

**WaterSMART: Water Reclamation Research under the Title XVI
Water Reclamation and Reuse Program for Fiscal Year 2017**

***Site-specific Analytical Testing of RO Brine
Impacts to the Treatment Process***

BOR-DO-17-F004

February 3, 2017

Prepared for



Prepared by



**Applicant: City of San Diego
Address: 9192 Topaz Way, San Diego, CA 92123**

**Project Manager: Amer Barhoumi / Monika Smoczynski
Address: 9192 Topaz Way, San Diego, CA 92123
E-mail Address: ABarhoumi@sandiego.gov / MSmoczynski@sandiego.gov
Telephone #: (858) 292-6364 / (858) 292-6455**

TABLE OF CONTENTS

Sections	Page
Executive Summary	1-2
Technical Project Description	2-5
Evaluation Criteria	6-14
Environmental and Cultural Resources Compliance	14-16
Letters of Support	16
Required Permits or Approvals	16
Official Resolutions	16
Funding Plan and Letters of Commitment	17
Budget Proposal and Narrative	17-21
Appendix A	
Appendix B	

Title Page : “Site-Specific Analytical Testing of RO Brine Impacts to the Treatment Process”

Name: City of San Diego Public Utilities
Address: 9192 Topaz Way
San Diego, California 92123

Project Manager: Amer Barhoumi / Monika Smoczynski
Address: 9192 Topaz Way, San Diego, California 92123
Email Address: ABarhoumi@sandiego.gov / MSmoczynski@sandiego.gov
Telephone #: (858) 292-6345 / (858) 292-6455

TECHNICAL PROPOSAL AND EVALUATION CRITERIA

Executive Summary

Date:	February 3, 2017
Applicant name:	City of San Diego
City:	San Diego
County:	County of San Diego
State:	California

The City of San Diego (City) is applying to the WaterSmart: Water Reclamation Research under the Title XVI Water Reclamation and Reuse Program for \$48,526 for the “Site-Specific Analytical Testing of RO Brine Impacts to the Treatment Process”. This bench scale study will investigate the potential impacts of brine discharges on the wastewater treatment process at the Point Loma Wastewater Treatment Plant (PLWTP). The PLWTP treats approximately 175 mgd of wastewater which will increase with the implementation of the Pure Water Program. The study is an important component of the Pure Water Program as additional RO brine flows from the Pure Water advanced treatment facilities will be conveyed to the existing PLWTP and may present an unknown impact on the wastewater treatment process. The study will specifically focus on determining the effects of brine on the settleability of primary sludge anaerobic digestion of biosolids as it relates to methane gas production and the whole effluent toxicity.

Funding provided will be used to support the testing and development of a Technical Memo that will be developed by the consultant to address the brine impact. A testing protocol will be developed to guide bench scale testing and obtain data results that will serve as a basis to determine if elevated levels of salinity impact the treatment process.

The Pure Water Program (Pure Water) is a phased, multiyear program that will ultimately create 93,000 AFY of the anticipated 298,860 AFY of the City’s water supply by 2035 or approximately 30%. The Pure Water Program will produce a new source of supply for the production of potable water for San Diego, increase the amount of reclaimed water, and divert wastewater flows from ocean outfalls. The result is a sustainable, resilient water supply that reduces the need for imported water while protecting the ocean.

Estimated completion date for this RO Brine study is December 2017. The schedule is shown below in Table 1:

Table 1. Schedule of Proposed Research Study

Task	Description	2017											
		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1	Task Order Management												
2	CEPT Sludge Settleability and WET Testing												
	Draft Experimental Plan												
	Final Experimental Plan												
	Testing and Draft TM												
	Final TM												
3	Biosolids Methane Production Testing												
	Draft Experimental Plan												
	Final Experimental Plan												
	Testing and Draft TM												
	Final TM												

Technical Project Description

The Pure Water advanced treatment facilities will produce RO brine from either a membrane filtration/reverse osmosis process or an ozone / BAC / membrane filtration / reverse osmosis process. A continuous brine stream of approximately 5-6 mgd at an average Total Dissolved Solids (TDS) of 8,200 mg/l will be generated at the 30 mgd North City Advanced Water Purification Facility (NCAWPF). The brine will be discharged several miles upstream via the sewer system but ultimately, into the PLWTP.

