



**Regular Meeting of the Metro Commission
and Metro Wastewater JPA**

AGENDA

**Thursday, March 1, 2018
12:00 p.m.**

**9192 Topaz Way (PUD MOC II) Auditorium
San Diego, California**

"The Metro JPA's mission is to create an equitable partnership with the San Diego City Council and Mayor on regional wastewater issues. Through stakeholder collaboration, open dialogue, and data analysis, the partnership seeks to ensure fair rates for participating agencies, concern for the environment, and regionally balanced decisions."

Note: Any member of the Public may address the Metro Commission/Metro Wastewater JPA on any Agenda Item. Please complete a Speaker Slip and submit it to the Administrative Assistant or Chairperson prior to the start of the meeting if possible, or in advance of the specific item being called. Comments are limited to three (3) minutes per individual.

Documentation
Included

1. ROLL CALL

2. PLEDGE OF ALLEGIANCE TO THE FLAG

3. PUBLIC COMMENT

Persons speaking during Public Comment may address the Metro Commission/ Metro Wastewater JPA on any subject matter within the jurisdiction of the Metro Commission and/or Metro Wastewater JPA that is not listed as an agenda item. Comments are limited to three (3) minutes. Please complete a Speaker Slip and submit it prior to the start of the meeting.

- X 4. **ACTION** – CONSIDERATION AND POSSIBLE ACTION TO APPROVE THE MINUTES OF THE REGULAR MEETING OF [November 2, 2017](#) (**Attachment**)
- X 5. **ACTION:** CONSIDERATION AND POSSIBLE ACTION TO APPROVE THE METRO JPA MID-YEAR FINANCIAL STATEMENTS (SEVEN MONTHS ENDING JANUARY 31, 2018) (**Attachment**) (Kevin Woo)
- X 6. **ACTION:** CONSIDERATION AND POSSIBLE ACTION TO APPROVE A CONTRACT WITH U.S. PEROXIDE, LLC. FOR PROPRIETARY PEROXIDE REGENERATED IRON-SULFIDE CONTROL PROGRAMS FOR WASTEWATER ODOR CONTROL AT VARIOUS CITY FACILITIES (**Attachment**) (Juan Guerreiro)

March 1, 2018

Metro Commission/Metro
Wastewater JPA Regular
Meeting Agenda

- X 7. **ACTION:** CONSIDERATION AND POSSIBLE ACTION TO APPROVE A PURE WATER CENTRAL AREA ALTERNATIVE EVALUATION (**Attachment**) (Doug Owen)

- X 8. **ACTION:** CONSIDERATION AND POSSIBLE ACTION TO APPROVE AN AS-NEEDED CONSTRUCTION MANAGEMENT SERVICES – CONVEYANCE PROJECTS AGREEMENT WITH CH2M HILL, INC. (**Attachment**) (John Helminski)

- X 9. METRO TAC UPDATE/REPORT (Standing Item) (**Attachment**) (Greg Humora)

- 10. UPDATE FROM PURE WATER PROJECT EIR SUBCOMMITTEE (Standing Item) (Greg Humora)

- 11. CITY OF SAN DIEGO SECONDARY EQUIVALENCY LEGISLATION (Standing Item) (John Helminski)

- X 12. PURE WATER PROGRAM UPDATE (Standing Item) (**Attachment**) (John Helminski)

- 13. IROC UPDATE (Jerry Jones)

- 14. PURE WATER AD HOC COMMITTEE UPDATE (Jerry Jones)

- 15. FINANCE COMMITTEE (John Mullin)

- 16. REPORT OF GENERAL COUNSEL (Paula de Sousa Mills)

- 17. PROPOSED AGENDA ITEMS FOR THE NEXT METRO COMMISSION/METRO WASTEWATER JPA MEETING **April 5, 2018**

- 18. METRO COMMISSIONERS' AND JPA BOARD MEMBERS' COMMENTS

- 19. ADJOURNMENT OF METRO COMMISSION AND METRO WASTEWATER JPA

The Metro Commission and/or Metro Wastewater JPA may take action on any item listed in this Agenda whether or not it is listed "For Action."

Materials provided to the Metro Commission and/or Metro Wastewater JPA related to any open-session item on this agenda are available for public review by contacting L. Peoples at (619) 548-2934 during normal business hours.

***In compliance with the
AMERICANS WITH DISABILITIES ACT***

The Metro Commission/Metro Wastewater JPA requests individuals who require alternative agenda format or special accommodations to access, attend, and/or participate in the Metro Commission/ Metro Wastewater JPA meetings, contact E. Patino at (858) 292.6321, at least forty-eight hours in advance of the meetings.

Metro JPA 2018 Meeting Schedule

January 4, 2018	February 1, 2018	March 1, 2018
April 5, 2018	May 3, 2018	June 7, 2018
July 5, 2018	August 2, 2018	September 6, 2018
October 3, 2018	November 1, 2018	December 6, 2018

Attachment 4
Action Minutes
of November 2,
2017

Attachment 5
Mid Year
Financial
Statements
01/31/18



Metro Wastewater Joint Powers Authority
Treasurer's Report
Seven months ending January 31, 2018

Submitted by:

Karen Jassoy, Treasurer, 2/20/18

Metro Wastewater JPA
Treasurer's Report
Seven months ending January 31, 2018
Unaudited

Beginning Cash Balance at June 30, 2017	\$ 170,971
Operating Results	
Membership Dues & Interest Income	229,361
Expenses	<u>(128,763)</u>
Change in Net Position	100,598
Net change in Receivables & Payables	<u>152,384</u>
Cash provided by Operations	<u>252,983</u>
Ending Cash Balance at Jan 31, 2018	<u><u>\$ 423,954</u></u>

Metro Wastewater JPA
Statement of Net Position

As of June 30, 2017 and Jan 31, 2018

Unaudited

	<u>June 30, 2017</u>	<u>Jan 31, 2018</u>	<u>\$ Change</u>
<u>ASSETS</u>			
Checking/Savings	\$ 170,971	\$ 423,954	\$ 252,983
Accounts Receivable	-	17,587	17,587
Total Assets	<u><u>\$ 170,971</u></u>	<u><u>\$ 441,541</u></u>	<u><u>\$ 270,569</u></u>
<u>LIABILITIES</u>			
Accounts Payable	\$ 37,408	\$ 43,587	\$ 6,179
Unearned Membership Billings	-	163,792	163,792
Total Liabilities	<u><u>\$ 37,408</u></u>	<u><u>\$ 207,379</u></u>	<u><u>\$ 169,971</u></u>
<u>NET POSITION</u>			
Total Net Position at Beginning of Period	\$ 250,042	\$ 133,563	\$ (116,479)
Change in Net Position	(116,479)	100,598	217,077
Total Net Position at End of Period	<u><u>\$ 133,563</u></u>	<u><u>\$ 234,162</u></u>	<u><u>\$ 100,598</u></u>
<u>TOTAL LIABILITIES & NET POSITION</u>	<u><u>\$ 170,971</u></u>	<u><u>\$ 441,541</u></u>	<u><u>\$ 270,569</u></u>

	<u>OP Exp With Contingency</u>	<u>Op Exp w/o Contingency</u>
<i>Net Position at Jan 31, 2018</i>	\$ 234,162	\$ 234,162
<i>FY '18 JPA Required Operating Reserve (based on 4 months of Operating Expenses)</i>	131,033	114,367
<i>Over (under) required reserve</i>	<u><u>\$ 103,128</u></u>	<u><u>\$ 119,795</u></u>

Metro Wastewater JPA

Statement of Operations

Seven months ending January 31, 2018
Unaudited

	<u>Actual</u>	<u>Budget</u>	<u>Difference</u>	
Income				
Membership Dues	\$ 229,308	\$ 229,308	\$ -	
Interest Income	<u>53</u>	<u>35</u>	<u>18</u>	
Total Income	\$ 229,361	\$ 229,343	\$ 18	
Expenses				
Admin Assistant - L. Peoples	\$ 525	\$ 4,667	\$ (4,142)	<i>Through 9/30/17</i>
Admin & Treasury Services-Padre	7,582	11,083	(3,502)	<i>Through 12/31/17</i>
Bank Charges	-	117	(117)	<i>As of 12/31/17</i>
Dues & Subscriptions	-	350	(350)	<i>As of 12/31/17</i>
JPA/TAC meeting expenses	1,692	2,917	(1,225)	<i>Through 11/30/17</i>
Miscellaneous	-	146	(146)	<i>As of 12/31/17</i>
Professional Services				
Engineering - NV5	11,225	43,750	(32,525)	<i>Through 11/30/17</i>
Engineering - Dexter Wilson	35,363	45,238	(9,875)	<i>Through 12/31/17</i>
Financial - Kese Group	31,840	43,867	(12,027)	<i>Through 1/31/18</i>
Legal - BB&K	31,979	35,000	(3,021)	<i>Through 1/31/18</i>
Per Diems	6,450	10,500	(4,050)	<i>Through 11/30/17</i>
Postage	129	-	129	<i>As of 12/31/17</i>
Printing	238	292	(54)	<i>As of 12/31/17</i>
Telephone	341	817	(476)	<i>As of 12/31/17</i>
Website Maintenance & Hosting	1,400	1,400	-	<i>Through 1/31/17</i>
Contingency	<u></u>	<u>29,167</u>	<u>(29,167)</u>	<i>As of 12/31/17</i>
Total Expenses	\$ 128,763	\$ 229,308	\$ (100,545)	
Change in Net Position	<u>\$ 100,598</u>	<u>\$ 35</u>	<u>\$ 100,563</u>	

Metro Wastewater JPA
Statement of Cash Flows

Seven months ending January 31, 2018
Unaudited

OPERATING ACTIVITIES

Change in Net Position	\$ 100,598
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**Adjustments to reconcile Change in Net Position
to net cash provided by Operations:**

Accounts Receivable	(17,587)
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Accounts Payable	6,179
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Deferred Revenue	163,792
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Net cash provided by (used in) Operations	<u>252,983</u>
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Net cash increase (decrease) for period	252,983
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Cash at beginning of period	<u>170,971</u>
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Cash at end of period	<u><u>\$ 423,954</u></u>
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Metro Wastewater JPA
Vendor Accrual Summary
As of Jan 31, 2018

Best Best and Kreiger	\$	6,622	⁽¹⁾
Keze Group		7,000	⁽¹⁾
City of Lemon Grove		25,615	⁽¹⁾
Vision Internet		200	⁽¹⁾
Padre Dam MWD		17,733	⁽¹⁾
White Nelson Diehl Evans		4,000	⁽²⁾
Whitney Benzian		150	⁽³⁾
Total	\$	<u>61,320</u>	

(1) Accruals; bills received and paid after 1/31/18

(2) Estimated billing

(3) Void and reissue

Attachment 6
Contract with
U.S.
Peroxide

METRO JPA/TAC
Staff Report
Date: March 1, 2018

Project Title:

USP Technologies, LLC, Peroxide Regenerated Iron – Sulfide Control Programs (PRI-SC™/PRI-CEPT™) for wastewater odor control at various City facilities

Requested Action:

The Wastewater Treatment and Disposal Division (WWTD) of the Public Utilities Department recommends approval to amend Contract No. 4600001444, with U.S. Peroxide, LLC, and moving it forward to City Council for approval.

Recommendations:

Approve Contract Amendment

Metro TAC:

Submitted for consideration

IROC:

Prior Actions:
(Committee/Commission,
Date, Result)

City Council approved the contract with U.S. Peroxide, LLC, for the proprietary programs for Peroxide Regenerated Iron – Sulfide Control Programs (PRI-SCTM/PRI-CEPTM) under Resolution No. R-308108 on April 16, 2013.

Fiscal Impact:

Is this projected budgeted? Yes X No

Cost breakdown between
Metro & Muni:

Metro: \$35,916,603.13 over six years (FY 2018-FY 2023)
Muni:

Fiscal impact to the Metro
JPA:

\$11,852,479.03 over six fiscal years (FY 2018-FY 2023)

Fiscal Impact by Year – USP Technologies, LLC

Fiscal Year	Metro Amount per Fiscal Year * (100%)	Funding Duration	JPA Fiscal Impact (33%)
2018	\$1,625,000.00	April 2018-June 2018 (Three Months)	\$536,250.00
2019	\$6,581,250.00	July 2018 - June 2019 (Twelve Months)	\$2,171,812.50
2020	\$6,910,312.50	July 2019 - June 2020 (Twelve Months)	\$2,280,403.13
2021	\$7,255,828.13	July 2020 - June 2021 (Twelve Months)	\$2,394,423.28
2022	\$7,618,619.53	July 2021 - June 2022 (Twelve Months)	\$2,514,144.45
2023	\$5,925,592.97	July 2022 - April 2023 (Nine Months)	\$1,955,445.68
Total	\$ 35,916,603.13		\$11,852,479.03

***Metro annual amount reflects an estimated 5% price increase. (Contract Terms indicate a 5-6% price increase annually.)**

Capital Improvement Program:

New Project? Yes No X N/A X

Existing Project? Yes No X Upgrade/addition Change

Previous TAC/JPA Action:**Additional/Future Action:**

Pending Metro Joint Power Authority (JPA) approval

City Council Action: To be considered by the Environmental Committee once approved consideration by the full City Council.

Background:

In accordance with SDMC §22.3016, the Public Utilities Department received sole source #3956 approval for procurement and continued services and with U.S. Peroxide, LLC (USP) to utilize the proprietary Peroxide Regenerated Iron – Sulfide Control Programs (PRI-SCTM/PRI-CEPTTM) for wastewater odor control. The City desires to continue using the patented program for regenerated iron-sulfide control for wastewater treatment which includes program management, equipment systems, chemicals, supplies, and technical services.

The City's existing Memorandum of Agreement (MOA), Outline Agreement #4600002659, has exercised its fourth and final option year (April 14, 2017 – April 15, 2018); the respective Sole Source Certification #2720 will expire that same timeframe. As such, the MOA may only be amended by obtaining sole source procurement certification approval and an instrument in writing duly executed by both parties. In adherence with City guidelines, the Public Utilities Department is seeking authorization to amend the USP contract's term (i.e., one (1) year, for an amount not to exceed \$6,500,000) with the option to renew for up to four (4) additional one-year periods under the terms and conditions set forth in the Contract, contingent upon the adoption of the Appropriation Ordinance for the applicable fiscal year. Total duration of the MOA, including options to renew, shall not exceed five (5) years unless approved by ordinance of the City Council. In adherence with City guidelines, the Department is seeking sole source authorization in order to amend the USP contract.

Per the existing Memorandum of Agreement's scope and term of work, USP shall provide the City with full service PRI-SCTM/PRI-CEPTTM program of Supply, Equipment and Services for Peroxide Regenerated Iron-Sulfide Control, which includes Hydrogen Peroxide and Ferrous Chloride, on an as-needed basis and in strict compliance with the approved contract documents. As such, these services are critical to the continued operations at the Public Utilities Department (PUD), Wastewater Treatment and Disposal facilities, such as the Point Loma Wastewater Treatment Plant (PLWTP) and the North City Water Reclamation Plant (NCWRP). In addition, this request is submitted to extend the existing scope of services to include other City facilities.

The total amount payable to USP for the first contract year shall not exceed \$6,500,000. The total amount payable to the USP for subsequent contract years shall not exceed the actual compensation amount of the first contract year plus the maximum percentage increase in prices allowed in the Pricing Proposal.

Discussion:

USP holds a US Patent (US 6,773,604 B2) for the PRI-SCTM/PRI-CEPTM odor control process which utilizes a combination of iron salts and oxidants. Various locations within the Metro Wastewater System rely heavily on the PRI-SCTM/PRI-CEPTM process. They not only provide cost effective odor control, but in addition the PRI-SCTM/PRI-CEPTM process supports chemically enhanced primary treatment of the wastewater to improve Total Suspended Solids and Biochemical Oxygen Demand removals. This supports the PLWTP ability to comply with its National Pollutant Discharge Elimination System (NPDES) permit. Although there are various known chemicals that can provide effective odor control, the City is not aware of any proven competitors to the PRI-SCTM/PRI-CEPTM process that can provide the additional chemically enhanced primary treatment benefit.

However, the City is in the early stages of investigating potential competitors to the PRI-SCTM/PRI-CEPTM process. The currently known competitors are in the early stages of the development of their products and have not had opportunities to prove their ability to ensure the continued pretreatment benefits experienced using the PRI-SCTM/PRI-CEPTM process, thus ensuring the City's continued compliance with the PLWTP's NPDES permit. Pilot projects are being developed to investigate and evaluate the effectiveness of the potential competition. If proven to offer the chemically enhanced preliminary treatment benefits provided by the PRI-SCTM/PRI-CEPTM process, then we can allow the vendors to competitively bid with confidence that we are not compromising our ability to comply with the PLWTP's NPDES permit.

Throughout the 10 years of service, USP's highly effective PRI-SCTM/PRI-CEPTM Program has saved the City between \$8 - \$9 million in wastewater treatment chemicals while improving treatment processes and effluent water quality at the PLWTP, NCWRP, and other facilities. USP has worked efficiently in partnership with the City of San Diego to maximize value through the enhancement of both economics and performance. As such, these services are critical to the continued operations at the Public Utilities Department, Wastewater Treatment and Disposal facilities, and in the best interest of the City at this time.

Bid Results: Sole Source #3956 was approved as a competitive process at this time would not have produced an advantage as the City desires to continue use of US Patent (US 6,773,604 B2) for the PRISC odor control process. USP pricing is pursuant to pricing adjustment terms and a formal Request for Quote process for USP's chemical suppliers as part of the contract agreement. USP pricing has been found to be comparison to the market therefore the competitive bidding process would not produce an advantage and is undesirable. The unique qualifications of USP Technologies and the need to procure these products and services as quickly as possible, warrant a sole source procurement.

