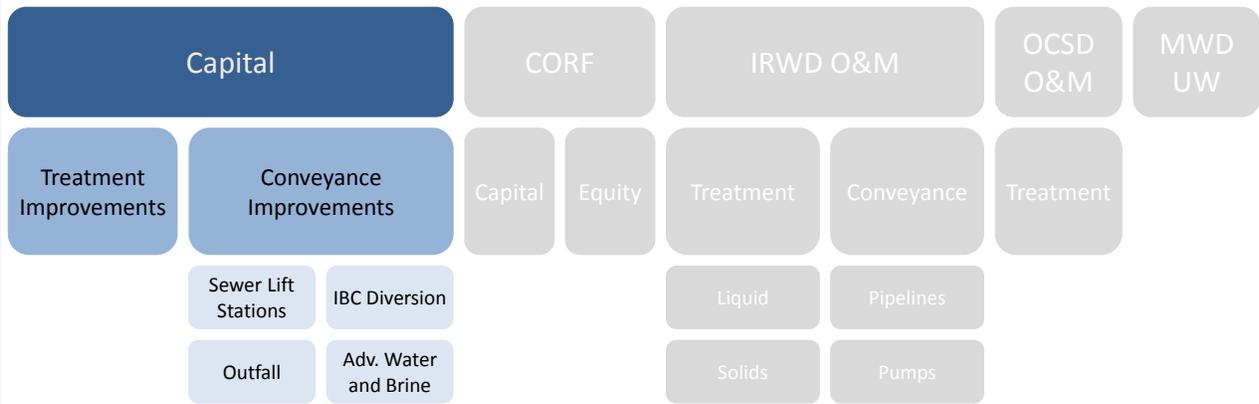


Irvine Ranch Water District



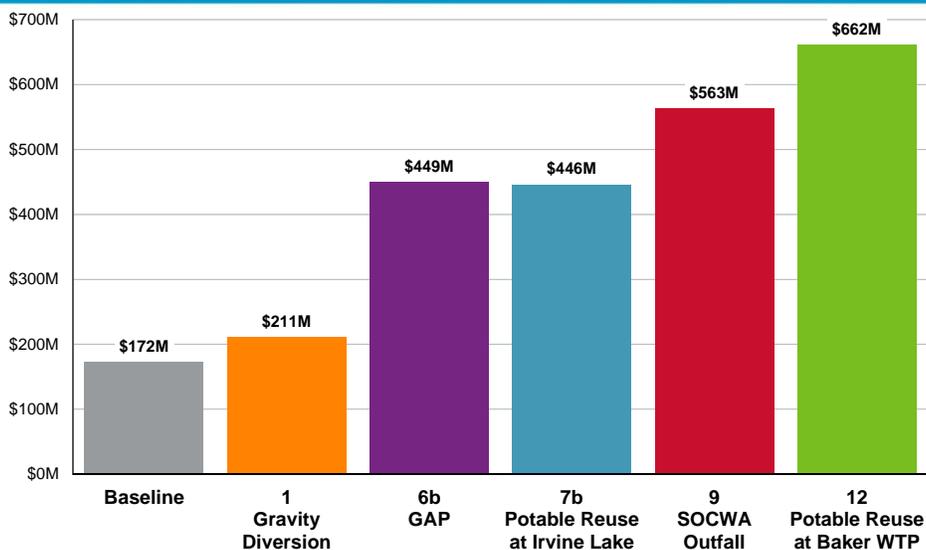
Capital Cost Estimates

System-Wide Alternatives



Irvine Ranch Water District

Capital Cost Estimate Summary