A literature study was conducted initially by Montgomery Watson Harza, Inc (MWH), a primary consultant for the Pure Water Program, to review existing data against the values projected for the Pure Water Program goals for year 2035. Although the critical salinity values identified in the literature provided were predominantly greater than the City’s anticipated average TDS value projected for the Pure Water Program’s goal for year 2035, several concerns suggest the need for

additional testing. In particular, the available literature was insufficient to fully capture the City's site specific variables. The research aims to generate an empirical assessment of the impact of RO brine discharge on the City's treatment processes. The City will be conducting a bench scale test to investigate the potential impacts of brine discharges on the treatment process at the PLWTP. The study will specifically focus on determining the effects of brine on the settleability of primary sludge, WET testing and anaerobic digestion of biosolids for methane gas production.

A testing protocol will be developed to guide the bench scale testing to obtain data results that will serve as a basis to determine if elevated levels of salinity impact treatment processes. Details of the study are discussed below:

Task #1 Task Order Management

This task includes project management, controls and progress and coordination meetings. Project management will be performed consistently with the guidelines and direction provided in the Pure Water Program Management Plan and includes activities such as: attending meetings, coordination, providing information and task progress updates, documenting meetings, telephone conversations and email communications. Project controls will be used in tracking budget, schedule and performance consistent with the Project Delivery System. The consultant task manager will provide the City Project Manager's inputs to support updates to the budget, schedule and performance of each task. Status reports on progress of the project will be monitored continuously throughout the project research implementation. Comparison of project schedule and budget against the approved baseline will be reviewed and presented continuously to the City's Pure Water manager.

Task #2 Chemically Enhanced Primary Treatment (CEPT) Sludge Settleability and WET Testing

Jar testing will be performed on PLWTP influent in order to establish:

- ^ Baseline of existing performance (@ present day minimum and maximum salinity values);
- ^ RO brine addition performance (@ future minimum and maximum salinity values);
- ^ RO brine addition performance to establish breakpoint salinity for performance criteria; and
- ^ The impact of two chemical dose modifications on performance with RO brine addition at minimum and maximum values.

By utilizing a six gang jar tester, the four jar test runs as proposed in Table 2 below will provide the information needed to establish the impact of future salinity variations on CEPT sludge settleability and the impact of chemical dosage modifications on future performance.

Table 2. Jar Test Matrix Conditions and Rationale

Jar Test Run	Conditions	Jar Description	Chemical Addition	Rationale
#1	Minimum Salinity Performance	3 jars of PLWTP influent @ present day salinity minimum and 3 jars of PLWTP influent spiked with RO brine to projected future salinity minimum.	Apply current chemical dosing and mixing conditions.	Establish performance at existing and future minimum salinity values by running each condition in triplicate.
#2	Maximum Salinity Performance	3 jars of PLWTP influent @ present day salinity maximum and 3 jars of PLWTP influent spiked with RO brine to projected future salinity maximum.	Apply current chemical dosing and mixing conditions.	Establish performance at existing and future maximum salinity values by running each condition in duplicate.
#3	Breakpoint Salinity Assessment	6 jars of PLWTP influent spiked with incremental levels of RO brine. The RO brine range will be determined based on the performance of jar test #1 and #2.	Apply current chemical dosing and mixing conditions.	Establish the salinity level at which performance is impacted.
#4	Chemical Dose Modification	3 jars of PLWTP influent spiked with RO brine at future minimum concentration and 3 jars of PLWTP influent spiked with RO brine at future maximum concentration.	Apply existing and two chemical dose and mixing modifications to each pair of low and high RO brine jars.	Establish performance of chemical dose modification against existing dosing for future RO brine minimum and maximum concentrations.

WET testing needs to be performed in accordance with the City's permit requirements for discharge of PLWTP's CEPT effluent. The conditions presented in Table 3 below need to be submitted for WET testing in order to assess the impact of existing salinity conditions and future salinity conditions from discharge of the Advanced Water Purification Facility (AWPF) brine to the sewer system.

Table 3. Wet Testing Conditions

Present Day Conditions	Future Condition
PLWTP Low Salinity CEPT Effluent	PLWTP Low Salinity CEPT Effluent + Low salinity RO brine
	PLWTP Low Salinity CEPT Effluent + High salinity RO brine
PLWTP High Salinity CEPT Effluent	PLWTP High Salinity CEPT Effluent + Low salinity RO brine
	PLWTP High Salinity CEPT Effluent + High salinity RO brine

An optional WET testing condition may be performed dependent upon the results of Jar Test Run #3 (Breakpoint Salinity Assessment). This would include WET testing of a minimum of 3 to a maximum of 6 of the jar conditions considered during this test run.