USP Technologies, LLC Pricing Table by Fiscal Year

Term (12 Mths)	Dollar Amount per 12 Month Term	5% Increase	Monthly Amount	Fiscal Year	Dollar Amount per Fiscal Year	JPA Impact per Fiscal Year	Funding Duration
1	\$ 6,500,000.00	\$ 325,000.00	\$ 541,666.67	FY 2018	\$ 1,625,000	\$ 536,250	Three Months (April 2018 - June 2018)
2	\$ 6,825,000.00	\$ 341,250.00	\$ 568,750.00	FY 2019	\$ 6,581,250	\$ 2,171,813	Twelve Months (July 2018 - June 2019)
3	\$ 7,166,250.00	\$ 358,312.50	\$ 597,187.50	FY 2020	\$ 6,910,313	\$ 2,280,403	Twelve Months (July 2019 - June 2020)
4	\$ 7,524,562.50	\$ 376,228.13	\$ 627,046.88	FY 2021	\$ 7,255,828	\$ 2,394,423	Twelve Months (July 2020 - June 2021)
5	\$ 7,900,790.63	\$ 395,039.53	\$ 658,399.22	FY 2022	\$ 7,618,620	\$ 2,514,144	Twelve Months (July 2021 - June 2022)
				FY 2023	\$ 5,925,593	\$ 1,955,446	Nine Months (July 2022 - March 2023)
	\$ 35,916,603.13	Total Contract Amount		Total	\$ 35,916,603.13	\$ 11,852,479	
	\$ 11,852,479.03	JPA Fiscal Impact at 33%					

Contract term will start in April 2018 so first three months of contract will incur in FY 2018.
5% pricing increase built in to address potential pricing changes each Fiscal Year.

Attachment 7

Pure Water Central Area Alternative Evaluation

METRO JPA/TAC
Staff Report
Date: February 22, 2018

Project Title:

Pure Water Phase 2 Alternative Evaluation

Requested Action:

Approval to proceed with an alternative analysis for the Pure Water Phase 2 Facilities

Recommendations:

Approve the contract request.

Metro TAC:	February 21, 2018
IROC:	N/A
Prior Actions: (Committee/Commission, Date, Result)	N/A

Fiscal Impact:

Is this project budgeted?	Yes ____ No <u>X</u> __
Cost breakdown between Metro & Muni:	Total Task Order under the Master Services Agreement for the As-Needed Engineering Technical Services Consultant for the Pure Water San Diego Program is not to exceed \$200,000.
Fiscal impact to the Metro JPA:	Not to exceed amount: \$66,666.67

Capital Improvement Program:

New Project?	Yes ____ No ____ N/A <u>X</u> __
Existing Project?	Yes ____ No <u>X</u> __ Upgrade/addition ____ Change ____

Previous TAC/JPA Action:

Recommended for JPA Action at the Metro TAC meeting, February 21, 2018.

Additional/Future Action:

Metro JPA presentation planned for March 01, 2018.

City Council Action:

N/A

Background: *Provide background information on the need for the project*

The City of San Diego (CITY) is in the process of implementing Phase 1 of the Pure Water Program. Phase 1 will produce an annual average of 30 mgd of purified water that will be stored in Miramar Reservoir for subsequent treatment at the Miramar Water Treatment Plant (WTP). Phase 1 is currently scheduled to be completed by December 2021.

Phase 2 the Pure Water Program will provide for the production of an additional 53 mgd of purified water for a Program total of 83 mgd. The facilities to produce this additional quantity of Pure Water are currently proposed to be located in the Central Area of the CITY's service area. The Central Area Water Reclamation Plant (CAWRP) is proposed at a location on N. Harbor Drive near San Diego International Airport and the Central Area Pure Water Facility (CAPWF) is envisioned to be in the Mission Valley area, possibly near SDCCU Stadium. The purified water produced from Central Area facilities would be pumped to either Lake Murray, adjacent to the Alvarado WTP, or to San Vicente Reservoir.

Phase 2 will be completed by 2035. Starting a high-level alternatives analysis now will provide the opportunity to carefully review alternatives to form the basis for a more detailed study of the highest-ranking alternative(s) and demonstration testing. That, in turn, will provide the platform

for preliminary and final design, construction and start-up of the Phase 2 facilities within the 2035 timeframe.

Discussion: *Provide information on decisions made to advance the project*

The Metro Wastewater Joint Powers Authority (Metro JPA) member agencies discharge wastewater to the CITY'S Metro System and therefore shares in the costs of Metro System upgrades. The Metro JPA formed a Technical Advisory Committee (Metro TAC) to work with CITY staff on cost allocations for the wastewater components of Pure Water Facilities. In addition, the TAC came forward to the CITY with alternative approaches for the Phase 2 facilities. The scope of work for the Phase 2 Alternatives Study has been prepared in response to that request.

The objective of this evaluation is to conduct a high-level screening of alternatives for the Phase 2 facilities and compare them to the current Phase 2 facilities plan. The scope of work includes evaluating the alternatives in order to select a subset that may merit further investigation and/or preliminary design to confirm their feasibility. The analyses will be based upon work previously conducted, estimated planning-level facilities costs, and qualitative evaluation criteria to be established by the CITY and the Metro TAC. This Task Order scope of work does not include detailed design, route studies, tunnel design, operational modeling, hydraulic modeling, surveying, geotechnical explorations or other detailed design evaluations of the alternatives.

Project Schedule: The table below presents the anticipated schedule.

Activity	Date
Metro JPA/ Metro Commission	March 1, 2018
NTP on alternatives study	March 5, 2018
Draft alternatives report	October 30, 2018

Bid Results: *If bidding was done provide bidding format and results*
N/A

Pure Water Phase 2 Alternative Evaluation

Metro JPA/Metro Commission Meeting
March 1, 2018

Doug Owen, Stantec
Consultant Team Manager
Pure Water Program



Acknowledgements

Roberto Yano, City of Chula Vista
Dexter Wilson, Dexter Wilson Engineering
Scott Tulloch, Consultant (NV5)

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Lee Ann Jones-Santos, City of San Diego
Amer Barhoumi , City of San Diego
Alan Langworthy , City of San Diego
Victor Occiano, Brown and Caldwell
Jeff Schulz, Stantec

Phase 1 – North City

2050 annual average flow = 200 mgd

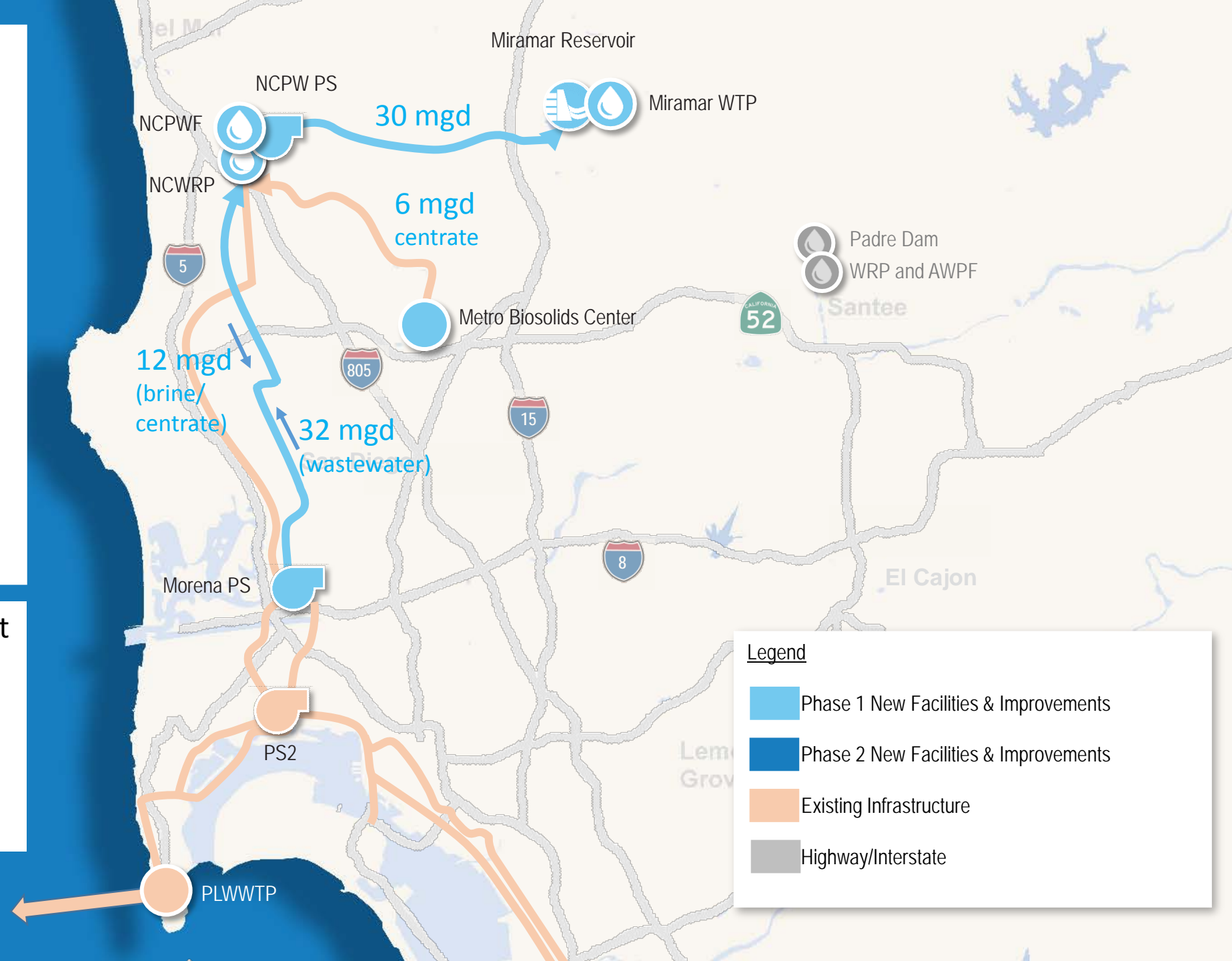
Currently under implementation Waiver in place

- NCWRP = 53 mgd secondary
 - 30 mgd purified water at NCPWF
 - 12 mgd non-potable reuse
- RSWRF (Padre Dam) = 15 mgd secondary
 - 10.5 mgd purified water at AWPf
 - 2.3 mgd non-potable reuse
- SBWRP = 15 mgd secondary
 - 9 mgd non-potable reuse
- PLWWTP = 240 mgd advanced primary capacity (existing)

Current Planned Capacity Without Phase 2 Pure Water

- 83 mgd secondary treatment
 - 240 mgd advanced primary treatment
- = 323 mgd total

129 mgd advanced primary to ocean



**Alternative 1a:
Baseline Central Area approach
Secondary Equivalency or Waiver Secured**

- NCWRP = 53 mgd secondary
 - 30 mgd purified water at NCPWF
 - 12 mgd non-potable reuse
- SBWRP = 15 mgd secondary
 - 9 mgd non-potable reuse
- RSWRF (Padre Dam) = 15 mgd secondary
 - 10.5 mgd purified water at AWPf
 - 2.3 mgd non-potable reuse
- CAWRP at Harbor Drive area
 - 70 mgd influent
- CAPWF in Mission Valley area
 - 53 mgd purified water to Lake Murray
- PLWWTP
 - 76 mgd influent
 - 240 mgd advanced primary available



Alternative 1b: Baseline Central Area Approach Full Secondary Required

- NCWRP = 53 mgd secondary
 - 30 mgd purified water at NCPWF
 - 12 mgd non-potable reuse
- RSWRF (Padre Dam) = 15 mgd secondary
 - 10.5 mgd purified water at AWPf
 - 2.3 mgd non-potable reuse
- SBWRP = 15 mgd secondary
 - 9 mgd non-potable reuse
- CAWRP at Harbor Drive area
 - 70 mgd influent
- CAPWF in Mission Valley area
 - 53 mgd purified water to Lake Murray
- PLWWTP
 - 78 mgd full secondary treatment

76 mgd full secondary to
ocean



Alternative 2: Bypass North City and Central Area treated flows to outfall

Full Secondary Required

- NCWRP = 53 mgd secondary
 - 30 mgd purified water at NCPWF
 - 12 mgd non-potable reuse
- RSWRF (Padre Dam) = 15 mgd secondary
 - 9 – 10.5 mgd purified water at AWPf
 - 3 mgd non-potable reuse
- SBWRP = 15 mgd secondary
 - 9 mgd non-potable reuse
- CAWRP in Harbor Drive area
 - 70 mgd secondary feeds CAPWF
- CAPWF in Mission Valley area
 - 53 mgd purified water to Lake Murray
- PLWWTP
 - 57 mgd full secondary treatment
 - 23 mgd brine/treated centrate to outfall

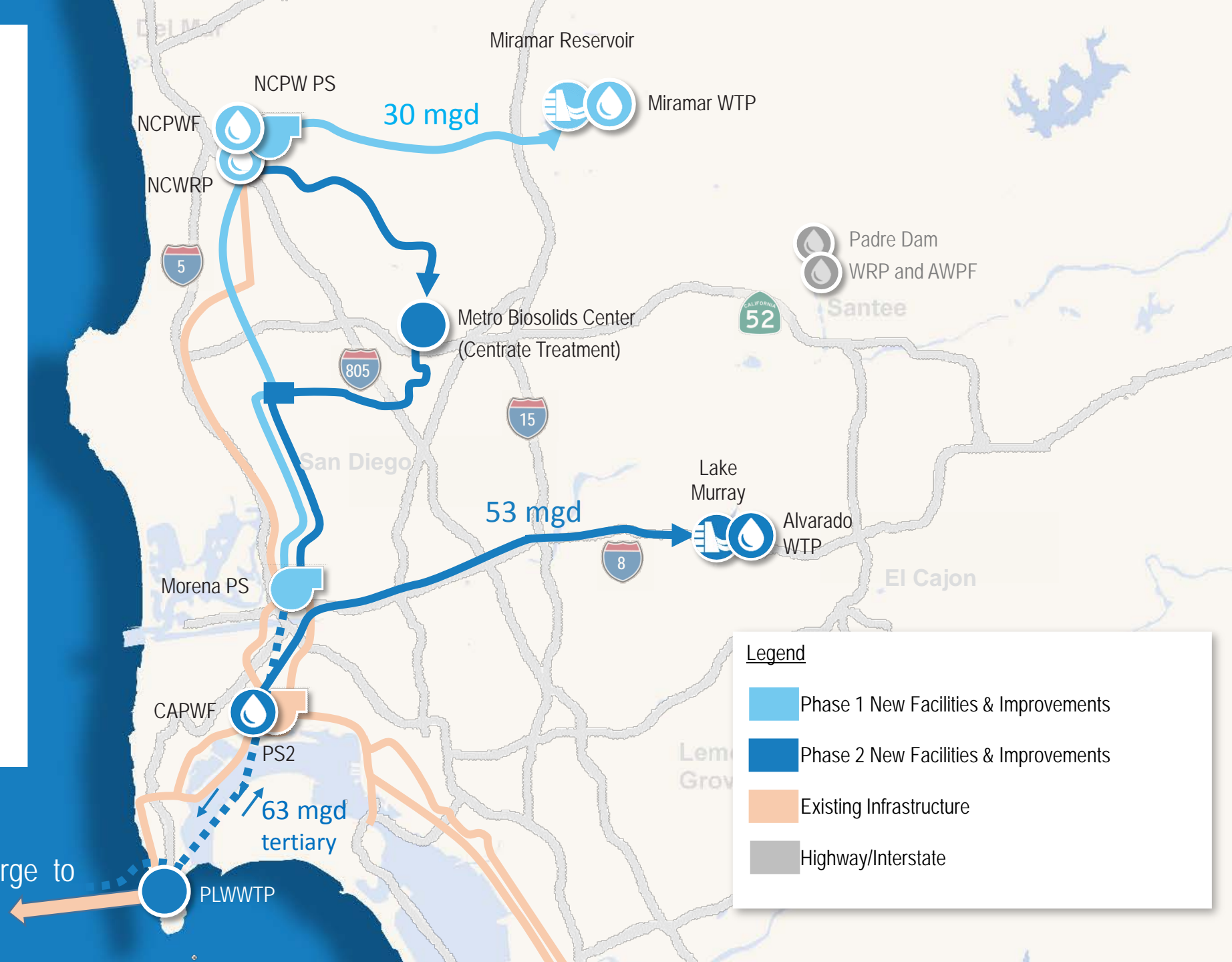
78 mgd discharge to
ocean



**Alternative 3a:
Central Area WRP and partial advanced
primary at PLWWTP**
Secondary Equivalency or Waiver Secured

- NCWRP = 53 mgd secondary
 - 30 mgd purified water at NCPWF
 - 12 mgd non-potable reuse
- RSWRF (Padre Dam) = 15 mgd secondary
 - 10.5 mgd purified water at AWPf
 - 2.3 mgd non-potable reuse
- SBWRP = 15 mgd secondary
 - 9 mgd non-potable reuse
- PLWWTP with WRP (split plant)
 - 63 mgd WRP feeds CAPWF
 - 55 mgd advanced primary to ocean
- 23 mgd brine/treated centrate to outfall
- CAPWF in Harbor Drive area
 - 53 mgd purified water to Lake Murray

78 mgd discharge to
ocean



Legend

- Phase 1 New Facilities & Improvements
- Phase 2 New Facilities & Improvements
- Existing Infrastructure
- Highway/Interstate