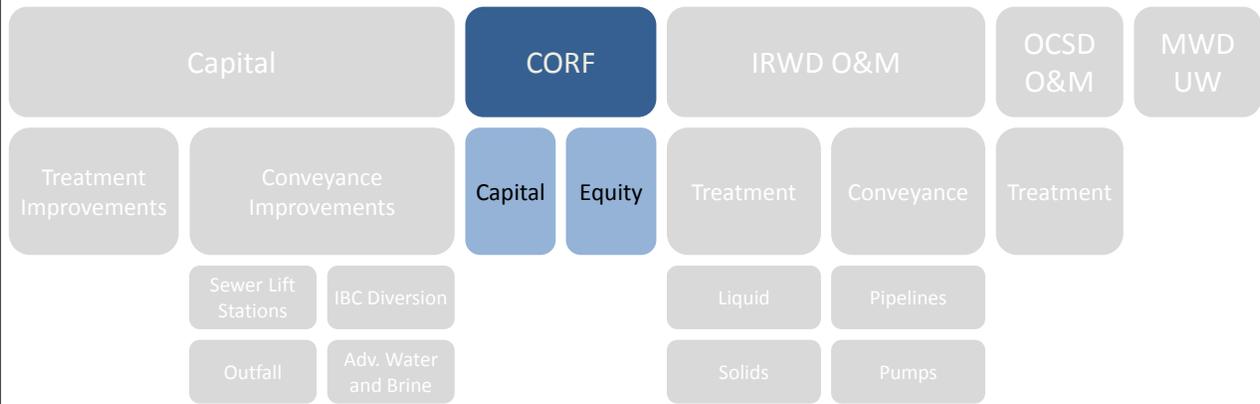


Irvine Ranch Water District



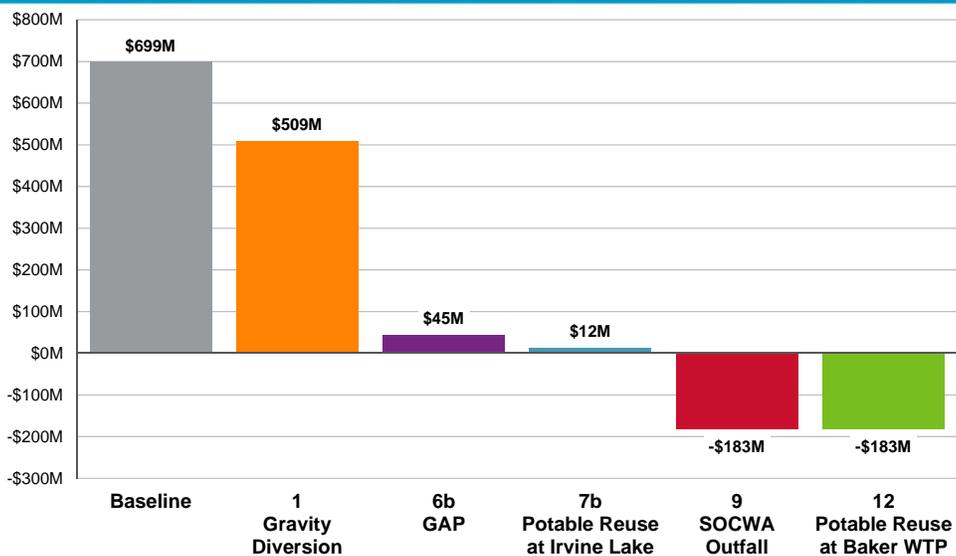
CORF Estimates

System-Wide Alternatives



Irvine Ranch Water District

Cumulative OCSD Capital and Equity, 2035-2085

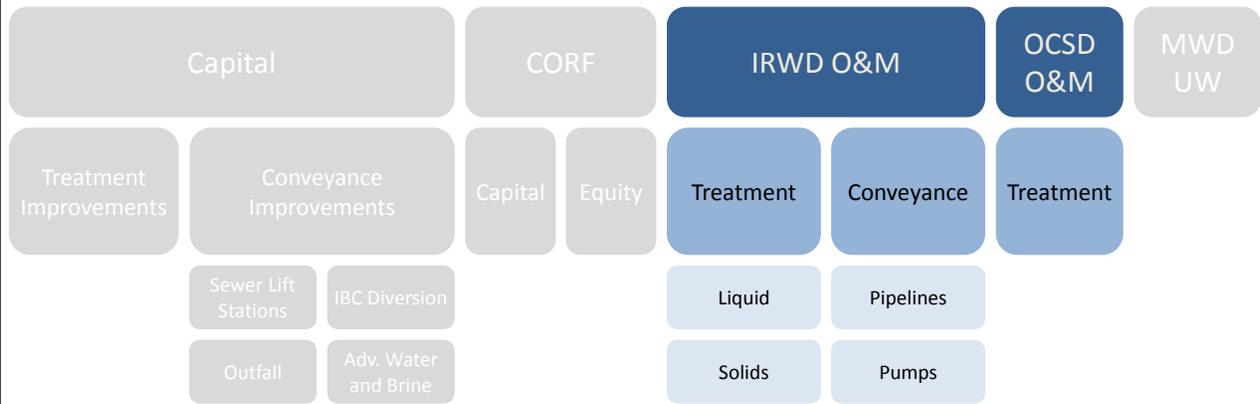