A draft technical memorandum (TM) will be prepared upon completion of the CEPT Sludge Settleability and WET Testing. The TM will summarize the background and objective of the study, describe the experimental setup and associated testing and analytical protocols that were performed, summarize and interpret the collected data, and present key findings and conclusions.

Task #3 Biosolids Methane Production Testing

Bench-scale testing will be performed to evaluate the difference in methane production from digestion of the PLWTP biosolids before and after RO brine addition. This will be achieved by collecting sufficient solids from the PLWTP CEPT process for use as feed stock to anaerobic bioreactors. The solids will be utilized “as-is” in one anaerobic reactor in order to generate a baseline. A second anaerobic reactor will contain these same solids augmented with RO brine in a quantity equivalent to the projected future high salinity levels. The bioreactor described in A.C. Wilkie et al., 2004, will be constructed for this testing.

This economical bioreactor is designed for evaluating the biogas potential of particulate biomass through use of a Bordeaux stirrer and a liquid-displacement gas collection apparatus. Feed stock for the reactors will be obtained from the PLWTP digester. This initial testing will determine whether the City needs to expand testing to include additional supplemental RO brine conditions or whether a two-stage lab anaerobic reactor unit needs to be purchased in order to produce more accurate results.

A draft technical memorandum will be prepared upon completion of the Biosolids Methane Projection Testing. The TM will summarize the background and objective of the study, describe the experimental setup and associated testing and analytical protocols that were performed, summarize and interpret the collected data, and present key findings and conclusions.

TECHNICAL PROPOSAL: EVALUATION CRITERIA

Evaluation Criterion 1 — Statement of Problems and Needs (15 Points)

1. 4 Describe in detail the water resource management problems and needs in the local area and explain how water reclamation and reuse may address those problems and needs.

Eighty-five to ninety percent of the City's water is imported from the Colorado River and California State Water Project. The cost of this imported water is rising, having almost tripled in the last 10 years. This dependence on imported water and a lack of local control over its cost makes San Diego's water supply vulnerable to water shortages, droughts, climate change and natural disasters. The Pure Water Program will help solve San Diego's water challenges by enhancing the City's water supply. Pure Water Program will also decrease the amount of treated wastewater that is released into the ocean by diverting wastewater flows away from the PLWTP and into the Pure Water system.

Pure Water produces a new source of supply for the production of potable water for San Diego, increases the amount of reclaimed water, and diverts wastewater flows from ocean outfalls. The result is a sustainable, resilient water supply that reduces the need for imported water while protecting the ocean. The Pure Water Program:

- f Uses proven technology to produce safe, high-quality drinking water
- f Provides a reliable, sustainable, locally controlled water supply
- f Offers a cost effective investment for San Diego's water needs

2. 4 Identify the water supply imbalance and describe how the research study supports the establishment or expansion of water reclamation and reuse that will reduce, postpone, or eliminate the development of new or expanded water supplies.

This study will be performed to investigate the potential impact of future RO brine discharges from the Pure Water system on wastewater treatment facilities. Brine flow could represent a notable percentage of the combined flow to the PLWTP after Pure Water facilities off-load approximately 100-mgd of the existing wastewater flow. The findings from this study are meant to identify critical salinity levels that could trigger impacts to the Pure Water facilities.

The Pure Water Program will help solve San Diego's water challenges by enhancing the City's water supply thereby, ensuring water reliability. It will reduce the need for the development of new or expanded non-recycled water supplies as it will produce locally, 30 MGD of purified water. In addition, it will reduce the need for imported water, while being independent of local runoff or groundwater as the water source thereby, making it a drought proof water supply. Pure Water will make San Diego's water portfolio more

resilient in the face of climate change and natural disasters. Diversification of the City's water supply will help make the San Diego region more resistant to drought and imported water delivery service interruptions. As the population continues to grow in San Diego and Southern California, water supplies continue to dwindle. Purified water is resilient to climate change since it is water that has been reclaimed through the water reclamation process and then treated again through the advanced purification process.

Evaluation Criterion 2 — Local Water Reclamation and Reuse Opportunities (15 Points)

1. Describe the source(s) of water that will be investigated for potential reclamation, including impaired surface or ground waters.