Alternative 3b: Central Area WRP at PLWWTP Full Secondary Required

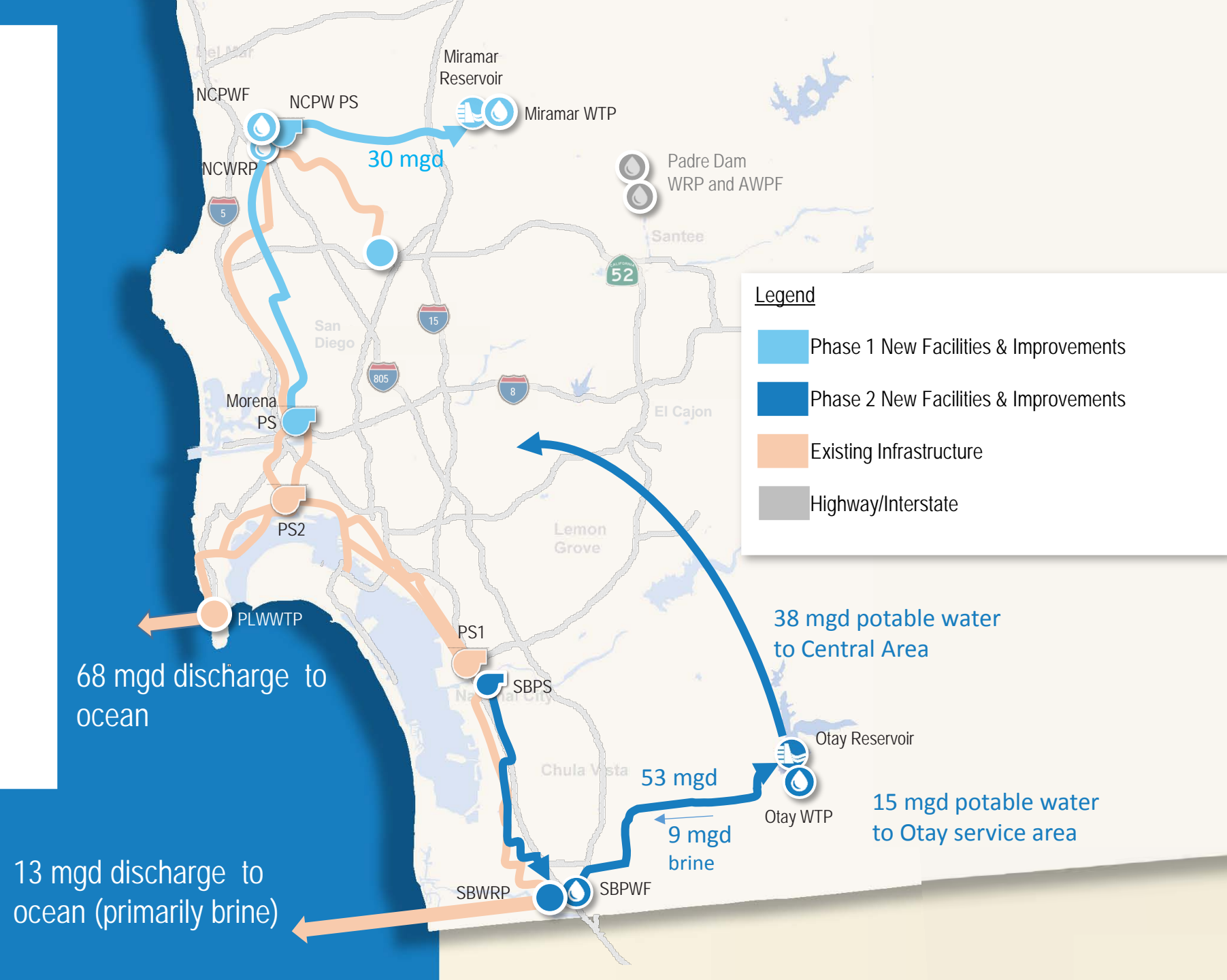
- NCWRP = 53 mgd secondary
 - 30 mgd purified water at NCPWF
 - 12 mgd non-potable reuse
- RSWRF (Padre Dam) = 15 mgd secondary
 - 9 – 10.5 mgd purified water at AWPf
 - 3 mgd non-potable reuse
- SBWRP = 15 mgd secondary
 - 9 mgd non-potable reuse
- PLWWTP with WRP
 - 122 mgd secondary
 - Of 122 mgd, 63 mgd feeds CAPWF
- 23 mgd brine/treated centrate to outfall
- CAPWF in Harbor Drive area
 - 53 mgd purified water to Lake Murray

79 mgd discharge to ocean



Alternative 4a: South Bay WRP for 53 mgd IPR/DPR Secondary Equivalency or Waiver Secured

- NCWRP = 53 mgd secondary
 - 30 mgd purified water at NCPWF
 - 12 mgd non-potable reuse
- RSWRF (Padre Dam) = 15 mgd secondary
 - 10.5 mgd purified water at AWPf
 - 2.3 mgd non-potable reuse
- SBWRP
 - 75 mgd WRP
 - 9 mgd non-potable reuse
 - 8 mgd biosolids treatment
- SBPWF
 - 53 mgd purified water to Otay Reservoir
- Otay DWTP
 - Expand from 34 to 53 mgd
- PLWWTP
 - 69 mgd advanced primary



Alternative 4b: South Bay WRP for 53 mgd IPR/DPR Full Secondary Required

- NCWRP = 53 mgd secondary
 - 30 mgd purified water at NCPWF
 - 12 mgd non-potable reuse
- RSWRF (Padre Dam) = 15 mgd secondary
 - 10.5 mgd purified water at AWPf
 - 2.3 mgd non-potable reuse
- SBWRP
 - 75 mgd WRP
 - 9 mgd non-potable reuse
 - 8 mgd biosolids capacity
- SBPWF
 - 53 mgd purified water to Otay Reservoir
- Otay DWTP
 - Expand from 34 to 53 mgd
- PLWWTP
 - 59 mgd secondary treatment
 - 13 mgd brine/treated centrate to PLWWTP outfall



Alternative 5a: Hybrid Central Area and South Bay WRP

Padre Dam Purified Water Reduces City's Pure Water Production to 73 mgd

Secondary equivalency or waiver secured

- NCWRP = 53 mgd secondary
 - 30 mgd purified water at NCPWF
 - 12 mgd non-potable reuse
- RSWRF (Padre Dam) = 15 mgd secondary
 - 10.5 mgd purified water at AWPf
 - 2.3 mgd non-potable reuse
- PLWWTP
 - 88 mgd advanced primary
- CAPWRP/PWF in Harbor Drive area
 - 36 mgd secondary at CAWRP
 - 28 mgd purified water to Lake Murray
- SBWRP
 - 28 mgd WRP
 - 9 mgd non-potable reuse
 - 3 mgd biosolids capacity
- SBPWF
 - 15 mgd purified water to Otay Reservoir



Alternative 5b: Hybrid Central Area and South Bay WRP

Padre Dam Purified Water Reduces City's Pure Water Production to 73 mgd

Full Secondary Required

- NCWRP = 53 mgd secondary
 - 30 mgd purified water at NCPWF
 - 12 mgd non-potable reuse
- RSWRF (Padre Dam) = 15 mgd secondary
 - 10.5 mgd purified water at AWPf
 - 2.3 mgd non-potable reuse
- PLWWTP
 - 79 mgd secondary
- 17 mgd brine/treated centrate to outfall
- CAWRP/PWF in Harbor Drive area
 - 36 mgd secondary at CAWRP
 - 28 mgd purified water to Lake Murray
- SBWRP
 - 28 mgd WRP
 - 9 mgd non-potable reuse
 - 3 mgd biosolids capacity
- SBPWF
 - 15 mgd purified water to Otay Reservoir





Scope of Work

1. Define alternatives
 - *Includes summary table of flows from all facilities*
2. Define Fail-Safe and Treatment Performance Criteria
 - *Discharge water quality and duration*
 - *Permit compliance*
 - *Discharge options*
3. Define Evaluation Criteria to Compare Alternatives
 - *Quantitative and qualitative*
4. Develop Alternatives
 - *Borrow from previous work wherever possible*
 - *Conceptual level*
5. Prepare Conceptual, Planning-Level Cost Estimates
 - *Borrow from previous work and escalate costs where appropriate*
 - *Includes baseline 163 mgd secondary treatment at PLWWTP without any Pure Water facilities*
6. Apply Evaluation Criteria, Screen and Select Highest Ranking Alternatives
7. Develop Conceptual Phase 2 Central Area Delivery Schedule



Conceptual Phase 2 Milestones ⁽¹⁾

Milestone	Phase 2
Phase 2 alternatives evaluation	March – October 2018
Phase 2 validation of preferred alternatives	November 2018 – December 2019
Demonstration testing	2019 (design/construction) - 2024
Design	2022 - 2027
Environmental Permitting	2023 - 2026
Construction	2028 – 2033 ⁽²⁾

1. To be updated during the alternative evaluation and validation
2. 2035 deadline for Pure Water production

Attachment 8
As-Needed
Const. Mgt. Svs.
& Conveyance
Projects Agmt w/
CH2M Hill, Inc.

METRO JPA/TAC
Staff Report
Date: February 21, 2018

Project Title:

As-Needed Construction Management Services for Pure Water Conveyance Projects

Requested Action:

Approve the As-Needed Construction Management services agreement between the City of San Diego and CH2M Hill, Inc. for Pure Water Phase 1 – Conveyance Projects.

Recommendations:

Approve the contract request.

Metro TAC:	February 21, 2018
------------	-------------------

IROC:	N/A
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Prior Actions: (Committee/Commission, Date, Result)	N/A
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Fiscal Impact:

Is this projected budgeted?	Yes <u>X</u> No ____
-----------------------------	----------------------

Cost breakdown between Metro & Muni:	Total contract is not to exceed \$45,000,000. Since it is an as-needed contract, the water/wastewater breakdown is TBD. Based on current estimates the breakdown is 31% (\$14 million) water, 69% (\$31 million) wastewater. Wastewater funded components include the Morena Pump Station and Morena Pipeline Project. Water funded components include the Brine Line, Water Main Replacements on Morena Blvd, Pure Water Pipeline and Dechlor Facility, and Subaqueous Pipeline projects.
---	--

Fiscal impact to the Metro JPA:	\$10.3 million (33% of the \$31 million).
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Capital Improvement Program:

New Project?	Yes <u>X</u> No ____ N/A ____
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Existing Project?	Yes ____ No <u>X</u> Upgrade/addition ____ Change ____
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Previous TAC/JPA Action:

N/A

Additional/Future Action:

Metro JPA presentation planned for March 01, 2018.

Environment Committee planned for March 08, 2018.

City Council Action:

City Council approval of the proposed agreement is anticipated in April 2018.

Background: *Provide background information on the need for the project*

See discussion below.

Discussion: *Provide information on decisions made to advance the project*

San Diego's imported water supplies face increasing stresses from a variety of sources. As a result, the region's supplies are becoming less reliable and more expensive. These circumstances, and the threat limitation on San Diego's water supplies, have intensified the need for new sources of water. Pure Water San Diego is the City of San Diego's (City) 20-year program to provide a safe, secure and sustainable local drinking water supply for San Diego. Recycled water will be turned into drinkable water through the use of water purification technology. Further, Pure Water's system-wide reuse will significantly reduce flows to the Point Loma Wastewater Treatment Plant and will make San Diego more water independent. On April 29, 2014, City Council adopted Resolution Number R-308906 supporting the Pure Water Program.

While City employees have the expertise to perform some of the construction management services, the nature of the work is highly complex and of great magnitude; also the project includes components that are beyond in-house expertise. It is important to have a construction management team with the expertise and knowledge of working on similar facilities, who have the expertise to understand multi-discipline engineering functions, and can handle a large workload.

This construction management contract will be for the Pure Water Phase 1 conveyance projects. This include the Morena Pump Station, Morena Pipeline, Pure Water Pipeline and Dechlorination Facility, and Subaqueous Pipeline projects. Construction Management (CM) services will include general CM support services such as project controls and contract compliance, preconstruction services such as constructability reviews, and CM field services such as inspection, start-up/commissioning, cost estimating support Project and implementation and administration of an Owner Controlled Insurance Program (OCIP). It will be an as-needed contract, whereby work will be authorized on a task order basis.

The City advertised the Contract and issued a Request for Proposals on September 11, 2017. Four (4) firms responded to the advertisement and they were all interviewed on November 28, 2017. Dexter Wilson represented the Metro JPA as a member of the interview panel. CH2M Hill, Inc. was selected as most qualified. Task orders for this contract will be issued on an as-needed basis and managed by Public Works Construction Management and Field Services and Public Utilities staff.

This contract will be for five (5) years and will cover construction management services for the Pure Water Phase 1 – Conveyance projects. The total contract amount shall not exceed \$45,000,000. This is one (1) of two (2) as-needed construction management contracts being secured for the Pure Water program; the first one is for treatment and facilities projects, which is being approved under a separate action.

Project Schedule: The table below presents the anticipated schedule.

Activity	Date
Metro JPA/ Metro Commission	March 01, 2018
Environmental Committee	March 08, 2018
City Council Approval	April 10, 2018

Bid Results: *If bidding was done provide bidding format and results*
Not Applicable.

Public Utilities Department
Pure Water Division

As-Needed Construction Management Services – Conveyance
Projects
Agreement with CH2M Hill, Inc.

John Helminski
Assistant Public Utilities Director

Metro Commission/JPA
March 1, 2018



Agreement Purpose

Provide Construction Management Services for Pure Water Phase 1 Conveyance Project.



Key Scope Elements

Preconstruction CM Services:

- Constructability Reviews

General CM Services:

- CM Plan Development
- Safety Management
- Project Controls
- Contract Compliance

Project Specific CM Services:

- Field and Special Inspections
- Environmental Compliance Assistance
- Testing/Start-up/ Commissioning Services
- Contract Closeout
- Cost Estimating Support
- Assist in Claim Resolution As Needed

CH2M Hill, Inc. Qualifications

- Recent construction management of similar-size and complex capital programs
- Breadth of water and wastewater construction management experience
- Deep bench strength of local resources
- Proactive CM approach
- Understanding of the unique nature of doing business in the City and coordinating with local communities

Selection Process

- Request for Proposal advertised, September 2017
- Four (4) teams submitted proposals, both teams interviewed: Arcadis U.S. Inc; Louis Berger U.S., Inc.; Ch2m Hill, Inc.; Jacobs Project Management Co.
- Selection Panel:
 - *JPA Representative
 - Dexter Wilson
 - * City of SD, Public Utilities:
 - John Helminski
 - Rania Amen
 - *City of SD, Equal Opportunity
 - Contracting - Claudia Abarca
 - * City of SD, Public Works:
 - Wendy Gamboa
- CH2M Hill, Inc. was selected as the most qualified team

Selection Process and Contract Terms

- September 2017, Request for Proposal (RFP) advertised
- Four teams submitted proposals, all teams interviewed
- CH2M Hill, Inc. was selected as the most qualified team
- Total not-to-exceed contract amount: \$45,000,000
- Contract duration: 5 years
- Work to be authorized on a task-order basis

Projected Expenditure

Total Conveyance CM Contract Not-To-Exceed:	\$45M
Wastewater % of Total Conveyance Cost:	~65%
Wastewater Portion of Conveyance CM Contract:	~\$29M
JPA portion of the Contract (33%)	~\$9.7M

Projected Expenditures Per Fiscal Year

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Wastewater	\$1,170,000	\$2,470,000	\$12,060,000	\$10,680,000	\$2,680,000
JPA-Only	\$390,000	\$820,000	\$4,020,000	\$3,560,000	\$890,000

Based on current project schedules

CM Conveyance Contract Approval Schedule

Activity	Date
Metro TAC	February 2018
Metro JPA/Metro Commission	March 2018
Environment Committee	March 2018
City Council Approval	April 2018
CM Notice to Proceed	May 2018

Attachment 9

MetroTAC

Update/Report

**Metro TAC Work Plan
Active & Pending Items
October 2017
*Updated Items in Red Italics***

Active Items	Description	Member(s)
<i>Muni Transportation Rate Study Working Group</i>	<i>San Diego has hired Carollo Engineers to review the existing transportation rate structure. A work group has been formed to review and give input. First meeting will be in December 2017. Although this is a muni issue it is included on the work plan due to its significance and potential effect on all Metro TAC members.</i>	Dan Brogadir Erin Bullers Mark Niemiec Dexter Wilson Karyn Keese SD staff
<i>Point Loma Permit Ad Hoc TAC</i>	<i>Metro Commission/JPA Ad Hoc established 9/17. GOAL: Create regional water reuse plan so that both a new, local, diversified water supply is created AND maximum offload at Point Loma is achieved to support legislation for permanent acceptance of Point Loma as a smaller advanced primary plant. Minimize ultimate Point Loma treatment costs and most effectively spend ratepayer dollars through successful coordination between water and wastewater agencies. 10/17: Group has met several times. Discussions are ongoing.</i>	Jerry Jones Jim Peasley Ed Spriggs Bill Baber Steve Padilla Metro TAC staff & JPA consultants
<i>Pure Water EIR Comment Ad Hoc Sub Committee</i>	<i>Created at September 2017 Metro TAC meeting. Purpose to provide technical review of the Pure Water Program EIR and provide draft comments for Metro TAC/JPA review. 10/17: Dexter Wilson & Carmen Kasner reviewed their comments w/Metro TAC. They will forward comments to Chair Humora & he will forward to San Diego.</i>	Dexter Wilson Carmen Kasner Lisa Coburn-Boyd Paula de Sousa Mills
Pure Water Facilities Working Group	This subcommittee was formed by Metro TAC and is a technical group of engineers and supporting financial staff to work with San Diego staff and consultants on cost allocations for proposed Pure Water facilities. This group meets at least monthly. Current projects include North City and MBC expansions. First meeting was 3/24/17. Roberto Yano is the chair. 5/17: Group continues to meet monthly with PUD and PWP consultants. Reviewed and accepted cost allocation for MBC. 7/17: Facilities WG has submitted their comments to the City of SD on the 30% design of the North City Expansion Project. They are working cooperatively with PUD staff and consultants in the review of the design and their comments. 9/17: Positive progress, reviewed Construction package 1 and 3 and provided comments <i>10/17: Continued work w/SD on cost allocation of major PWP facilities. Projected draft cost allocation document in November/December 2017.</i>	Yazmin Arellano Dan Brogadir Steve Beppler Al Lau Scott Tulloch Dexter Wilson Roberto Yano SD staff & consultants
Sample Rejection Protocol Working Group	7/16: The sample rejection protocol from the B&C 2013 report has been under discussion between PUD staff and Metro TAC. A working group was formed to deal with this highly technical issue and prepare draft recommendations on any changes to current sampling procedures. The existing protocol is to be used through FY17. If changes are approved to the protocol they will be implemented in FY18. 1/17: Work group continues to meet monthly. 6/17: Working Group has complete their review. Three work items to be brought forward at June Metro TAC and during the next fiscal year quarter: 1) Edgar Patino will write memo to support decisions of working group. 2) PUD financial staff to provide workshop for PAs during next fiscal year quarter to go over strength based billing and how to understand sampling data and quarterly billings. Training session to be videotaped and uploaded to the JPA website 3) Dexter Wilson to provide draft protocol on how to read and validate quarterly billings.	Dennis Davies Dan Brogadir Al Lau Dexter Wilson Erin Bullers SD staff