Irvine Ranch Water District



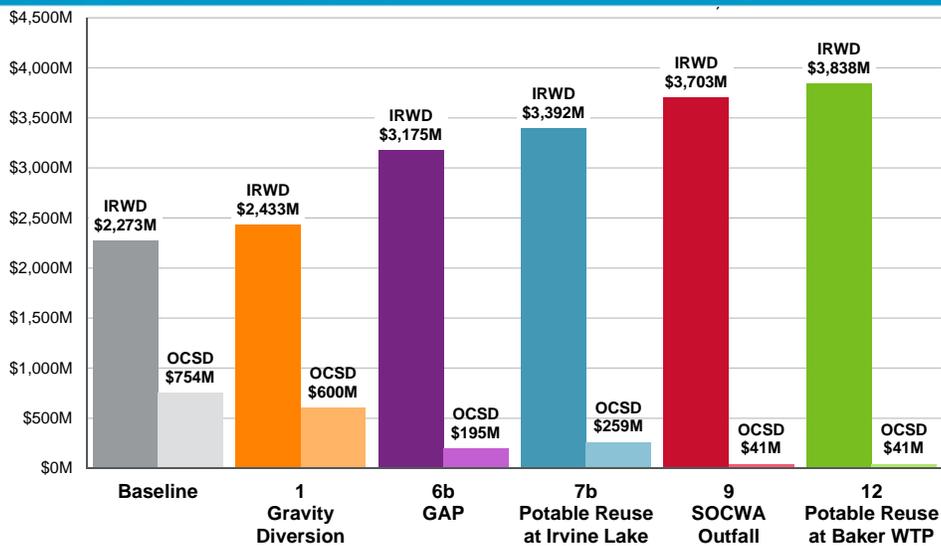
IRWD and OCSD O&M Estimates

System-Wide Alternatives



Irvine Ranch Water District

Summary of O&M Cost Estimates, 2035-2085

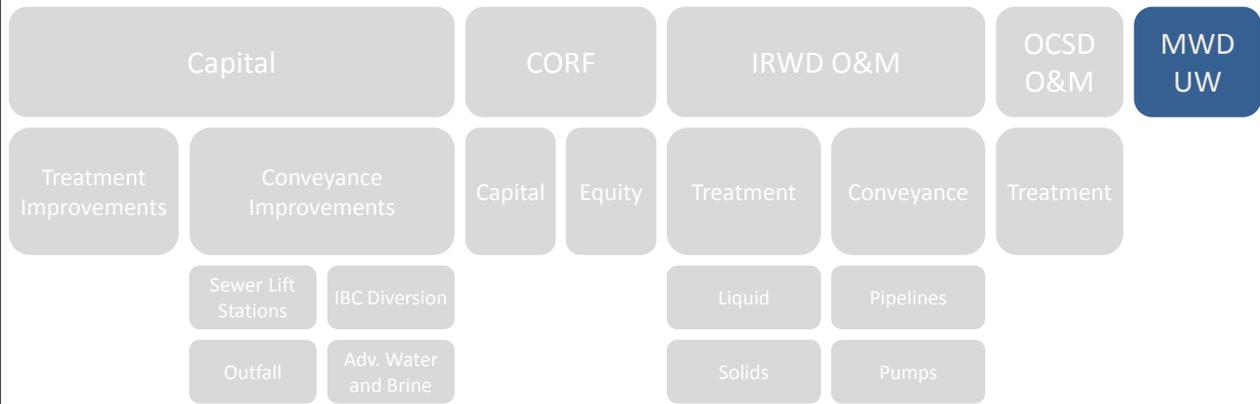