The source of water that will be investigated comes from the first phase of the Pure Water Program North City Project which includes the following:

- u Morena Pump Station, Force Main and Brine Conveyance: needed to increase wastewater flow to NCWRP (NC05)
- u NCWRP Expansion: expansion of existing water reclamation plant from 30 mgd to 52 mgd of Title 22 water that is needed to produce 30 mgd of purified water (NC06)
- u North City Influent Conveyance: needed to connect the NCWRP and NCAWPF (NC01)
- u NCAWPF: treats reclaimed water from the NCWRP (NC02A)
- u North City Conveyance: pipeline and pump station(s) to deliver purified water to the Miramar Reservoir (NC03A/NC04A)
- u North City Cogeneration Facilities Expansion (NC07)

As part of the Pure Water Program, it is necessary to study the impact of brine discharge on to PLWTP from the NCAWPF, which is the reason for the RO Brine study.

2. (Describe how the research study will support establishment or expansion of water reclamation and reuse markets in the study area.

The research study is a vital component of the City's Pure Water Program which will investigate the potential impact of future RO brine discharges from the Pure Water facilities on PLWTP. The Pure Water Program will reduce the need for development of new or expanded water supplies. A reduction in imported water supplies is a benefit not only to the City's existing water infrastructure, but also the imported water infrastructure managed by other agencies. This study will be beneficial to other agencies implementing similar programs and will aid in the development of new and innovative ways in the treatment process.

3. 7 Describe how the research study will help broaden the use of reclaimed water for additional purposes in the study area (e.g., environmental restoration, fish and wildlife, groundwater recharge, municipal, domestic, industrial, agricultural, power generation, and recreation).

The objective of this study is to determine impact of RO brine in the treatment process. This study essentially will be used in expansion of the reclaimed water for drinking water with sufficient treatment, barriers, and protection of public health. The treatment method will ensure that the new source of water meets all existing environmental discharge regulations. In summary, expanding the use of reclaimed water from this project is promoting the practice of potable reuse.

In addition, a critical part of the research, Biosolids Methane Production Testing, aims to verify the effects of salt on biosolids in the production of methane gas. Energy co-generation is a crucial component of Pure Water due to the intense energy requirement in the advanced water treatment system and will rely, in part, on biosolids as feedstock for the anaerobic digester to produce biogas. Pure Water will tap this renewed energy generated through biogas/methane gas that will assist the grid – supply power needs of the NCWRP facilities and new pump station conveyance to the reservoir. The efficiency of the digester to produce gas is highly dependent on the quality of biosolids that will be generated by the treatment facilities. The study will be able to determine impacts of brine on sulfide levels to ensure that no critical effects will bring operational problems in the methane gas production.

Evaluation Criterion 3 — Advancing Water Reclamation Knowledge (15 points)

1. 7 Describe the objectives of the proposed research study, research methodology, and how the results will advance water reclamation and reuse knowledge. References and literature citations should be provided, as applicable.

The main objective of the study is to investigate the potential impact of future RO brine discharges from the Pure Water Facility on PLWTP. The study methodology will include: Jar Testing for CEPT sludge settleability and potentially the WET testing depending upon the results of the jar test. Biosolids methane production testing will also be performed by collecting solids from the current biosolids production and comparing it with the solids that have been added with RO brine when both are used as feed stock to the anaerobic bioreactors.

The proposed research study will advance knowledge in the area of reuse by providing an understanding of the potential impacts of elevated salinity levels on PLWTP. A literature study was conducted initially by MWH to review existing data against the values projected for the Pure Water goals for year 2035. The critical salinity values identified in the literature provided were predominantly greater than the City's anticipated average TDS value projected for Pure Water's goal for year 2035, however this new treatment process and the impact to the wastewater treatment suggest the need for additional testing.

2. : Describe any collaborators involved with the research and their respective roles.

The City of San Diego is collaborating with MWH and Brown and Caldwell. These two consulting firms will be responsible for performing this research effort.

3. : Please describe the credentials, experience, and past performance of the research team. Alternatively, describe the process and criteria that will be used to select an appropriate, experienced research team.