**Metro TAC Work Plan
Active & Pending Items
October 2017**
Updated Items in Red Italics

Active Items	Description	Member(s)
PLWTP Permit Ad Hoc Working Group	1/17: Greg Humora and Scott Tulloch continue to meet with stakeholders. . Milestones are included in each month Metro TAC and Commission agenda packet.	Greg Humora Scott Tulloch SD staff & consultants Enviro members
Flow Commitment Working Group	6/16: Upon the request of Metro Com Chair Jim Peasley Chairman Humora created a working group to review the Flow Commitment section of the Regional Agreement and make recommendations on the fiscal responsibilities of members who might withdraw their flow from the Metro System. The Work Group held their first meeting June 24, 2016. Yazmin Arellano chairs the work group. 1/17: Work group continues to meet monthly. 4/17: Group has prepared draft RFP to hire engineering consultant to update Pt. Loma capacities. 7/17: Working Group is waiting for additional data from PUD staff and is finalizing the scope and selection of a consultant for the Pt. Loma Cost Capacity Study <i>10/17: Metro System Sewage Generated Flow projections worksheet handed out. Copy attached.</i>	Yazmin Arellano Roberto Yano Eric Minicilli Al Lau SD staff Erin Bullers Karyn Keese
Social Media Working Group	6/16: Upon the request of Metro Com Chair Jim Peasley Chairman Humora created a working group to research and provide input on the creation of policies and procedures for Metro JPA social media. Mike Obermiller will chair this work group. He sent out an email to all Metro TAC members requesting copies of their agency's policies. 9/16: A draft policy has been approved by Metro TAC and will be presented to the Commission in October by Alexander Heide. 1/17: Draft policy and consultants contracts to be reviewed by Finance Committee in April 2017. 5/17: Finance Committee reviewed budget and requested scope/fee from NV5 for monitoring only 6/17: Alex Heide to research monitoring software and bring back report to next Finance Committee Meeting. Language included in NV5 2018 contract to provide social media support services but they will not proceed with task unless approved by JPA	Mike Obermiller Alexander Heide
Secondary Equivalency	5/14: Definition of secondary equivalency for Point Loma agreed to be enviros 12/14: Cooperative agreement signed between San Diego and enviros to work together to pass legislation for secondary equivalency (until 8/1/19) San Diego indicated that passage of Federal legislation is not possible under the current political environment. San Diego is exploring options for State legislation 9/15: Letter received from EPA endorsing modified permit for Point Loma 6/16: Pursuit of Federal Legislation will be held off until after the November 2016 election. City of San Diego to consult with DC lobbyists on 2/4/17 6/17: Mayor Faulconer to meet with EPA Washington re: proceeding with Admin Fix. JPA to send letter stating that they do not support Admin Fix and request pursuit of permanent legislation instead. <i>10/17: SD is pursuing both Admin Fix and Secondary Equivalency legislation in Washington; Ad Hoc to monitor efforts. Updates to be provided by SD staff/consultants at each Metro Commission meeting.</i>	Greg Humora Scott Tulloch
Pure Water Program Cost Allocation Working Group	A working group was formed to discuss Pure Water program cost allocation policies. 9/16: Concepts to be refined by Metro TAC and San Diego staff for presentation to Commission 1/17. 4/17: This group is currently being supported on a technical level by the Pure Water Facilities Subcommittee. 7/17: Working group is reviewing full PWP components list with PUD staff.	Greg Humora Scott Tulloch Roberto Yano Karyn Keese SD staff & consultants

**Metro TAC Work Plan
Active & Pending Items
October 2017**
Updated Items in Red Italics

Active Items	Description	Member(s)
Pure Water Program Cost Allocation Metro TAC Working Group	5/14: Draft facility plan and cost allocation table provided to Metro TAC working group 3/15: Draft cost allocation presentation provided to Metro TAC	Greg Humora Scott Tulloch Rick Hopkins Roberto Yano Al Lau Bob Kennedy Karyn Keese
Exhibit E Audit	6/16: FY 2013 audit accepted by Metro Commission; 9/16: FYE 2014 audit accepted by Metro Commission. FYE 2015 audit report to be issued by end of 2016 and then all audits will be caught up. 1/17: FYE 2015 to be issued in February 2017. FYE 2016 fieldwork is underway with anticipated draft 7/17. 3/17: FYE 2015 audit report issued. Acceptance pending resolution of PWP cost allocation for cost incurred in that fiscal year. 5/17: FYE 2015 audit to move forward as requested costs have been received. FYE 2016 audit field work complete. 6/17: FYE 2015 audit accepted by JPA with assurances that once the PWP cost allocation is complete and approved by all parties that incurred costs will be adjusted as necessary to approved split of shared costs between water and wastewater. FYE 2016 audit field work complete. Completion anticipated in October 2017. <i>10/17: FYE 2017 Exhibit E Audit has begun.</i>	Karyn Keese Karen Jassoy
Amend Regional Wastewater Disposal Agreement	The addition of Pure Water facilities and costs will likely require the amendment of the 1998 Regional Wastewater Disposal Agreement. The Padre Dam billing errors have led to a need to either amend the Agreement and/or develop administrative protocols to help resolve potential future billing errors. After Pure Water cost allocation had been agreed to this effort will begin.	Greg Humora Roberto Yano Dan Brogadir Paula de Sousa Mills Karyn Keese
Management of Non-Disposables in Wastewater	9/13: Eric Minicilli handed out a position paper prepared by the NEWEA. 6/15 Chairman Humora provided attached from SCAP. 2/16: Chairman Humora distributed Robbins Geller Rudman & Dowd memorandum.	Eric Minicilli
2015/16 Transportation Rate Update	5/14: Metro TAC approved 2014 transportation rate w/caveat that PUD staff hires a consultant to review/revise methodology for 2015.	Al Lau Dan Brogadir Karyn Keese
IRWMP	8/15 RAC minutes included in August Metro TAC agenda. Padre Dam received a \$6 million grant for their project. 9/16: June 2, 2016 and August 3, 2016 minutes presented to Metro TAC. 12/16: Roberto Yano and Yazmin Arellano appointed to IRWMP. 5/17: Roberto Yano providing monthly updates as well as grant funding opportunities 6/17: Robert Yano urged Metro TAC members to visit the IRWMP website to keep on top of funding opportunities: http://www.sdirwmp.org ; Yazmin to attend June meeting. <i>10/17: Roberto Yano requested comments from TAC on storm water presentation to be provided to IRWMP 10/17: Yazmin gave update on Prop 1 and other funding sources. Members should monitor funding opportunities at: http://www.sdirwmp.org</i>	Roberto Yano Yazmin Arellano
"No Drugs Down the Drain"	The state has initiated a program to reduce pharmaceuticals entering the wastewater flows. There have been a number of pharmaceutical collection events within the region sponsored by law enforcement.	Greg Humora
Strength Based Billing Evaluation	San Diego will hire a consultant every three years to audit the Metro metered system to insure against billing errors.	Al Lau Dan Brogadir Karyn Keese

**Metro TAC Work Plan
Active & Pending Items
October 2017**
Updated Items in Red Italics

Active Items	Description	Member(s)
Grease Recycling	To reduce fats, oils, and grease (FOG) in the sewer systems, more and more restaurants are being required to collect and dispose of cooking grease. Companies exist that will collect the grease and turn it into energy.	Eric Minicilli
Point Loma Modified NPDES Permit	1/15: Permit was submitted. EPA has begun their review. 11/16 first possible date at the Regional Board for consideration. 12/16: First hearing of Permit Application held at San Diego Regional Board. 4/17: Regional Board hearing on accelerated PWP facilities timeline 4/12/17. 5/17: Coastal Commission hearing 5/10/17. 6/17: Coastal Commission approved modified permit application. EPA to issue permit within the next few months. <i>10/17: Permit issued</i>	Greg Humora Scott Tulloch Karyn Keese
Changes in water legislation	Metro TAC and the Board should monitor and report on proposed and new legislation or changes in existing legislation that impact wastewater conveyance, treatment, and disposal, including recycled water issues	Paula de Sousa Mills
Border Region	Impacts of sewer treatment and disposal along the international border should be monitored and reported to the Board. These issues would directly affect the South Bay plants on both sides of the border.	New Board Members to be Appointed

Metro System Sewerage Generated Flow Projections

	with Drought Restriction			
	DWF (MGD)	DWF (MGD)	Median Flow (MGD)	10-Yr Flow (MGD)
2015	146.5	158.5	163.7	174.3
2016	146.9	159.2	164.4	175.2
2017	147.3	159.9	165.2	176.1
2018	147.7	160.7	166.0	177.0
2019	148.1	161.5	166.9	178.1
2020	148.4	162.4	167.9	179.1
2021	148.4	162.9	168.5	179.9
2022	148.3	163.5	169.1	180.6
2023	148.3	164.1	169.8	181.4
2024	148.2	164.8	170.5	182.3
2025	148.1	165.5	171.3	183.1
2026	147.9	166.2	172.0	184.0
2027	147.8	166.9	172.8	184.9
2028	147.6	167.6	173.6	185.9
2029	147.4	168.4	174.4	186.8
2030	147.2	169.2	175.3	187.8
2031	146.9	170.0	176.1	188.8
2032	146.7	170.8	177.0	189.7
2033	146.4	171.6	177.9	190.7
2034	146.1	172.4	178.7	191.8
2035	145.7	173.2	179.6	192.8
2036	146.4	173.6	180.1	193.3
2037	147.1	173.9	180.5	193.9
2038	147.8	174.3	180.9	194.4
2039	148.5	174.7	181.4	195.0
2040	149.2	175.1	181.8	195.6
2041	149.9	175.5	182.3	196.2
2042	150.5	175.9	182.7	196.8
2043	151.2	176.3	183.2	197.4
2044	151.9	176.7	183.7	198.0
2045	152.6	177.2	184.2	198.6
2046	153.3	177.6	184.7	199.2
2047	154.0	178.0	185.2	199.9
2048	154.7	178.5	185.7	200.5
2049	155.4	178.9	186.2	201.1
2050	156.0	179.4	186.7	201.8

- Flow is an annual average daily flow based on SANDAG Series 13
- UGR was calibrated at 60 gpdpc (residential) and gradually decreasing to 55 gpdpc by 2035 and 53 gpdpc by 2050. UGR of approximately 18 gpdpc was assumed for employment
- UGR under drought restrictions was assumed 10% reduced from the base year 2014 (61 gpdpc) for 2015 then it gradually declines further more to about 45 gpdpc for residential in 2035 while the employment UGR declines about 10% between 2015 and 2035

Option 1: CEPT + Conventional Activated Sludge + Secondary Clarifiers → 30-50 mgd average treatment capacity

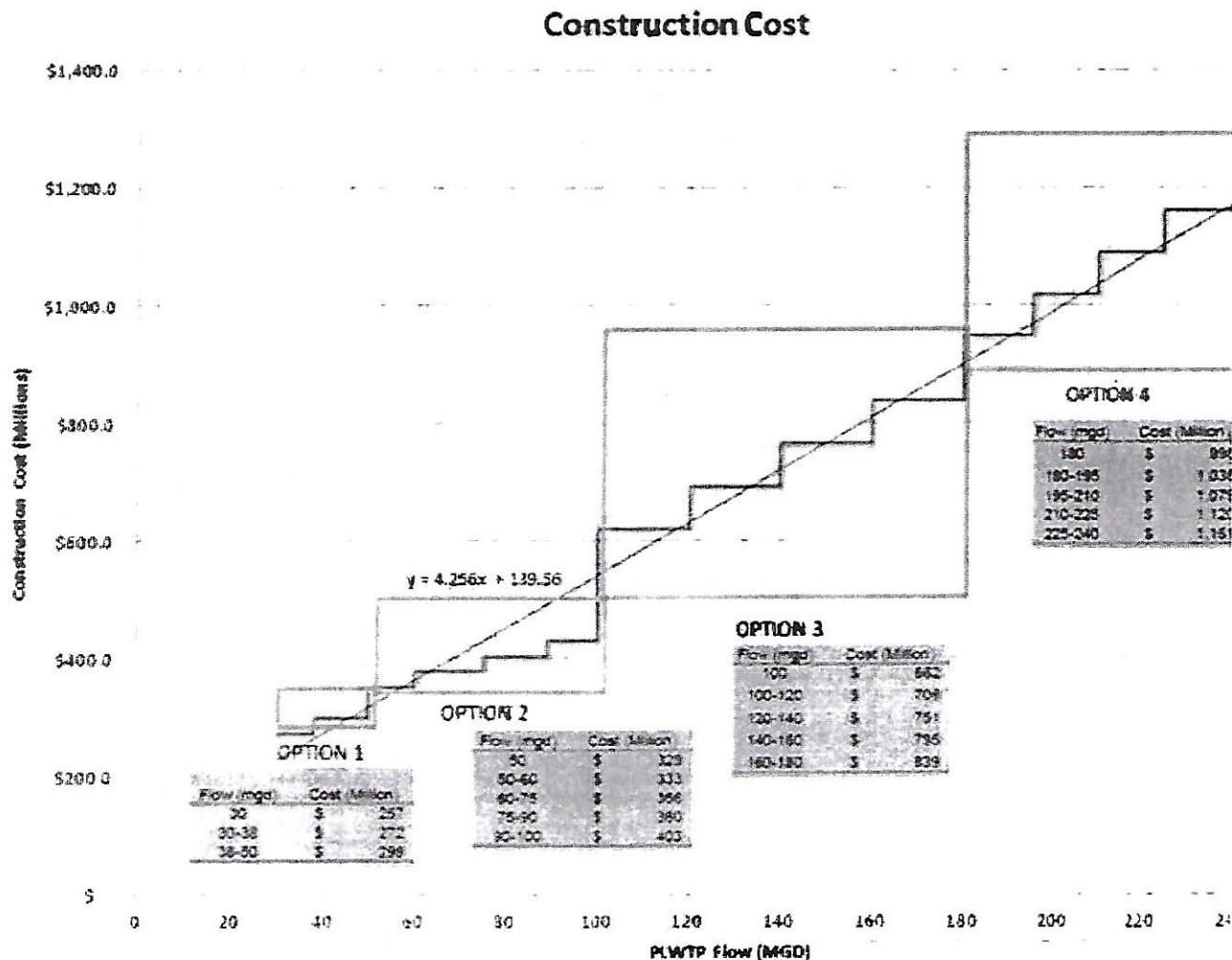
Option 2: High Rate Clarifier + Conventional Activated Sludge + DAF → 50-100 mgd

Option 3: CEPT + BAF → 100-180 mgd

Option 4: High Rate Clarifier + BAF → 180-240 mgd

Construction cost estimate for Point Loma based on capacity in 2013 dollars are below for your understanding of the ballpark cost – you need to do ENR conversions.

Estimates included O&M costs as well.



Hope this helps!

Seval Sen, P.E.

Engineer

Padre Dam Municipal Water District

Engineering and Planning

P 619 253 4631

ENR 2013 10,289

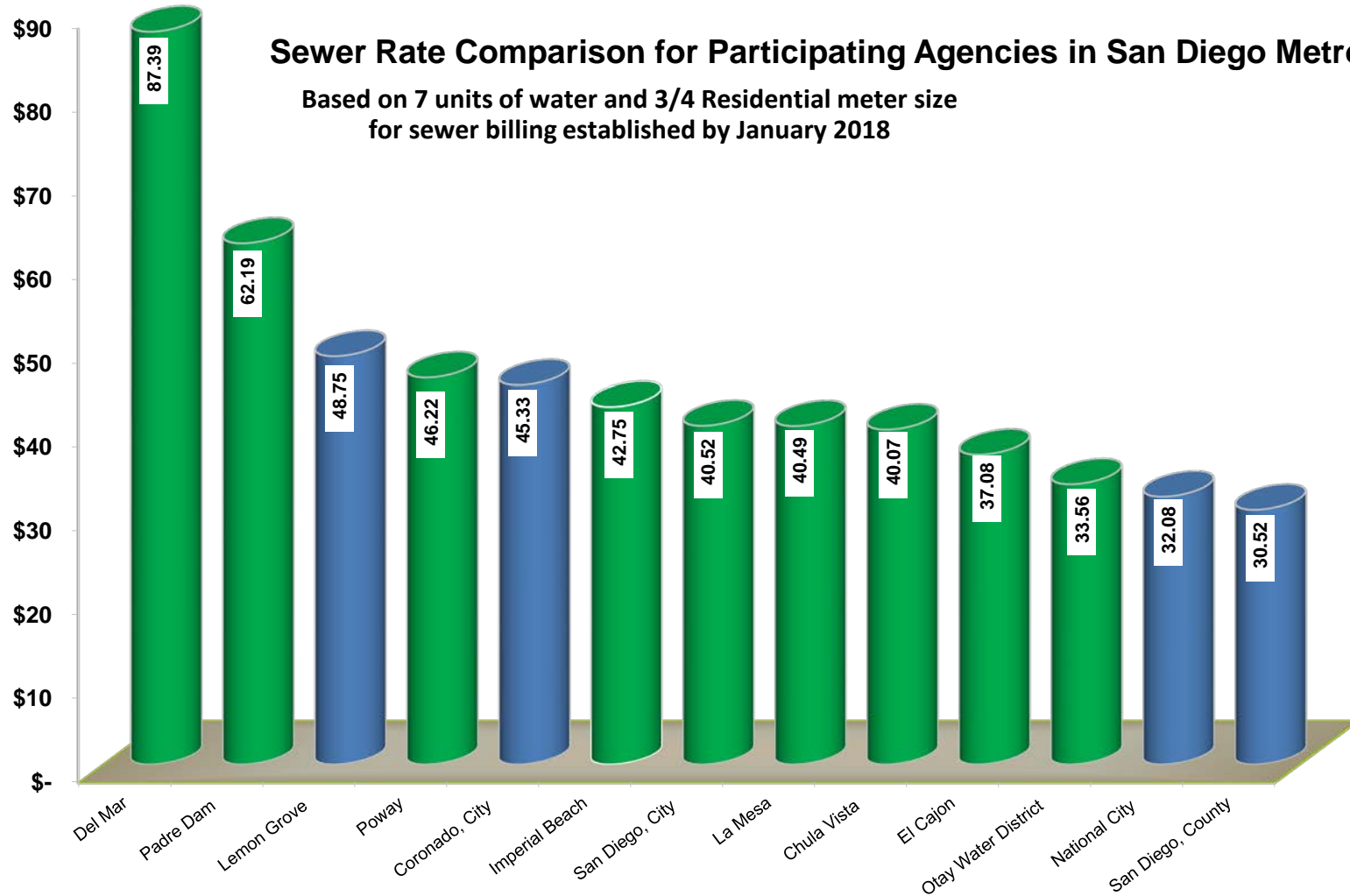
ENR 2017 11,642

Factor 1.1315

180 mgd	Option 3	2013	839m
		2017	949m
100 mgd	Option 2	2013	403m
		2017	456m

Sewer Rate Comparison for Participating Agencies in San Diego Metro System

Based on 7 units of water and 3/4 Residential meter size
for sewer billing established by January 2018