Irvine Ranch Water District



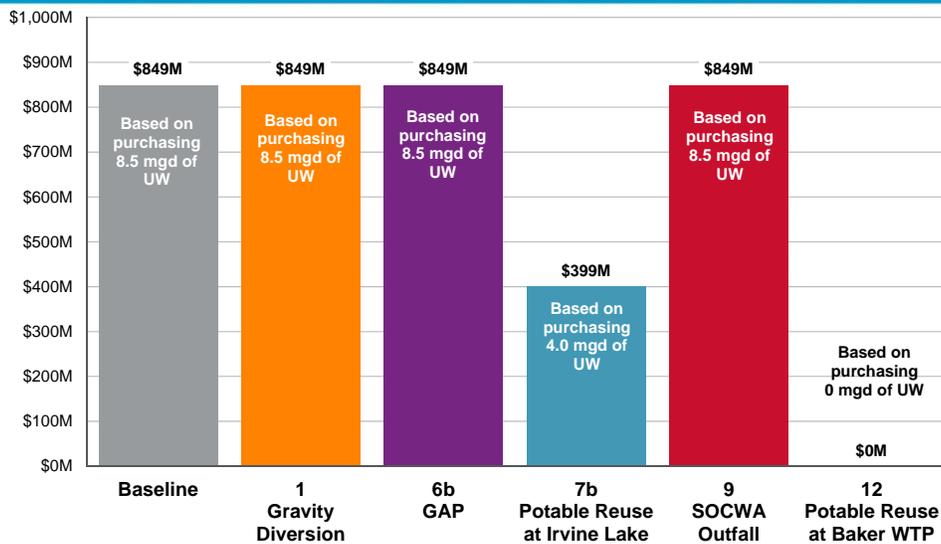
MWD Untreated Water Cost Estimates

System-Wide Alternatives



Irvine Ranch Water District

Baker Raw Water Purchases, 2035-2085

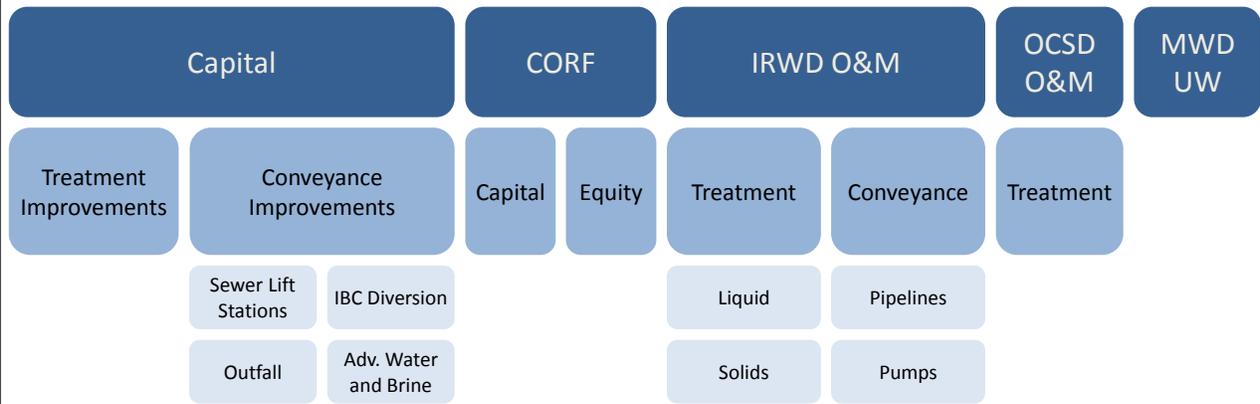