MWH is considered a leader and expert in state-of-the-art pilot equipment fabrication and pilot testing in the areas of water-energy nexus and sustainability, treatment facility optimization, development of best management practices for emerging contaminants, treatment of industrial wastewater and has conducted more than 100 bench-, pilot- and demonstration-scale studies for cost-effective solutions to environmental challenges such as treatment processes including conventional treatment, direct filtration, membrane filtration, ozonation, advanced oxidation, coagulation, water and wastewater disinfection. Brown and Caldwell is ranked consistently among the top 50 design firms worldwide and specializes in various fields such as: wastewater and reclamation, conveyance infrastructure, planning/technical support and other design, engineering and technical services.

Evaluation Criterion 4 — Environment and Water Quality (15 points)

1. : Describe the potential for the research results to identify measures or implement technologies that improve the quality of surface or groundwater in the study area.

The addition of the purified water to the City's water reservoir will improve the water quality of surface water. The purified water will improve nutrient-related water quality within these reservoirs as water produced at the NCAWPF is of distilled water quality and meets or exceeds all state and federal drinking water standards. Nutrient as well as salinity concentrations will be reduced as improvements in salinity will also, reduce costs associated with drinking water treatment and infrastructure replacement.

2. : Describe the potential for the research results to identify measures or implement technologies that improve flow conditions in a natural stream channel that benefit the environment.

The research study will contribute to the effectivity of the Pure Water goal of improving the quality of effluent discharge to the ocean by offloading the City's 240-mgd PLWTP, thereby, reducing ocean discharges. The City's expansive industrial source control, advanced primary treatment, deep ocean outfall, and robust ocean monitoring program surpass the required environmental protections for ocean water quality and biology.

3.8 Describe the potential for the research results to identify measures or implement technologies that provide water or habitat for non-listed, sensitive, or federally-listed threatened or endangered species.

While this study does not directly provide water or habitat for non-listed, sensitive, or federally-listed threatened or endangered species, the North City Project will indirectly enhance areas in the Bay-Delta and Colorado River, thus resulting in improved habitat for non-listed and listed threatened or endangered species of these regions. The Pure Water Program will reduce the need to import water from the Bay-Delta and Colorado River.

Bay-Delta:

The Bay-Delta encompasses 1,600 square miles and supports an assortment of tidal and non-tidal aquatic, riparian, and wetland habitats that host more than 500 species. Suisun Bay lies at the confluence of the [Sacramento](#) and [San Joaquin Rivers](#), forming the entrance to the [Bay-Delta](#). Its tidal marsh is the largest brackish water marsh complex in the western U.S. and supports many sensitive terrestrial and aquatic species, including the Delta Smelt.

The Bay-Delta Conservation Plan has identified numerous species of concern within the Bay-Delta including 52 plant varieties, 12 different mammals, 7 types of fish, 10 bird species, 3 amphibians, 17 invertebrates and 3 reptiles. A full list of species of concern can be found at <http://calwater.ca.gov/delta/species/>

Lower Colorado River:

The mighty Colorado River originates in the Rocky Mountains and flows more than 1,400 miles through the American southwest and the Republic of Mexico. The Colorado River Basin extends over nearly a quarter of a million square miles in seven states providing water for more than 25 million people and 3.5 million acres of agricultural land.

To ensure the continued existence of species within the planning area and to allow for future increases in their abundance, it is important that existing habitat areas are maintained through the life of the Pure Water Program to prevent future degradation or loss of habitat. A reduction in the amount of water needed from the Colorado River will help prevent loss of habitat for the species (LCRMSCP, 2004). The proposed North City Project will reduce the volume of Colorado River water diverted to San Diego and decrease these impacts.

Evaluation Criterion 5 — Legal and Institutional Requirements (10 Points)

1.8 For desktop research studies, describe how the research may identify methods or produce results that help to eliminate obstacles for using reclaimed water as a supply in the study area.

This study is a field-based research.