- Flat Sewer Rate
- Water consumption based sewer rate

Metro TAC Participating Agencies Selection Panel Rotation

Agency	Representative	Selection Panel	Date Assigned
Padre Dam	Neal Brown	IRWMP – Props 50 & 84 Funds	2006
El Cajon	Dennis Davies	Old Rose Canyon Trunk Sewer Relocation	9/12/2007
La Mesa	Greg Humora	As-Needed Piping and Mechanical	11/2007
National City	Joe Smith	MBC Additional Storage Silos	02/2008
Otay Water District	Rod Posada	As-Needed Biological Services 2009-2011	02/2008
Poway	Tom Howard	Feasibility Study for Bond Offerings	02/2008
County of San Diego	Dan Brogadir	Strategic Business Plan Updates	02/2008
Coronado	Scott Huth	Strategic Business Plan Updates	09/2008
Coronado	Scott Huth	As-needed Financial, HR, Training	09/2008
PBS&J	Karyn Keese	As-needed Financial, Alternate HR, Training	09/2008
Otay Water District	Rod Posada	Interviews for Bulkhead Project at the PLWTP	01/2009
Del Mar	David Scherer	Biosolids Project	2009
Padre Dam	Neal Brown	Regional Advisory Committee	09/2009
County of San Diego	Dan Brogadir	Large Dia. Pipeline Inspection/Assessment	10/2009
Chula Vista	Roberto Yano	Sewer Flow Monitoring Renewal Contract	12/2009
La Mesa	Greg Humora	Sewer Flow Monitoring Renewal Contract	12/2009
Poway	Tom Howard	Fire Alarm Panels Contract	12/2009
El Cajon	Dennis Davies	MBC Water System Improvements D/B	01/2010
Lemon Grove	Patrick Lund	RFP for Inventory Training	07/2010
National City	Joe Smith	Design/Build water replacement project	11/2010
Coronado	Scott Huth	Wastewater Plan update	01/2010
Otay Water District	Bob Kennedy	RFP Design of MBC Odor Control Upgrade/Wastewater Plan Update	02/2011
Del Mar	Eric Minicilli	Declined PS 2 Project	05/2011
Padre Dam	Al Lau	PS 2 Project	05/2011
County of San Diego	Dan Brogadir	RFP for As-Needed Biological Services Co.	05/2011
Chula Vista	Roberto Yano	North City Cogeneration Facility Expansion	07/2011
La Mesa	Greg Humora	confined space RFP selection panel	10/2011
Poway	Tom Howard	COSS's for both Water and WW	10/2011
El Cajon	Dennis Davies	Independent Accountant Financial Review & Analysis – All Funds	01/2012

Lemon Grove	Mike James	MBC Dewatering Centrifuges Replacement (Passed)	01/2012
National City	Joe Smith	MBC Dewatering Centrifuges Replacement (Passed)	01/2012
Coronado	Godby, Kim	MBC Dewatering Centrifuges Replacement (Passed)	01/2012
Otay Water District	Bob Kennedy	MBC Dewatering Centrifuges Replacement (Accepted)/Strategic Planning Rep	01/2012
Del Mar	Eric Minicilli	New As Need Engineering Contract	02/2012
Padre Dam	Al Lau	PA Rep. for RFQ for As Needed Design Build Services (Passed)	05/2012
County of San Diego	Dan Brogadir	PA Rep. for RFQ for As Needed Design Build Services (Cancelled project)	05/2012
Chula Vista	Roberto Yano	As-Needed Condition Assessment Contract (Accepted)	06/2012
La Mesa	Greg Humora	New programmatic wastewater facilities condition (Awaiting Response)	11/2012
Poway	Tom Howard	Optimization Review Study	01/2013
El Cajon	Dennis Davies	PUD 2015 Annual Strategic Plan	1/15/14
Lemon Grove	Mike James	As-Needed Engineering Services (Passed)	7/25/14
National City	Kuna Muthusamy	As-Needed Engineering Services	7/25/14
Coronado	Ed Walton	Strategic Planning	01/2014
Otay Water District	Bob Kennedy	Strategic Planning (Volunteered, participated last year)	01/2014
Del Mar	Eric Minicilli	Pure Water Program Manager Services	9/1/14
Padre Dam	Al Lau	Pure Water Program Manager Services	9/1/14
County of San Diego	Dan Brogadir	As-Needed Condition Assessment Contract	3/24/2015
Chula Vista	Roberto Yano	Out on Leave	6/10/15
La Mesa	Greg Humora	North City to San Vicente Advanced Water Purification Conveyance System	6/10/15
Poway	Mike Obermiller	Real Property Appraisal, Acquisition, and Relocation Assistance for the Public Utilities Department	11/30/15
El Cajon	Dennis Davies	PURE WATER RFP for Engineering Design Services	12/22/15
Lemon Grove	Mike James	PURE WATER RFP Engineering services to design the North City Water reclamation Plant and Influence conveyance project	03/16/15
National City	Kuna Muthusamy	Passes	04/04/2016
Coronado	Ed Walton	As-Needed Environmental Services - 2 Contracts	04/04/2016
Otay Water District	Bob Kennedy	As Needed Engineering Services Contract 1 & 2	04/11/2016
Del Mar	Eric Minicilli	Pure Water North City Public Art Project	08/05/2016
Padre Dam	Al Lau	Biosolids/Cogeneration Facility solicitation for Pure Water	08/24/2016
County of San Diego	Dan Brogadir	Pure Water North City Public Art Project	08/10/2016
Chula Vista	Roberto Yano	Design Metropolitan Biosolids Center (MBC) Improvements Pure Water Program	9/10/2016
La Mesa	Greg Humora	Design of Metropolitan Biosolids Center (MBC) Improvements	9/22/16
Poway	Mike Obermiller	Electrodialysis Reversal (EDR) System Maintenance	12/7/16
El Cajon	Yazmin Arellano	As-Needed Construction Management Services for Pure Water	3/13/17

Lemon Grove	Mike James		
National City	Kuna Muthusamy		
Coronado	Ed Walton		
Otay Water District	Bob Kennedy		
Del Mar	Eric Minicilli		
Padre Dam	Al Lau		
County of San Diego	Dan Brogadir		
Chula Vista	Roberto Yano		
La Mesa	Greg Humora		
Poway	Mike Obermiller		
El Cajon	Dennis Davies		
Lemon Grove	Mike James		
National City	Kuna Muthusamy		
Coronado	Ed Walton		

Attachment 12

Pure Water

Program

Update

Public Utilities Department

Pure Water Program Implementation Update

Metro TAC

March 1, 2018

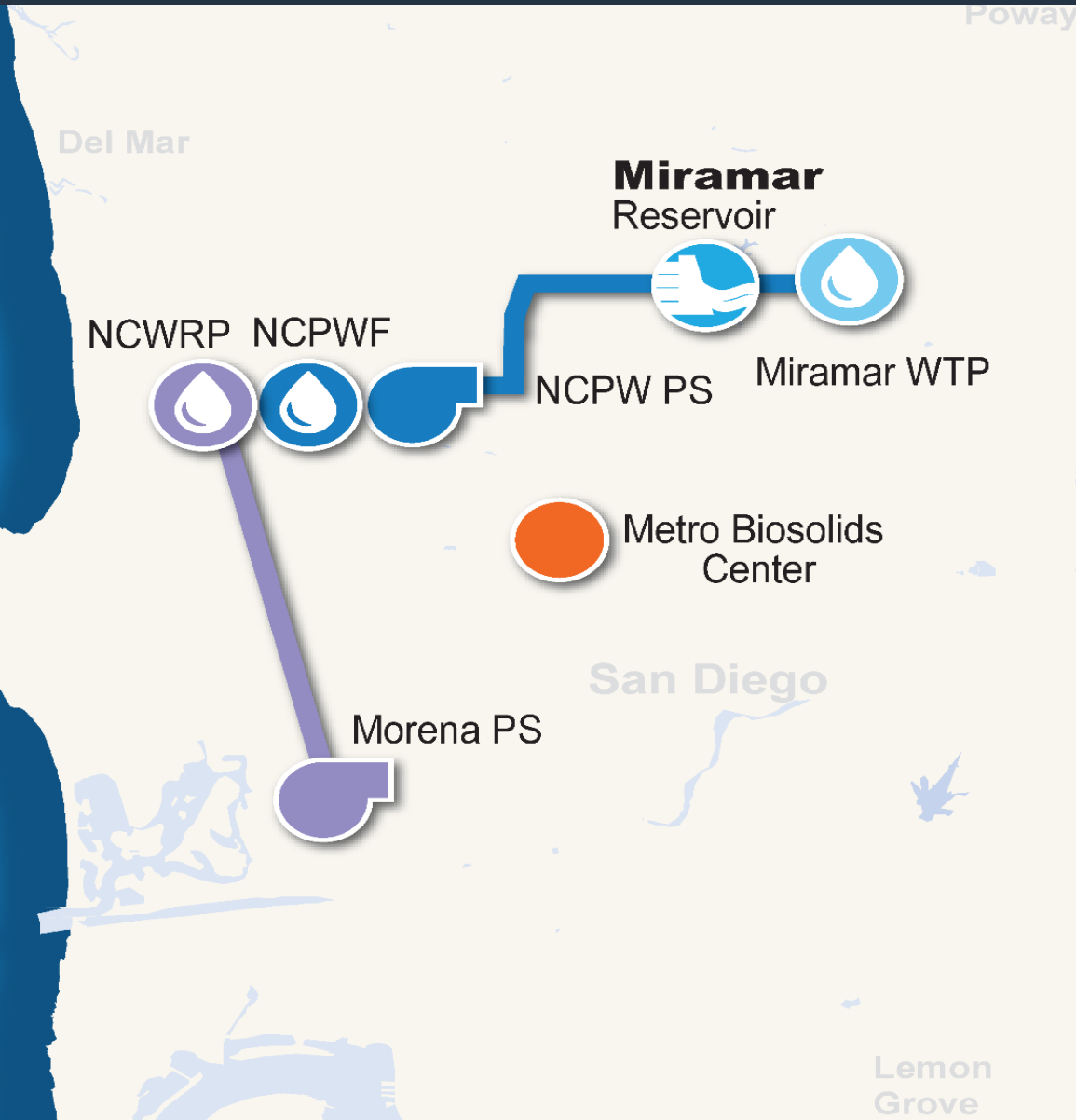


Photo by MrGAIL

- North City Phase 1 Project Delivery
- Regulatory Approval Process
- Research and Optimization
- Environmental Review
- Debt Management
- Public Outreach
- Next Steps

- Phase 1 Design
 - All core project design contracts nearing completion
 - Renewable Energy Project - Request for statement of qualifications advertised
- Construction Management
 - Public Utilities and Public Works Departments selecting construction management firms





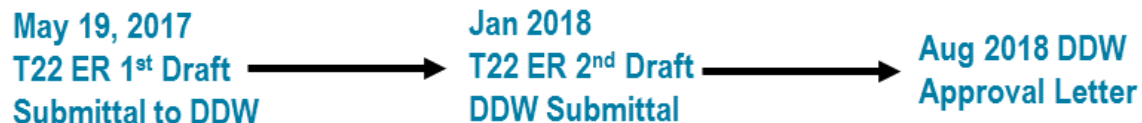
Facility	Design Level Percent Submittal Date
Morena Pump Station and Pipeline	60 percent September 2017
North City Water Reclamation Plant Expansion	60 percent October 2017
North City Pure Water Facility	60 percent October 2017
North City Pure Water Pump Station and Pipeline	90 percent August 2017
MBC Improvements	60 percent December 2017



- Point Loma Modified NPDES (Waiver) Renewal
 - ✓ Regional Water Quality Control Board (RWQCB) Approved
 - ✓ Coastal Commission Approved
 - ✓ US EPA Final Permit Approved
 - ✓ Renewed Modified Permit (Waiver) Approved

SD Regulatory Process Schedule

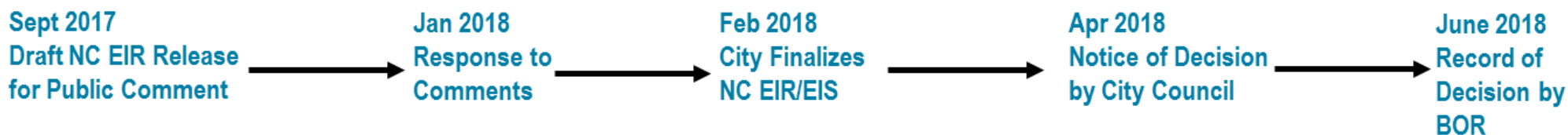
Title 22 ER



Miramar NPDES



EIR/EIS





■ Research Completed

- Sodium Hypochlorite
- Analyzers
- Membrane Filtration (MF) and Ultraviolet (UV) Systems Pre-selection
- Reverse Osmosis Membrane Pre-qualification
- Reverse Osmosis Brine Study

■ Ongoing Research

- Antiscalant Pre-selection
- No Chloramines
- Miramar Drinking Water Treatment Plant Pilot and Pipe Loop Studies

- Three alternatives evaluated: No Project, Miramar Reservoir Alternative, and San Vicente Alternative

Significant Environmental Impacts		
Area	Miramar Alternative	San Vicente Alternative
Aesthetics		✓
Air Quality/ Odor		✓
Noise	✓	✓
Transportation	✓	✓

Environmental Impacts that can be Mitigated		
Area	Miramar Alternative	San Vicente Alternative
Land Use	✓	✓
Air Quality/ Odor	✓	
Historical Resources	✓	✓
Paleontological Resources	✓	✓
Biological Resources	✓	✓
Health & Safety/ Hazards	✓	✓
Public Utilities	✓	✓



Photo by MrGAIL

- Miramar Reservoir Water Quality and Recreational Fishing
 - No significant difference between existing condition and future condition
 - No loss or impairment of beneficial uses
 - A functioning aquatic ecosystem would continue to exist
 - No significant impact to warm water fishery

■ Estimated Funding Opportunities

■ Pure Water Phase I Approximate Program Costs: \$1.1-1.3 Billion

Water Costs	\$700M-800M
Wastewater Costs	\$400M-500M

■ Water Storage Investment Program (WSIP) Grant Application, Proposition 1

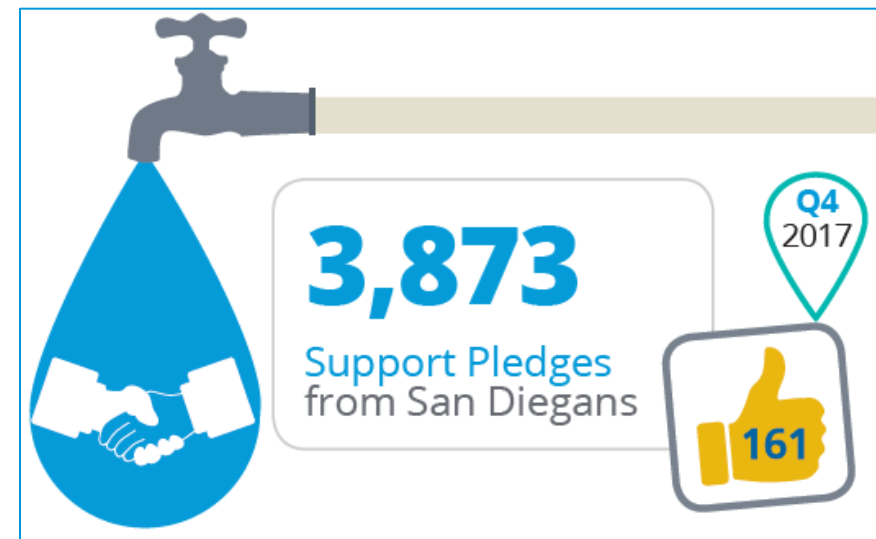
- Applied for \$219M Grant
- Anticipated June 2018

■ Clean Water SRF loan & EPA WIFIA applications

- SRF loans offer lowest cost source of funding with 30 year repayment
 - Applied for \$1.27 billion
- EPA WIFIA additional low cost funding source with 35 year repayment option. WIFIA capped at an estimated \$530M

■ Local Resource Program Funding (Metropolitan Water District of Southern California)

■ Pay-go funds, bonds/notes are additional funding sources as required



- City Council Record of Decision on Final NC EIR/EIS
 - Anticipated April 2018
- Construction Management firms begin Constructability review
 - Anticipated May 2018
- DDW Approval of Title 22 Engineering Report
 - Anticipated August 2018
- Miramar NPDES Permit from Regional Water Quality Control Board
 - Anticipated December 2018

SD Pure Water Supporters



Pure Water Program Annual Progress Report

2017



City of San Diego
Public Utilities Department

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1. Introduction

The Pure Water San Diego Program (Pure Water) made substantial progress over the last year, with efforts focused on the implementation of Phase 1 – North City projects.