Irvine Ranch Water District



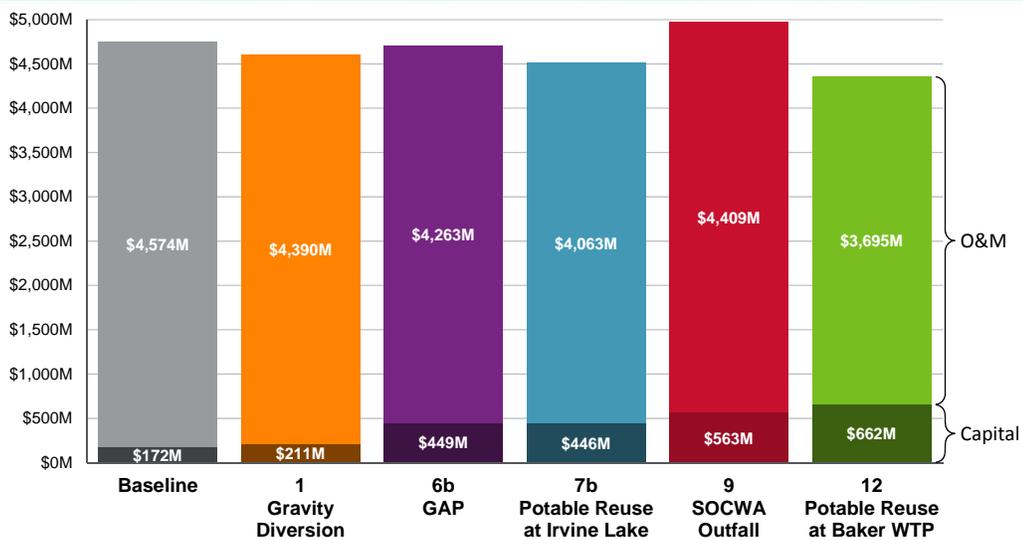
Overview of Cost Estimate

System-Wide Alternatives



Irvine Ranch Water District

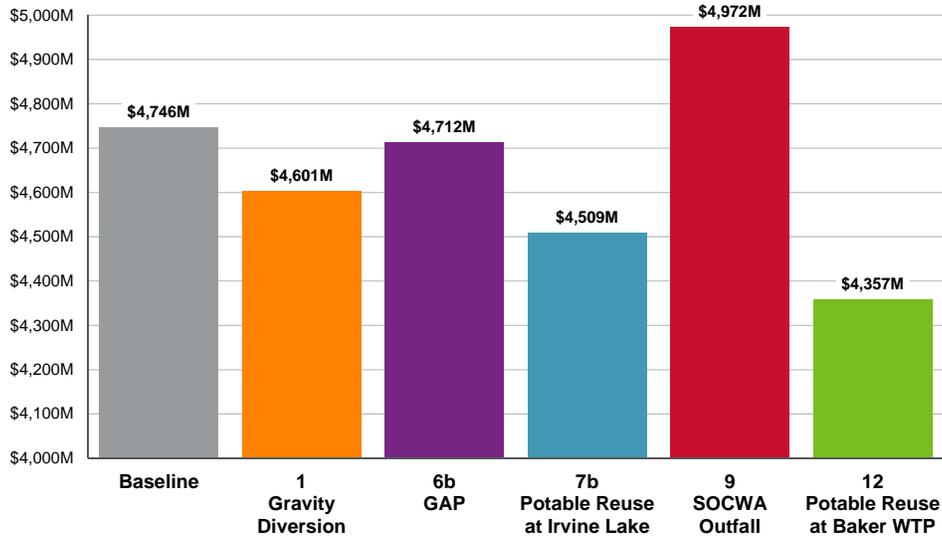
Life Cycle Cost Summary – Breakdown, 2035-2085