2. *<For field based research studies, describe how the research study may identify methods or produce results that help to eliminate obstacles for using reclaimed water as a supply in the study area, and describe the readiness of the research study to proceed in terms of:*

a. *What type and level of preliminary research investigations have been completed?*

The City has previously commissioned a desktop study which reviewed published literature on the topic of brine. Literature was identified through on-line searches performed with SCOPUS, Science Direct, and Web of Science search engines. Identified papers were down-loaded through the Johns Hopkins University (JHU) on-line Library Services available to MWH Visiting Scholars through the MWH- JHU Alliance. Key words utilized in these searches included: (a) chemically enhanced primary treatment and salinity; (b) salinity and sludge settleability; (c) sludge salt content and anaerobic digestion gas production; (d) primary effluent whole effluent toxicity and salinity; (e) salinity and sludge dewaterability; (f) salinity and biologically activated sludge; and (g) salinity and membrane bioreactor. The search focused on publications from the past ten years and excluded references published prior to the year 2000.

b. *<What type and level of preliminary research plans or testing designs have been completed?*

To date, the City of San Diego has not completed any preliminary research plans nor testing designs.

c. *What uncertainties could affect the timing of research completion associated with environmental compliance, permitting, etc. as applicable to the research study?*

The proposed study will be conducted in a laboratory atmosphere and there are no external influences (ex. permitting, environmental compliance, etc.) which would affect the timing of its completion.

d. *<How will research results help address regulatory or institutional requirements to implement a water reclamation and reuse project?*

The proposed study is a critical component of the purification process to convert recycled water into purified water. Through new pipelines, purified water will be conveyed to the Miramar reservoir where it will be mixed with imported water until it is pulled into the existing water treatment system. Currently, the State Water Resources Control Board released its draft report to the Legislature on the feasibility of developing regulations for the direct potable reuse of recycled water. The State Water Board's Division of Drinking Water has concluded it is feasible to begin the process of developing regulations that can be adopted for the use of recycled water for surface augmentation.

Evaluation Criterion 6— Energy and Energy Efficiency (10 points)

- 1. CFor research studies that include evaluation or incorporation of renewable energy, please describe the proposed or existing renewable energy system and the research objectives proposed to evaluate the integration of renewable energy into the research study area or project.*

This study will not incorporate renewable energy however, the Pure Water Program will construct a co-generation facility to assist with the power supply needs of the new facilities.

- 2. CFor research studies that focus on improving energy efficiency, describe the full scale plant energy requirements, if applicable, proposed efficiency improvements, and reduced carbon footprint. Provide calculations and describe assumptions and methodology.*

This study will not incorporate renewable energy however, the Pure Water Program will construct a co-generation facility to assist with the power supply needs of the new facilities. The co-generation will assist with the power supply needs of the new NCAWPF and the expanded NCWRP, as well as the effluent pump station to the Miramar Reservoir. The City is currently considering a Public Private Partnership for the co-generation project.

There are two existing co-generation facilities located at North City: a facility privately owned by Fortistar and another plant owned by the City of San Diego. Both facilities use landfill gas, which Fortistar maintains the right to use as their fuel source. The Fortistar facility provides power to the existing NCWRP, and sells power back to the grid. The City's facility provides shortfall power to the NCWRP and also sells power back to the grid. Fortistar is under contract to operate their facility to provide power to the City. Eventually, the City may replace the Fortistar facilities with additional City-owned co-generation units.

- 3. CPlease quantify the energy savings that are expected to be identified in the research study through renewable energy or improved facility efficiencies. Include support for how energy savings were calculated.*

This study will not incorporate renewable energy however, the Pure Water Program will construct a co-generation facility to assist with the power supply needs of the new facilities. The co-generation will assist with the power supply needs of the new NCAWPF and the expanded NCWRP, as well as the effluent pump station to the Miramar Reservoir. The City is currently considering a Public Private Partnership for the co-generation project.

There are two existing co-generation facilities located at North City: a facility privately owned by Fortistar and another plant owned by the City of San Diego. Both facilities use landfill gas, which Fortistar maintains the right to use as their fuel source. The Fortistar facility provides power to the existing NCWRP, and sells power back to the grid. The City's facility provides shortfall power to the NCWRP and also sells power back to the grid. Fortistar is under contract to operate their facility to provide power to the City. Eventually, the City may replace the Fortistar facilities with additional City-owned co-generation units.

Evaluation Criterion 7— Watershed Perspective (10 points)

1. 4Describe the extent to which the research study is based on recommendations from an existing plan that is sponsored or otherwise recommends research needs in the study area.

The Brine study is based on recommendations which have transpired from the efforts of Pure Water. It has been highly recommended to conduct research within this area with the intention to understand the potential impacts of brine discharges on wastewater treatment process. At this time, there is an insufficient amount of literature that would fully capture and determine the effects of brine discharges on treatment processes.

2. 4Explain any additional benefits of, or specific need for, the proposed research study within the sponsor's watershed (e.g. supporting feasibility studies or construction projects planned in the watershed).