This Pure Water Program Annual Progress Report (Progress Report) highlights achievements over the last year, provides a status update on Phase 1 – North City scope and schedule status and discusses critical initiatives that are in progress. No changes have been made to the Central Area and South Bay projects (Phases 2 and 3) since the distribution of the Pure Water Preliminary Capital Improvement Plan (CIP), in July 2015.

2. Pure Water Accomplishments

It has been a year of forward progress, decision-making and major accomplishments!

The table below provides an overview of this year's accomplishments; more details are provided on the following pages.

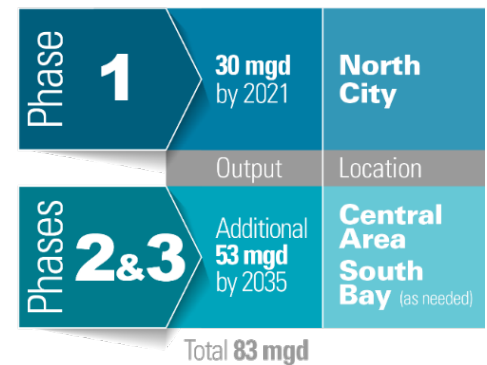
Table 1: At A Glance Accomplishments

Area of Achievement		What Was Accomplished
✓	Phase 1 – North City Program Implementation	Completed the following design milestones for Phase 1 – North City Projects: <ul style="list-style-type: none"> • 100% Design for the North City Pure Water Pipeline and Dechlorination Facility; design review is ongoing • 90% Design for the North City Pure Water Pump Station • 60% Design for the Morena Pump Station and Pipelines Project, North City Water Reclamation Plant Expansion and North City Pure Water Facility • 30% Design for the Metropolitan Biosolids Center Improvements Project • 10% Preliminary Design for North City Renewable Energy Project initiated
✓	Regulatory Progress	Submitted first draft of the Title 22 Engineering Report to the California Division of Drinking Water in May 2017 and received comments back during the first week of October 2017
✓	Environmental Review	Released draft of the Phase 1 - North City Projects Environmental Impact Report and Environmental Impact Statement for public review on September 7, 2017 and November 24, 2017, respectively
✓	Engineering and Process Optimization Accomplishments	Conducted research and improvements at the North City Demonstration Pure Water Facility (Demonstration Facility) to increase efficiency and answer design questions related to life-cycle cost savings and operational stable of future full-scale facilities
✓	Pure Water Public Outreach	Partnered with Stone Brewing on an event that was covered by more than 80 news outlets, held the second Pure Water Open House that was attended by more than 500 people and welcomed our 14,000 th Demonstration Facility tour participant
✓	Program Recognition	The City of San Diego and Stone Brewing received the 2017 Public-Private Partnership Award from the Water Reliability Coalition

3. Phase 1 – North City Implementation Update

Pure Water is the City of San Diego's (City) program that will provide 1/3 of San Diego's water supply locally by 2035. The Pure Water Program will include a system of treatment facilities, pump stations and pipelines that will be constructed in three phases.

The Pure Water Team developed the Phase 1 – North City plan to achieve 30 million gallons per day (mgd) of purified water production. Figure 1 provides an overview of the Phase 1 facilities. As of the end of 2017, all Phase 1 projects are on schedule to be completed by the end of 2021.



The Pure Water Team is being led by the Public Utilities Department; the Public Works Department and consultant staff have been integrated into the Pure Water Team to manage the design and construction of all Pure Water projects. This partnership leverages design, construction and project management expertise that will benefit Phase 1 – North City delivery. The Pure Water Team is overseeing the preliminary design and detailed design for all key Phase 1 – North City projects, which are highlighted below and detailed on the following pages:

- NC01 – Morena Pump Station and Pipelines: 60% Design Completed
- NC02 – North City Water Reclamation Plant Expansion: 60% Design Completed
- NC03 – North City Pure Water Facility: 60% Design Completed
- NC04 – North City Pure Water Pump Station and Pipeline:
 - North City Pure Water Pipeline and Dechlorination Facility: 100% Design Review Ongoing
 - North City Pure Water Pump Station: 90% Design Completed
- NC05 – North City Renewable Energy Project: 10% Preliminary Design Ongoing
- NC06 – Metropolitan Biosolids Center Improvements: 30% Design Completed
- NC07 – Miramar Drinking Water Treatment Plant Improvements: Preliminary Planning Ongoing

Figure 1: North City Project Map



Phase 1 – North City Projects

The Pure Water Team has advanced design of Phase 1 – North City projects. The scope of Phase 1 – North City projects has been refined through the completion of preliminary design and detailed design submittals. Project details are provided in the following pages:

NC01 Morena Pump Station and Pipelines Project

The Morena Pump Station and Pipelines Project (Morena Project) is designed to increase wastewater flows to the North City Water Reclamation Plant, which would require 52 mgd of wastewater to meet both Pure Water and recycled water needs.

The Morena Project would transport an annual average of 32 mgd of wastewater from four existing sanitary sewers near the intersection of Friars Road and Morena Boulevard and would use a pump station to send the wastewater north to the North City Water Reclamation Plant. This would enable the North City Water Reclamation Plant to operate consistently at 52 mgd and the new North City Pure Water Facility to produce 30 mgd of purified water to add to the drinking water supply system.

A wastewater pump station would be built at the intersection of Sherman and Custer Streets, near Morena Boulevard (see Figure 2). Two 10.7-mile wastewater pipelines would also be constructed: one pipeline would transport wastewater from the pump station to the North City Water Reclamation Plant and one would transport salts and contaminants (brine) from the North City Water Reclamation Plant to the Point Loma Wastewater Treatment Plant. The wastewater pipelines would start at Sherman Street, follow West Morena Boulevard to Clairemont Drive, continue to Genesee Avenue and go through University City to the North City Water Reclamation Plant on Eastgate Mall.

This project would also include construction of two approximately 3.5-mile water pipelines (a 16-inch water distribution pipeline and a 36-inch transmission main), which would run parallel to the wastewater pipelines along West Morena Boulevard and Morena Boulevard.

Status: Recently completed 60% Design

Figure 2: Draft Design Rendering for Morena Pump Station



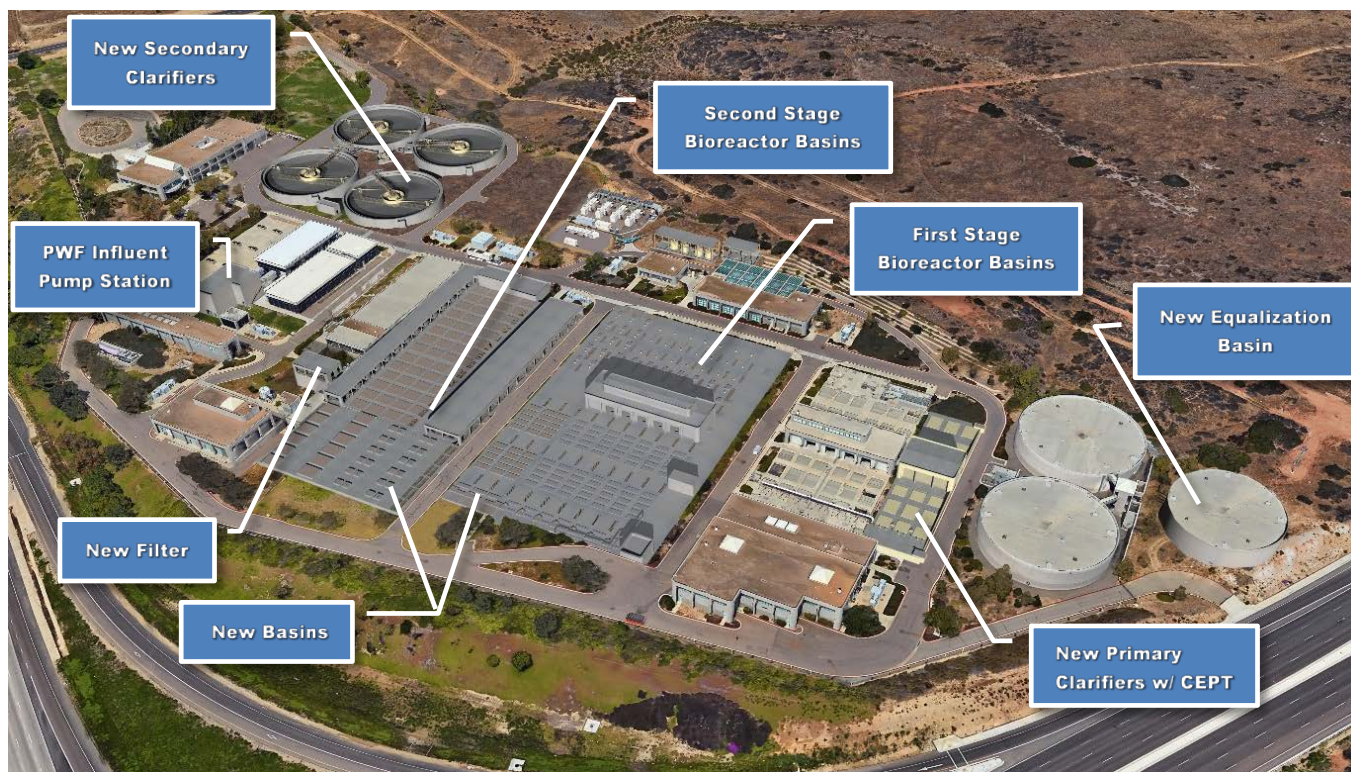
NC02 North City Water Reclamation Plant Expansion Project

The North City Water Reclamation Plant treats wastewater from several San Diego communities and distributes recycled water for irrigation and industrial purposes in the northern San Diego region. As part of the Pure Water Program, the North City Water Reclamation Plant would be expanded from producing 30 mgd to 52 mgd so the facility can continue to serve recycled water customers as well as provide recycled water to the future North City Pure Water Facility.

Major design elements for the North City Water Reclamation Plant expansion are illustrated in Figure 3 and include new secondary clarifiers, addition of chemically-enhanced primary treatment, expansion of the aeration basins, a new tertiary filter and a new equalization basin. This project also includes design of a 42.5 mgd pump station and a wastewater pipeline that would convey recycled water produced at the North City Water Reclamation Plant to the future North City Pure Water Facility. The rendering below shows the upgrades that would be made at the North City Water Reclamation Plant.

Status: Recently completed 60% Design

Figure 3: Draft Design Rendering for North City Water Reclamation Plant Expansion



NC03 North City Pure Water Facility Project

The North City Pure Water Facility would treat recycled water produced at the North City Water Reclamation Plant to purified water standards. The new facility would be constructed north of Eastgate Mall across the street from the existing North City Water Reclamation Plant. The North City Pure Water Facility would feature a state-of-the-art five-step treatment process that includes:

1. Ozonation
2. Biological Activated Carbon filters
3. Membrane filtration
4. Reverse osmosis
5. Ultraviolet light with advanced oxidation

Other North City Pure Water Facility design elements include chemical feed systems, site work, yard piping and electrical installations. The facility would also include an operations building, illustrated in Figure 4, which would house North City Pure Water Facility operations, maintenance and laboratory staff as well as a visitor center.

Once operational in 2021, the new plant would have a production capacity of up to 34 mgd. The purified water from the North City Pure Water Facility would be conveyed to Miramar Reservoir. The North City Pure Water Facility will include a public art component, which is currently in the planning stages.

Status: Recently completed 60% Design

Figure 4: North City Pure Water Facility Draft Design Rendering



NC04 North City Pure Water Pump Station and Pipeline Project

The North City Pure Water Pump Station and Pipeline Project is needed to convey purified water produced by the new North City Pure Water Facility to Miramar Reservoir.

The purified water would be pumped from the North City Pure Water Facility by a new 30 mgd pump station, which would be located on the southeast portion of the North City Pure Water Facility on Eastgate Mall. Next, the purified water would be conveyed via a pipeline that would start at Eastgate Mall, follow Miramar Road, tunnel under the Interstate 15 (I-15) Highway, and continue through the Scripps Ranch community up to Miramar Reservoir. There, the purified water would be dispersed throughout the reservoir via an underwater pipeline that would be constructed on site and installed along the base of the reservoir.

The North City Pure Water Pump Station and Pipeline Project includes the following:

- 30 mgd purified water pump station
- Over 7.5 miles of 48-inch diameter pipeline
- 0.9 miles of 12-inch to 54-inch diameter underwater pipeline at Miramar Reservoir
- Dechlorination facility (illustrated in Figure 5)

The purified water would blend with the City's imported and local water supplies and be treated again at the adjacent Miramar Drinking Water Treatment Plant and distributed to customers.

Status: 100% Design submitted for North City Pure Water Pipeline and Dechlorination Facility (design review is ongoing); 90% Design completed for the North City Pure Water Pump Station

Figure 5: Draft Design Rendering of the North City Pure Water Dechlorination Facility



NC05 North City Renewable Energy Project

The North City Renewable Energy Project would capture Miramar Landfill gas to generate energy and help meet Climate Action Plan targets to reduce greenhouse gas emissions. The project would produce the majority of power needed for the Phase 1 - North City facilities, including the expanded North City Water Reclamation Plant, North City Pure Water Facility, North City Pure Water Pump Station, and Metropolitan Biosolids Center. The City would install a new 15.4 MW generation facility at North City Water Reclamation Plant, 1.6 MW generation facility at Metropolitan Biosolids Center, landfill gas compressor station and pipeline.

Status: Currently in Preliminary Design (10%); working with Debt Management, Office of the City Attorney and consultants to finalize Request for Statement of Qualifications (RFSQ) for issuance in the first quarter of 2018

NC06 Metropolitan Biosolids Center Improvements Project

The Metropolitan Biosolids Center is the City's regional biosolids facility that receives and processes solids from both the North City Water Reclamation Plant and the Point Loma Wastewater Treatment Plant. Upgrades and improvements to the existing process systems are necessary. The major project scope elements at the Metropolitan Biosolids Center are illustrated on Figure 6 and entail improvements to the following process areas: grit removal, biosolids thickening, anaerobic digestion and centrate pump station.

Status: Recently completed 30% Design

Figure 6: Metropolitan Biosolids Center Improvements Draft Site Plan



NC07 Miramar Drinking Water Treatment Plant Improvements Project

A potential project to improve the Miramar Drinking Water Treatment Plant in support of Pure Water is being considered. More details on progress are provided on pages 9-10.

Status: Preliminary planning ongoing; Pump Station Condition Assessment completed December 2017

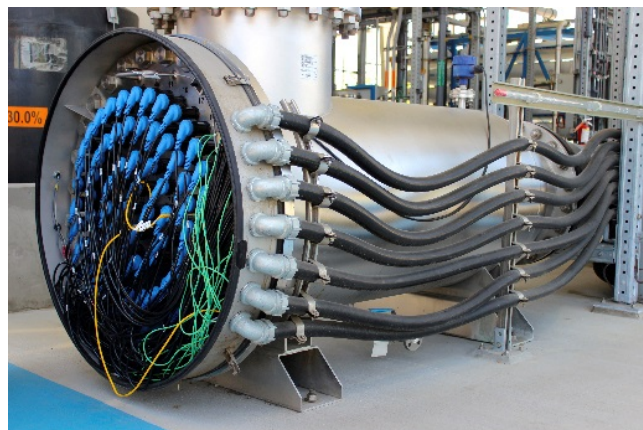
Engineering and Process Optimization Supporting Studies

The Pure Water Team has been conducting important studies to confirm program and project scope, including a full evaluation to assess the potential impacts of integrating purified water into the existing water and wastewater system.

Advanced Water Treatment Equipment Pre-selection

The Pure Water Team has undertaken a full-scale testing program to preselect membrane filtration and ultraviolet equipment and to prequalify reverse osmosis equipment. The Pure Water Team used a comprehensive testing protocol with pre-established performance standards that has allowed the City to identify which vendors will be considered further for selection of North City Pure Water Facility equipment. This approach was used to ensure the treatment equipment's performance and reliability, and to control potential change orders during construction.

Final selection of equipment was completed in 2017 and vendors are working with the North City Pure Water Facility final designer to incorporate layout and equipment needs. In addition, in 2017, the City started the process to prequalify antiscalant suppliers to ensure reliable performance of reverse osmosis membranes at the North City Pure Water Facility. Testing is scheduled to be completed in 2018 with qualifying antiscalant suppliers to be issued a Request for Proposal following testing.



Ultraviolet Disinfection Located at the North City Demonstration Pure Water Facility

Miramar Drinking Water Treatment Plant and Distribution System Impacts

Bench- and Pilot-Scale Testing

In 2016, bench-scale testing was conducted to assess the impact Pure Water will have, if any, on the drinking water system. The study evaluated the impact of blending Pure Water with other raw water supplies on the reservoirs, treatment plants, and drinking water distribution system to ensure public health protection following a change in the source water. The Pure Water Team performed in-depth data collection; assessed operation, mixing and water quality in the reservoirs; and analyzed implications for treatment plant operation via bench-scale tests. The team investigated implications of the finished water for the distribution system based on water chemistry modeling and recommended improvements and provided associated costs to mitigate any potential impacts. In 2017, to supplement the bench-scale work, additional pilot-scale testing is being conducted to validate the findings from the bench-scale work. The pilot-scale testing is scheduled to be completed in 2018.

Pump Station Condition Assessment

A condition assessment on the Miramar Reservoir Pump Station was performed in 2017. With the Pure Water program in place, the Miramar Pump Station will need to be adapted to additional flows and new operations. The condition assessment evaluates the existing condition of the Miramar Pump Station to ensure that any required upgrades to the existing pumps along with various mechanical and electrical upgrades to the valves, piping, and instrumentation and control system are completed prior to receiving purified water.

The condition assessment was completed in December 2017. The preliminary condition assessment findings are as follows: pumps and pump check valves require rehabilitation, appurtenances to the pumps and small piping require replacement, electrical power equipment is in good condition, and the station instrumentation system programmable logic controllers (PLCs) meet the current standards. Noise assessment study results indicate that the pump station, while operating at full capacity, meets noise level standards and therefore does not require any enclosure.