Irvine Ranch Water District



Life Cycle Cost Summary, 2035-2085



Irvine Ranch Water District

Non-Economic Criteria and Weighting

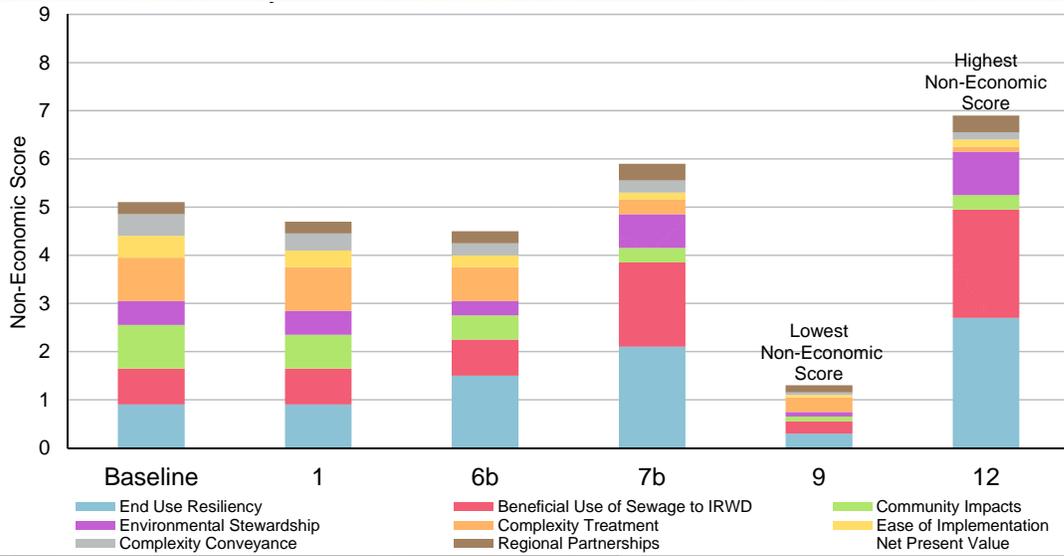
Criteria	Weighting
End Use Resiliency	30
Beneficial Use of Sewage to IRWD	25
Community Impacts	10
Environmental Stewardship	10
Complexity of Treatment Requirements	10
Ease of Implementation	5
Complexity of Conveyance System Improvements	5
Regional Partnerships	5
Total	100