North City Pure Water Facility Research

The City continues to operate and maintain the Demonstration Facility, a 1 mgd plant that comprises the advanced treatment processes that will be used in the full-scale North City Pure Water Facility. The Pure Water Team conducted additional research and improvements to the Demonstration Facility to increase efficiency and answer specific design questions related to life-cycle cost savings and assuring stable operation of future full-scale facilities.

Grant-funded Research Projects

In 2017, the City was awarded two U. S. Bureau of Reclamation grant-funded research projects, which the Pure Water Team is managing. The two grant-funded research projects are titled “Site Specific Analytical Testing of Reverse Osmosis Brine Impacts to the Treatment Process” (Brine Impacts Study) and “Demonstrating Innovative Control of Biological Fouling of Microfiltration/Ultrafiltration and Reverse Osmosis Membranes and Enhanced Chemical and Energy Efficiency in Water Reuse” (No Chloramine Study).

Brine Impacts Study

A by-product of the North City Pure Water Facility’s reverse osmosis treatment process is brine. The brine produced at the North City Pure Water Facility will be conveyed to the Point Loma Wastewater Treatment Plant via the brine pipeline, which is being designed and constructed as part of the Morena Project. The objective of the Brine Impacts Study was to assess the effect of future brine inputs on Chemically Enhanced Primary Treatment (CEPT) and methane gas production through the anaerobic digestion process at the Point Loma Wastewater Treatment Plant. The study was completed in September 2017; the preliminary findings show that the current CEPT baseline can be restored by increasing coagulant doses. In addition, no apparent effects on gas production were observed.

No Chloramine Study

The objective of the No Chloramine Study is to demonstrate efficiency of the Ozone and Biological Activated Carbon (BAC) pretreatment to eliminate the need for chloramines, which would result in chemicals and energy savings and extending the lifecycle of membranes. This study is currently in progress and will conclude in 2018.



Lab Technician Performing Water Quality Testing



North City Demonstration Pure Water Facility

Tertiary Filter Loading Rate Evaluation

The Pure Water Team recently completed a tertiary filter loading rate evaluation at the North City Water Reclamation Plant to determine if an equal degree of treatment could be achieved for higher filtration rates. The evaluation was modeled off the Filter Loading Evaluation for Water Reuse (FLEWR) study. It has been successfully demonstrated that North City Water Reclamation Plant can operate at filtration rates of 7.5 gal/ft²-min.

Pathogen Study

To demonstrate pathogen removal at the North City Water Reclamation Plant, the Pure Water Team completed a comprehensive pathogen study, which is one of the largest microbiological datasets ever collected at a wastewater treatment facility. The year-long microbiological monitoring effort included 11 microbiological assays, sample collection from the raw influent, secondary and tertiary effluent, 21 virus sampling events, and 24 protozoa sampling events. The results of the study are being used to support Title 22 Engineering Report approval efforts related to the consequent pathogen removal credits for the North City Water Reclamation Plant. The pathogen removal credits will further promote redundancy in the overall system's pathogen removal capability and operational flexibility in Phase 1 - North City.

4. Regulatory and Environmental Progress

Regulatory Progress

The City is committed to continued close collaboration with the State Water Resources Control Board's (SWRCB) Division of Drinking Water (DDW) and Regional Water Quality Control Board (RWQCB) staff in the development of a project that protects public health as well as meets basin objectives for discharge to Miramar Reservoir. The staff from the City and the DDW met monthly between 2016 and May 2017, when the draft Title 22 Engineering Report was submitted for DDW's review.

Title 22 Engineering Report

The Title 22 Engineering Report describes all aspects of the Phase 1 – North City projects and the framework for compliance with the California Code of Regulations Title 22 Water Recycling Criteria (CCR, 2014) and future surface water augmentation regulations.

The purpose of the Title 22 Engineering Report is to request approval from DDW for the North City Pure Water Project and form the basis for the National Pollutant Discharge Elimination System (NPDES) permit to be issued by the RWQCB. Preparation of this very comprehensive report was initiated in early 2016; the first draft was submitted to the DDW in May 2017.

The North City Pure Water Project Title 22 Engineering Report covers a variety of topics, including:

- Regulatory Requirements
- Wastewater Source Control
- Detailed Project Facilities Description
- Reclaimed and Purified Water Quality
- Drinking Water Supply System
- Treatment Safety Features
- Response & Notification Plan and Contingency Plan
- Monitoring and Reporting Program
- Operations Optimization Plan
- Operations and Maintenance (O&M) Readiness Plan
- Technical, Managerial and Financial Capacity

DDW completed their review of the first draft of the Title 22 Engineering Report and submitted comments to the City the first week of October 2017. The City is in the process of responding and preparing a second draft for DDW's review. The City's goal is to receive an approval letter from DDW with conditions for the project by fall 2018.



Miramar Reservoir

[Independent Advisory Panel](#)

The City reconvened the Independent Advisory Panel (IAP) on October 9-10, 2017 to provide their opinion on a couple of key issues important to approval of the project. The DDW and SWRCB were in attendance on the first day of the IAP to engage with panel members. Key issues discussed were related to:

- Dilution modeling at Miramar Reservoir
- Pathogen removal credit at the North City Water Reclamation Plant

In the November 29, 2017 National Water Research Institute Memorandum, the IAP supported the City's approach to enable the use of sophisticated reservoir modeling to determine withdrawal locations at the Miramar Reservoir outlet tower as a demonstration of meeting DDW's dilution criteria under the Surface Water Augmentation regulations.

The IAP recommended a modified approach for addressing pathogen removal credit from the North City Water Reclamation Plant that is statistically defensible and supports the approach proposed by the City, based upon the data collected in the Pathogen Study. In addition, the IAP recommended that appropriate North City Water Reclamation Plant operating and performance criteria be determined that would allow DDW to grant the desired pathogen removal credit. Details of the pathogen study are found on page 11.

California Potable Reuse Regulations Update

The California Water Code requires the DDW, a division of the SWRCB, to adopt regulations for surface water augmentation, which is a form of indirect potable reuse. The Code also requires DDW to investigate and report to the Legislature on the feasibility of developing uniform regulations for direct potable reuse.

[Surface Water Augmentation Regulations](#)

The DDW released a draft of the surface water augmentation regulations for public comment on July 21, 2017. The comment period closed on September 12, 2017 and DDW is currently developing responses to public comments. A little more than 20 comment letters were received. The City submitted a letter to DDW in support of the draft surface water augmentation regulations, which are consistent with development of the Phase 1 - North City projects. The City is looking forward to DDW finalizing the surface water augmentation regulations.

Direct Potable Reuse Feasibility

DDW was required to convene two independent groups to assess direct potable reuse feasibility:

- 1) Expert Panel of scientists and engineers
- 2) Advisory Group of stakeholders to assist with the feasibility assessment

The City participated in the Advisory Group, helping to ensure that the Pure Water Program was aware of and had representation in formulation of the feasibility assessment. The DDW released its draft report on the feasibility of developing direct potable reuse regulations to the California Legislature on September 2, 2016. The draft report concludes that it is feasible to begin the process of developing direct potable reuse regulations and that the regulations can be adopted, provided that certain research and key knowledge gaps are addressed. The City supports the draft report's overall conclusion that it is feasible to develop uniform criteria for direct potable reuse in California.

Since that time, Assembly Bill 574 was passed in the California Legislature that provides specific definitions for various types of direct potable reuse and for the SWRCB to adopt uniform recycling criteria for direct potable reuse through raw water augmentation (excluding an environmental buffer) by December 31, 2023. The SWRCB must convene an expert panel to review proposed criteria to ensure that they are protective of public health.

Regional Water Quality Control Board

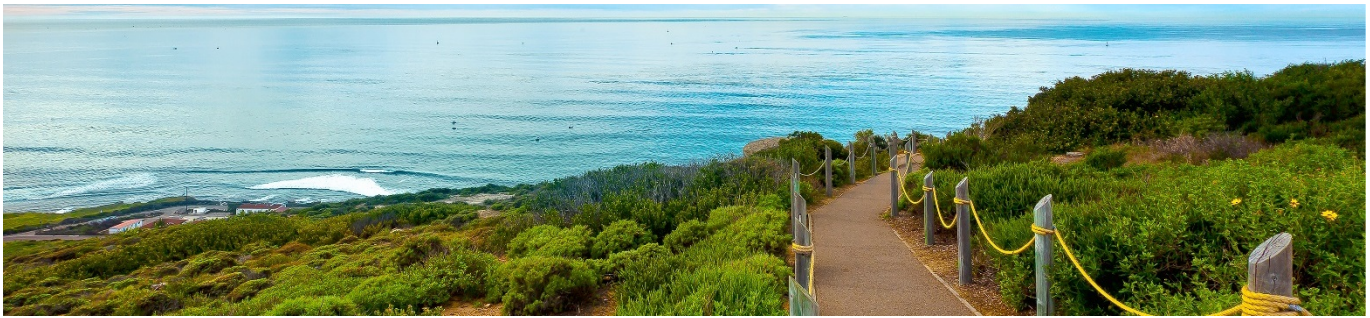
During the past year, the City initiated discussions with the RWQCB staff, which is part of the SWRCB. Those initial meetings and communications have focused on the City's proposed approach for ensuring that:

- The Miramar Reservoir purified water discharge complies with applicable Basin Plan objectives
- A pure water conveyance system discharge under emergency conditions to a stormwater drain, prior to the reservoir, meets ambient water quality objectives

Now that the draft Title 22 Engineering Report has been submitted to the DDW and comments have been received by the City, the City will begin preparing the appropriate NPDES permits.

The City began meeting with the California Department of Fish and Wildlife in late spring of 2017 to balance beneficial use designations for Miramar Reservoir while ensuring that the water quality meets all applicable receiving water and drinking water requirements established by the SWRCB and DDW. The City has studied the ecosystem in Miramar Reservoir based on vetted, well-accepted modeling and on thoroughly researched assessments of nutrient inputs. The results were included in the Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) document and indicate that:

- There will be no loss or impairment of beneficial uses in Miramar Reservoir
- A functioning aquatic community will continue to exist
- Impacts to warm water habitats are less than significant



Point Loma Area

Environmental Review

Significant progress has been made on the project-level environmental document for Phase 1 - North City.

A Draft North City Project joint EIR/EIS (SCH No. 2016081016) has been prepared in compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The project-level analysis includes all projects necessary to produce 30 mgd of purified water for the first phase of the Pure Water Program.

Phase 1 – North City Projects EIR and EIS

Accomplishments

- Notice of Preparation of an EIR for the Phase 1 - North City projects released on August 4, 2016
- Notice of Intent to Prepare an EIS for the Phase 1 - North City projects published by the U.S. Bureau of Reclamation on August 5, 2016
- Draft of the Phase 1 - North City Projects EIR released for CEQA public review on September 7, 2017
 - Numerous comments were received from individuals, organizations and agencies
 - Comment topics include CEQA process, clarifications, project alternatives, traffic and community impacts, project details, future project coordination, health and safety, noise, biological resources, air quality and project timing
- Draft EIR Public Workshop conducted on October 11, 2017
- Notice of Availability for the EIS (NEPA) public review period released by the U.S. Environmental Protection Agency (EPA) on November 24, 2017

Anticipated Timeline for Completion

- Response to EIR (CEQA) Comments in January 2018
- EIS (NEPA) public comments are due by January 8, 2018
- City to finalize EIR/EIS in February 2018
- Notice of Decision by City Council in April 2018
- Record of Decision by the U.S. Bureau of Reclamation is anticipated in June 2018

Phase 1 – North City Projects Environmental Regulatory Permitting Accomplishments

Permit applications for impacts to jurisdictional waterways and wetlands were submitted to the California Department of Fish and Wildlife, RWQCB, and the U.S. Army Corps of Engineers in 2017.

5. Phase 1 – North City Schedule and Budget Update

Schedule

The table below shows milestone dates for the Phase 1 - North City projects. NC07 – Miramar Drinking Water Treatment Plant Improvements Project is not included since it is still in preliminary planning stages.

Table 2: Current Phase 1 – North City Schedule

Project Name	Design Finish	Construction Contract Advertisement*	Construction Start*	Project Complete*
NC01 Morena Pump Station and Pipelines	Jul-2018	Aug-2018	Apr-2019	Nov-2021
NC02 North City Water Reclamation Plant Expansion	Apr-2018	May-2018	Feb-2019	Dec-2021
NC03 North City Pure Water Facility	Apr-2018	Jun-2018	Feb-2019	Nov-2021
NC04 North City Pure Water Pump Station and Pipeline	Feb-2018	Feb-2018	Nov-2018	Mar-2021
NC05 North City Renewable Energy Project**	Feb-2020	N/A	Mar-2020	Dec-2021
NC06 Metropolitan Biosolids Center Improvements	May-2018	Jun-2018	Feb-2019	Oct-2021

*Projects are broken into multiple construction contracts; dates are representative of the primary construction contract.

**North City Renewable Energy Project is anticipated to be procured via a design-build-finance-operate-maintain (DBFOM) contract method. RFSQ is expected to be released in early 2018 with a follow-on Request for Proposals in the summer of 2018.

Budget

The draft Phase 1 – North City budget was updated in mid-2017 to reflect the projects' 30% Design estimates. The estimates will continue to be updated as the projects progress through design and construction.

Table 3: Draft Phase 1 – North City Budget

Project Name	Project Cost Estimate
Total	\$1,226,014,000
NC01 Morena Pump Station and Pipeline	\$297,256,000
NC02 North City Water Reclamation Plant Expansion	\$195,719,000
NC03 North City Pure Water Facility	\$502,486,000
NC04 North City Pure Water Pump Station and Pipeline	\$113,724,000
NC05 North City Renewable Energy Project*	\$76,380,000
NC06 Metropolitan Biosolids Center Improvements	\$40,449,000

* North City Renewable Energy Project cost estimate based on project validation



City of San Diego

Value Engineering

Value Engineering Studies were performed on key projects at the completion of 30% Design to support cost and schedule saving measures. As a result, multiple recommendations were incorporated into the detailed designs moving forward, such as:

- Morena Project: Utilizing open cut technique in lieu of micro tunneling
- North City Pure Water Facility: Modify the O&M building to reduce the footprint and increase the height of Reverse Osmosis Skids to reduce building size
- North City Pure Water Pump Station and Pipeline Project: Reduce the pipe size at strategic locations, such as locations that require tunneling

Grants/Loans

The City has successfully submitted multiple applications for grants and initiated several applications for additional grants and loans. The EPA has invited the City of San Diego to apply for a \$492 million Water Infrastructure Finance and Innovation Act (WIFIA) loan. The City submitted a letter of interest to the EPA for the Pure Water Program in April 2017 and was selected from a group of projects to move forward in the process. Additionally, the EPA has notified the City that there may be additional funds up to \$20-30 million available. The City is concurrently applying for Clean Water State Revolving Fund (CWSRF) loans from the SWRCB, which would provide a low cost source of financing. If awarded these loans, the City will use the funds to construct Phase 1 – North City.

Thus far, the City has procured or plans to procure the grants/loans that are detailed in Table 4 on the following page.

Table 4: Grant/Loans Procured or Being Procured by City

Title	Agency	Project Title	Amount Awarded	Award Date
Grants Awarded				
Watersmart: Title XVI Water Reclamation and Reuse Program FY16	Bureau of Reclamation	Pure Water North City Planning and Design	\$4,940,000	9/13/2016
Watersmart: Title XVI Water Reclamation and Reuse Program FY17	Bureau of Reclamation	Pure Water North City Planning and Design	\$4,200,000	8/7/2017
Title XVI Feasibility Studies	Bureau of Reclamation	Biological Fouling Grant	\$300,000	8/21/2017
Title XVI Feasibility Studies	Bureau of Reclamation	Analytical Testing of Reverse Osmosis Brine Impacts	\$48,526	8/21/2017
Grant Application Submitted - Under Review by Agency				
Proposition 1 Water Storage Investment Program	California Water Commission	Pure Water San Diego	\$219,310,000 (Amount Requested)	TBD
Border Environment Cooperation Commission (BECC) / North American Development Bank	BECC / North American Development Bank	Pure Water North City	\$8,000,000 (Amount Requested)	TBD
Grant and Loan Applications In Process				
Proposition 1 Regional Water Reliability - Integrated Regional Water Management Program Grant	Department of Water Resources	Pure Water San Diego	TBD	TBD
Clean Water State Revolving Fund Loans	SWRCB	Pure Water San Diego	\$1,150,000,000* (Amount to be Requested)	TBD
Watersmart: Title XVI Water Reclamation and Reuse Program FY18 Grant	Bureau of Reclamation	Pure Water North City Planning and Design	\$44,567,750** (Amount Requested)	TBD
WIFIA Loan Program***	EPA	Pure Water North City	\$492,000,000*** (Amount Requested)	TBD

*The City will apply for State Revolving Fund loans for the full amount of Phase 1 eligible projects.

** It is anticipated funding in the amount of \$5 million may be awarded, based on prior awards.

*** The City submitted a Letter of Interest for WIFIA funding and was invited to apply for \$492 million in WIFIA loans.

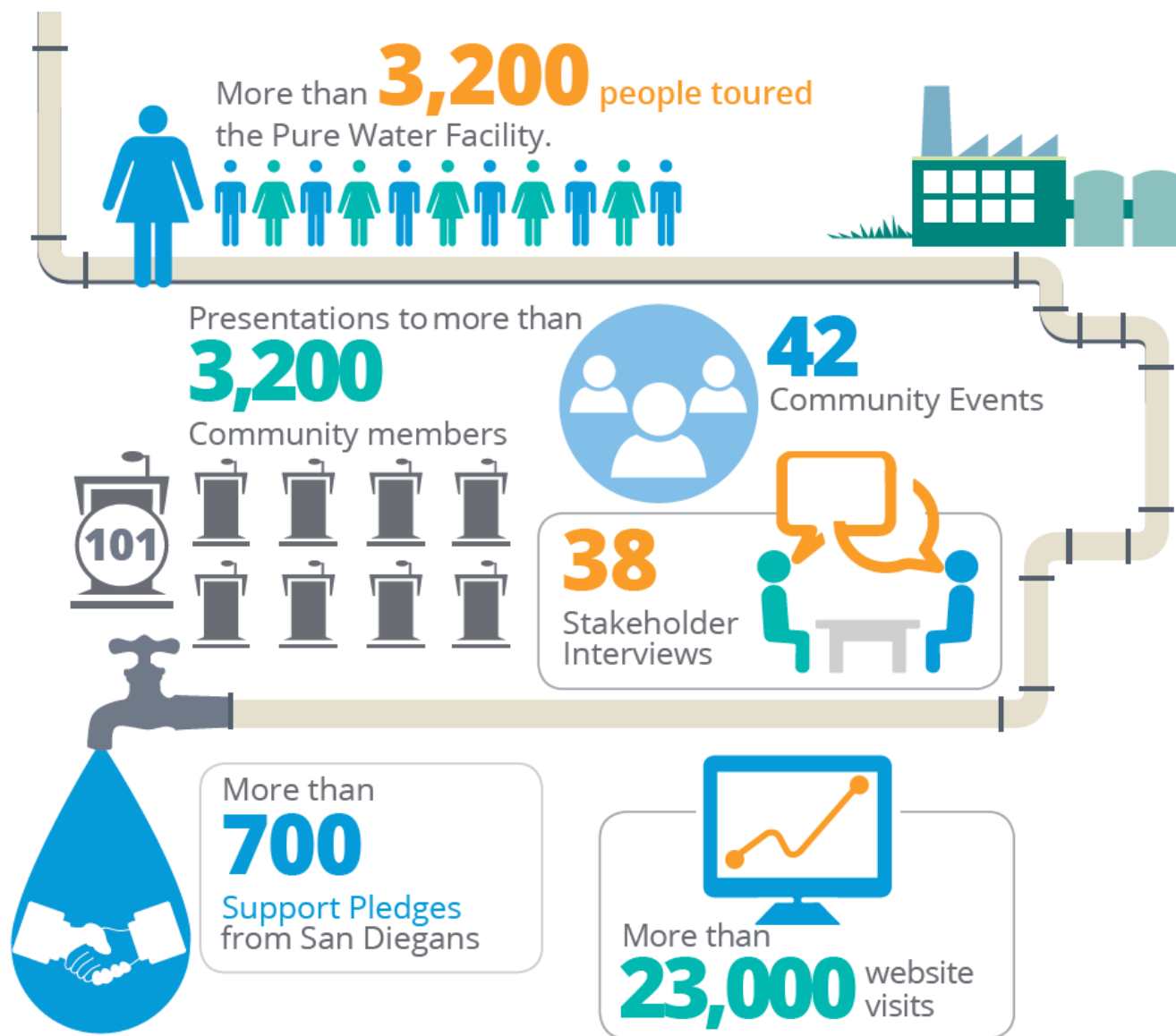
6. Other Critical Initiatives in Progress

Program and Project-Specific Outreach

The Pure Water Team has continued to implement a comprehensive program outreach plan. This year, the North City Demonstration Pure Water Facility welcomed its 14,000th tour participant and the City of San Diego partnered with Stone Brewing to brew beer using purified water from the Demonstration Facility for an event that was covered by more than 80 local, national and international news outlets.

In addition, program outreach made many accomplishments in 2017, as shown in Figure 7 below.

Figure 7: Public Outreach Accomplishments



Pure Water Day Open House

More than 500 people attended the second annual Pure Water Day Open House event to learn more about the Program, Phase 1 projects and tour the Demonstration Facility.

With construction on the Phase 1 Pure Water projects beginning in 2018, project-specific outreach on several projects has continued. As part of this effort, the Pure Water Team held an Open House event in October 2017 for the public at the North City Water Reclamation Plant, which includes the Demonstration Facility. The goal of this event was to increase awareness of the Pure Water Program and upcoming projects. The Open House included tours of the Demonstration Facility, tastings of the purified water, a video testimonial booth, an interactive Kid Zone, tours of the North City Waterwise Garden, a succulent planting station and free snow cones, kettle corn and hot dogs. The Demonstration Facility hosted a record 21 tours over 5 hours.

Pure Stone Partnership

In March 2017, the Pure Water Program partnered with Stone Brewing to brew Stone Full Circle Pale Ale, using purified water from the Demonstration Facility.

The March 16, 2017 event marked the first time a commercial brewery had brewed beer with 100% advanced-treated recycled water. Mayor Kevin Faulconer and Pat Tiernan, Chief Operating Officer (COO) of Stone Brewing, kicked off the Pure Stone event by pouring the first pints of sustainably-brewed beer.



More than 200 City leaders and elected officials gathered at Stone Brewing World Bistro & Gardens in Liberty Station to hoist a glass and taste the beer for themselves. The partnership's shared commitment to sustainability and ingenuity helped the City cement its reputation as a leader in potable reuse nationwide. To recognize the importance and significance of the partnership, Mayor Kevin Faulconer presented a proclamation that declared March 16 "Pure Stone Day." The innovative partnership was covered by more than 80 local, national and international media outlets.

Phase 1 Project Outreach

In preparation for start of construction on Phase 1 projects, project-specific outreach increased in 2017, with 20 presentations provided to more than 600 community members in City Council Districts 1, 5, 6 and 7 – the communities within the Phase 1 project area.

These presentations included information on the proposed pipeline alignments and facility locations, work hours during construction, renderings of facilities and traffic control plans. Presentations were made to community planning groups, town councils, civic associations, home owner associations, recreation councils, and stakeholder groups. Additionally, the Pure Water Team provided presentations to the San Diego Council of Bass Clubs and increased outreach efforts to the fishing community in San Diego.



Demonstration Pure Water Facility Tour Participants Drinking Pure Water

Public Art Outreach

An event was held on June 10, 2017, to obtain public input on the public art piece that will be designed for the full-scale North City Pure Water Facility. Approximately 30 attendees met the artist, toured the Demonstration Facility and shared their memories and thoughts on the importance of water to their lives via an interactive activity.

Pure Water Working Group

The Pure Water Working Group reconvened on June 29, 2017 to review and provide input on the 30% design renderings of the full-scale North City Pure Water Facility. The Pure Water Working Group was established in 2014 and consists of representatives from San Diego community planning groups, businesses, City Council District offices, environmental organizations and community leaders.

Contractor Forum

The Pure Water Team participated in the Contractor Forum, held on August 28, 2017. The purpose of the Contractor Forum was to provide the construction industry with the timing and scope of Pure Water construction contracts, as well as to provide a general update on construction for the rest of Public Utilities Department's water and wastewater Capital Improvement Program (CIP). The event outlined how projects will be implemented and how contractors can partner together to bid on these upcoming projects. City staff were available to answer questions related to both programs.

Youth Outreach

The next generation of San Diegans will be the main beneficiaries of the Pure Water Program, which is why the City continues to place emphasis on engaging youth. Throughout the past year, 2,908 San Diego youth were engaged through tours, events and presentations. In November 2017, the City partnered with Carollo Engineers and the Fleet Science Center Better Education for Women in Sciences and Engineering (BE WiSE) Program to hold a workshop for aspiring female scientists and engineers. More than 30 middle and high school students attended the workshop and toured the Demonstration Facility. Female engineers from the City and Carollo Engineers discussed their careers in water and answered questions from workshop attendees. More than 300 students participating in the FIRST LEGO League robotics competition toured the Demonstration Facility as part of their research to develop a project that helps solve a water supply challenge.

Awards and Recognition

The City of San Diego and Stone Brewing received the 2017 Public-Private Partnership Award from the Water Reliability Coalition. The partnership was recognized for increasing awareness of the safety and reliability of potable reuse by brewing Stone Full Circle Pale Ale beer with purified water produced from the City's demonstration Pure Water Facility.

The Pure Water Program received the Outstanding Public Involvement/Education Program from the California Association of Environmental Professionals and the Public Outreach Award from the American Planning Association San Diego Section. The City received two San Diego/Imperial Counties Mark of Excellence Silver Awards from the Public Relations Society of America for the first annual Pure Water Day Open House and Pure Stone event, in addition to the 2017 Public Relations (PR) Team of the Year Special Award and the Best of Show Award for the Pure Stone event.



2017 Public-Private Partnership Award from the Water Reliability Coalition (left and middle), Public Outreach Award from the American Planning Association San Diego Section (right)



San Diego/Imperial Counties Mark of Excellence Silver Awards from the Public Relations Society of America (left), Outstanding Public Involvement/Education Program Award from the California Association of Environmental Professionals (right)

Construction Management Planning

The Pure Water Team has initiated construction management (CM) procurement, is establishing the CM organizational Structure and protocols and is implementing PMWeb.

As-needed CM Procurement

The Pure Water Team initiated the procurement process for CM services to assist with the oversight of Phase 1 - North City construction projects. Two CM consultants have been selected, one for treatment facilities and one for conveyance facilities. The CM contracts are currently in negotiation and the selected CM consultants are scheduled to be onboard during the first and second quarters of 2018.

Establish CM Organizational Structure and Protocols

The Pure Water Team is developing the organizational structure for managing the construction of Phase 1 - North City projects. The organizational structure defines the functional roles and responsibilities to be performed by the City, Program Management Team, CM Consultants and other consultant staff and outlines the roles and responsibilities for each of the positions in the CM organizational structure.

The Pure Water Team coordinated with the Public Works Department Construction Management and Field Services Division and CM leadership to outline the requirements for various CM procedures, business processes and systems to be used for construction of Phase 1 - North City projects. The Pure Water Team is using these requirements to develop CM Plan Guidelines for the Pure Water Program that will detail the specific procedures and protocols that will be followed during construction and specific Construction Management Information System (CMIS) requirements processes to be followed.

PMWeb Implementation for Program Controls and Reporting

Last year, the City selected PMWeb as the CMIS controls and reporting platform that will be used during construction. The PMWeb tool is currently configured to be utilized for Pure Water Program, but with the flexibility to be used on other City infrastructure projects and programs. The Pure Water Team is defining the specific CM business processes that will be managed and various reports that will be generated using PMWeb and is working with the PMWeb integration consultant to establish the required workflows, document management and reporting functions to support the construction of Phase 1 - North City projects. All construction contractors, the CM consultants as well as the Pure Water Team will use the CMIS for all data management, CM procedures and information management during the construction phase. The PMWeb team integrated the PMWeb tool directly with the City's accounting system, which allows for accurate and timely project financial reporting.



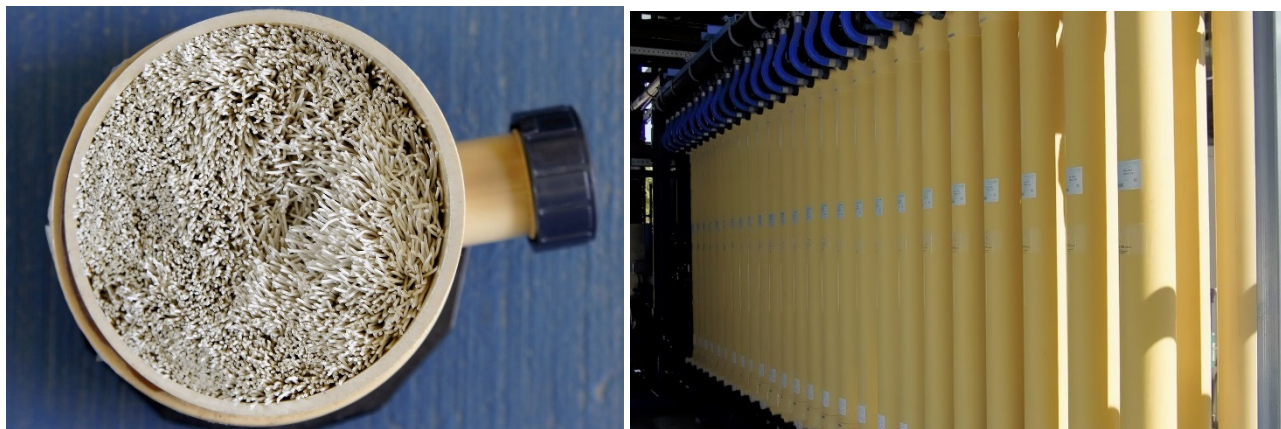
Phase 1 - North City Commissioning Plan

The Phase 1 – North City facilities are interconnected and part of a linear system that functions sequentially to produce pure water. Commissioning, startup and testing of these facilities therefore require careful planning to assure the system functions as a whole to meet objectives, regulatory requirements and the overall Program schedule.

Construction of all Phase 1 – North City projects will consist of approximately 12 separate prime construction contracts. The final commissioning, startup and testing activities to be completed as part of all these contracts will need to be coordinated carefully to address schedule and operational inter-dependencies. Therefore, the Pure Water Team’s commissioning planning efforts are being implemented to take into consideration project-specific commissioning; start-up and testing requirements; commissioning inter-dependencies between construction packages; North City facilities system-wide commissioning and testing requirements; and sequencing, timing and risks associated with releasing some prime construction contractors prior to the system-wide commissioning and costs associated with keeping construction contractors on stand-by for system-wide commissioning.

Following the initial November 2016 Commissioning Planning Workshop (Workshop 1), the Pure Water Team conducted project-specific commissioning planning meetings with each project design team, comprising City and final design consultant staff throughout 2017. The purpose of the project-specific meetings was to initiate discussion with the design consultants and understand their approach to address commissioning, startup and testing requirements within the contract documents for their project. These meetings identified questions and areas for additional investigation and cross-project coordination between the design teams. The meetings resulted in identification of the design consultants’ planned sequences, acceptance and performance test requirements and language for inclusion in the project technical specifications describing these requirements.

A second Commissioning Planning Workshop was conducted in November 2017 that included the participants from Workshop 1 and final design consultant team members from each project. This workshop focused on the interfaces between North City Projects and identified additional questions for the City to consider and specific cross-project coordination items for the design consultants to address in the projects’ contract documents. In addition, this workshop identified areas where the Distributed Control System (DCS) elements require cross-project coordination in order to achieve the performance and acceptance testing requirements of the facilities.



Microfiltration Canisters at the North City Demonstration Pure Water Facility



Operator Readiness

The Pure Water Team is working to ensure that the correct O&M staff are in place and have the qualifications and training required to operate the new Pure Water facilities in a safe and reliable manner.

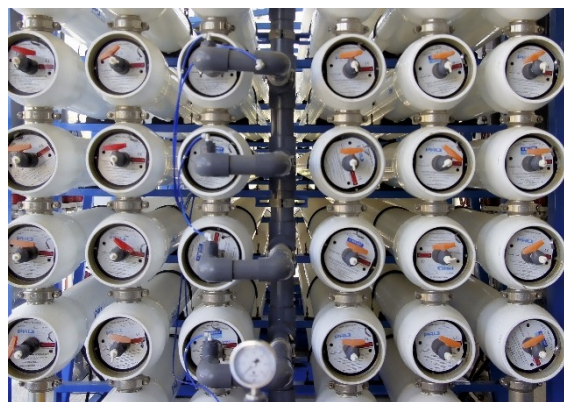
Operator Training on Demonstration Facility

The 1 mgd Demonstration Facility has been operated and maintained by the City with support of consultant staff since 2011. In 2017, the Demonstration Facility's O&M was transitioned to City staff through comprehensive operator training and development of an O&M plan. The Pure Water Team will leverage the Demonstration Facility O&M plan to train staff on the future operation of the full-scale North City Pure Water Facility.

O&M Readiness Plan

In 2017, the Pure Water Team completed development of the comprehensive O&M Readiness Master Plan for Phase 1 – North City. The City is currently using the O&M Readiness Plan as a guide to budget, hire and onboard staff, as identified in the hiring plan. The content of the Pure Water North City O&M Readiness Master Plan was used to develop the O&M-related sections of the Title 22 Engineering Report and will support creation of the North City Pure Water Operations Optimization Plan, which will be developed prior to the commissioning of all Phase 1 – North City facilities.

In addition, City staff have been involved in planning of a new Advanced Water Treatment Certification Program through participation in the SWRCB Advisory Group on Feasibility of Developing Criteria for Direct Potable Reuse and a collaborative effort led by the California Urban Water Agencies. Through this involvement, the City is participating in development of certification requirements that will be applicable to the North City Pure Water Facility operations staff.



RO Pressure Vessels Located at the North City Demonstration Pure Water Facility

7. Summary of 2017 Accomplishments

When the Pure Water Team entered 2017, we wanted to capitalize on the planning and outreach work that set the foundation for Phase 1 – North City and begin design and regulatory approval efforts in earnest. During 2017, we met this goal with all major projects advancing well into design development and some nearing completion.

The Pure Water Team has continued our engineering and optimization studies, prequalifying specialized treatment equipment and conducting studies to better understand the:

- 1) Impact of Pure Water on Miramar Drinking Water Treatment Plant performance and the drinking water distribution system
- 2) Approaches to further optimize the North City Pure Water Facility treatment processes
- 3) Removal of pathogens and indicator organisms at the North City Water Reclamation Plant
- 4) Impact of purified water treatment residuals on the performance of the Point Loma Wastewater Treatment Plant

In addition, the Pure Water Team has made significant progress on the regulatory front, releasing the North City Projects EIR/EIS, completing the first draft of the Title 22 Engineering Report, and beginning the NPDES permit process. At the same time, we have made significant progress with the submittal of funding requests, including grant and low-interest loan applications at both the State and Federal level. Finally, we have maintained our award-winning Public Outreach Program, rallying support for Pure Water across a wide range of stakeholders.

As we move into 2018, the Pure Water Team will complete project designs, welcome CM consultants onboard to guide the next phase of project implementation, and begin procurement for construction contracts. We will continue to focus on O&M readiness to build capacity for project start-up in 2021 and beyond. 2018 will be a critical year for regulatory approvals from the SWRCB. It is an exciting time for the Pure Water Team and the City of San Diego – stay tuned!

The Pure Water Team continues to move ahead with Phase 1 – North City implementation and looks forward to another successful year of progress towards meeting the Phase 1 goal - producing 30 mgd of purified water in 2021.