Irvine Ranch Water District

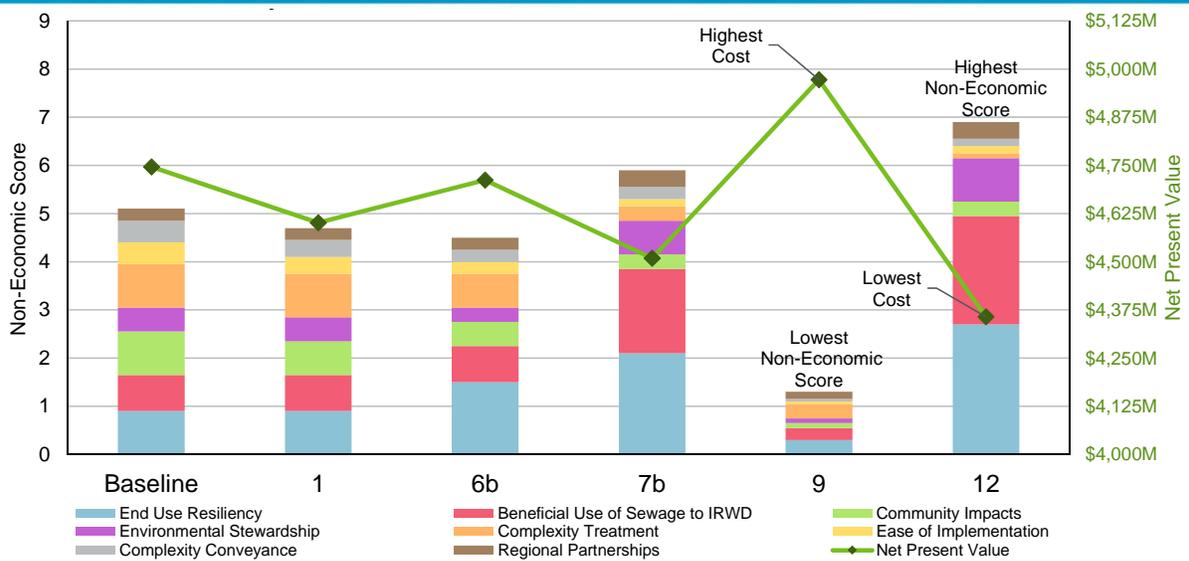
26



Alternatives Evaluation Results Summary

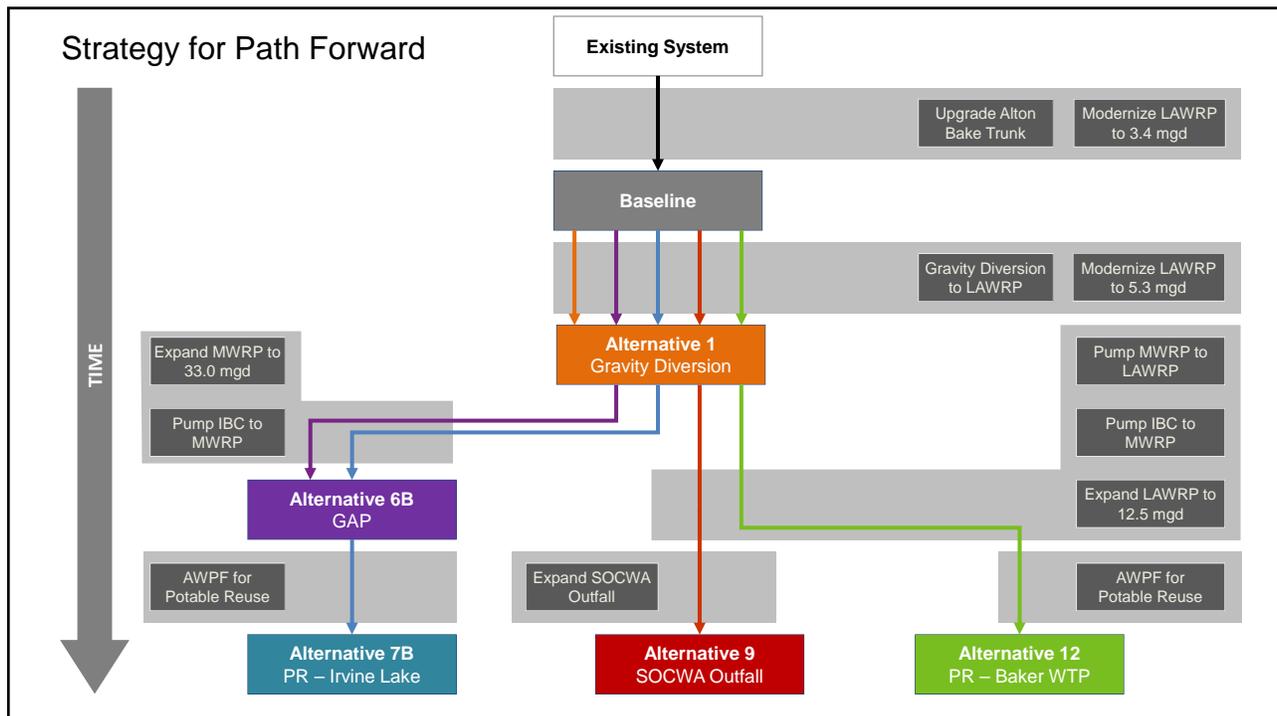


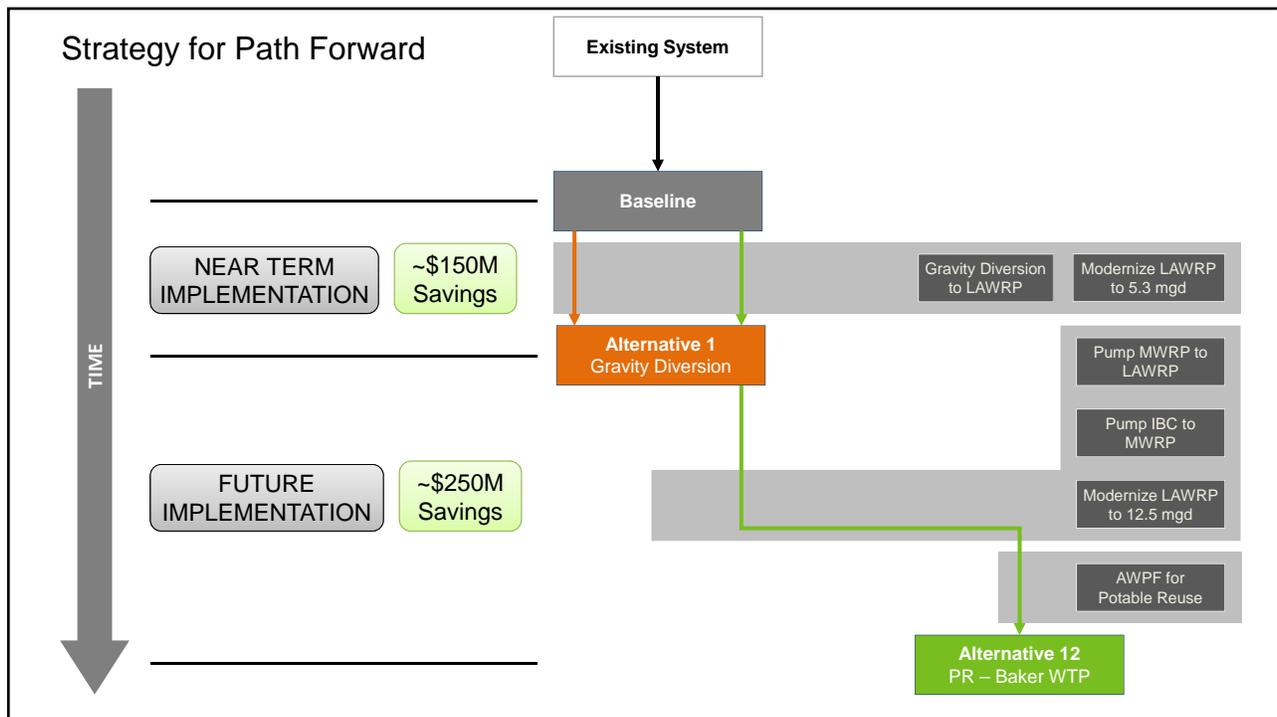
Alternatives Evaluation Results Summary



Implementation Plan and Future Considerations

- Impacts to Potable Water Supplies
- Potable Reuse Regulations
- Modification to Local Limits Program
- LAFCO considerations
- Interagency Agreements
 - Baker WTP Partners
 - OCSD
 - OCWD
 - SMWD





Next Steps

- Finalize Treatment Plant Specific Alternatives Analysis based on Alternative 12
- Complete Sewage Treatment Master Plan
- Proceed with preliminary design for
 - Gravity diversion from MWRP Tributary to LAW RP
 - Modernizing LAW RP to 5.3 mgd




Irvine Ranch Water District 32





Questions/Discussion



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