Pure Water benefits the region and state as a whole as it provides a safe, reliable, drought proof, locally controlled drinking water supply for the San Diego region while reducing the demand from imported water supplies. The Program achieves multiple plan goals of the San Diego Integrated Regional Water Management (IRWM) Plan.

IRWM Plans are regional plans designed to improve collaboration in water resources management. The San Diego IRWM comprehensively addresses all aspects of water management and planning throughout San Diego Region. The San Diego IRWM Plans cross jurisdictional, watershed, and political boundaries; involves multiple agencies, stakeholders, individuals, and groups; and addresses the issues and differing perspectives of all the entities involved through mutually beneficial solutions. The Pure Water will address the following San Diego IRWM Plan Goals: improve the reliability and sustainability of regional water supplies, protect and enhance water quality and promote and support sustainable integrated water resource management. In addition, the San Diego County Water Authority in its 2013 Regional Water Facilities Master Plan Update notes that these projects have the ability to significantly delay or forgo future Water Authority investments in new infrastructure and any decision on new regional supply development projects should take into consideration the City's potable reuse efforts.

E.1.8. Evaluation Criterion 8— Broader Research Benefits (10 points)

- 1. Describe how the research study helps to implement new methodologies, improve best practices, or deploy state of the art technology (e.g. technology commercialized through Reclamation's Desalination and Water Purification Research Pure Water).***

Funding received from BOR will allow the study to provide information on the impact of salinity to water reuse application. The result may provide an alternative means or method for decreasing RO brine impact, which may be, used by other municipalities and other agencies to implement a similar water reuse application.

- 2. Describe how the research results will benefit other locations based on the technical, economic, or institutional questions that will be answered by the research study.***

The uniqueness of this study will not only benefit the City of San Diego's Pure Water Program but will also provide insight on best management practices of brine discharges. As a result, this study will pave the way for other agencies that may elect to implement water purification.

- 3. Explain how the research study includes or promotes and encourages collaboration. Identify if there is widespread support for the research study.***

The site-specific brine study concept has been developed from a comparative analysis of facts presented in a literature study against the Pure Water goals. This research may promote collaboration of different experts in the field of water reclamation and water quality, as research outputs are shared. This will continue to stimulate the rise of new platforms for further technology research and development.

Environmental and Cultural Resources Compliance

- Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.***

The proposed study will have no impact on the surrounding environment since this study will be conducted in a laboratory atmosphere.

- Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?

The proposed study will have not include species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat that will be impacted since this study will be conducted in a laboratory atmosphere.

- Are there wetlands or other surface waters inside the project boundaries that potentially fall under Clean Water Act (CWA) jurisdiction as “Waters of the United States?” If so, please describe and estimate any impacts the proposed project may have.

The proposed study does not include wetlands or other surface waters inside the project boundaries that potentially fall under Clean Water Act (CWA) jurisdiction as “Waters of the United States” since this study will be conducted in a laboratory atmosphere.

- When was the water delivery system constructed?

The City’s water supply and distribution system began in 1901. By 1947, the City’s publicly owned water supply system extended to dams, water rights, distribution lines and associated facilities.

- Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., head gates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

The proposed study will not include modifications of or effects to, individual features of an irrigation system since this study will be conducted in a laboratory atmosphere.

Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.

- Are there any known archeological sites in the proposed project area?

The proposed study does not include any known archeological sites since it will be conducted in a laboratory atmosphere.

- Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?

The proposed study will not have a disproportionately high or adverse effect on low income or minority populations since this study will be conducted in a laboratory atmosphere.

- Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?

The proposed study will not limit access and ceremonial use of Indian sacred sites or result in other impacts on tribal lands since this study will be conducted in a laboratory atmosphere.

- Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

The proposed study will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area since this study will be conducted in a laboratory atmosphere.

Letters of Support

This study is essential in the development of the Pure Water technology. Pure Water is supported by the WaterSMART Bureau of Reclamation Title XVI Program as it was awarded \$4,900,000 in June 2016. The City is currently pursuing additional funds for FY 2017. Letters of support are attached as Appendix A. Table 4 lists a few of Pure Water supporters.

Table 4. List of Pure Water Program Supporters

<p>Dianne Feinstein, United States Senator San Diego CoastKeeper San Diego River Park Foundation United States Environmental Protection Agency</p>	<p>Surfrider Foundation San Diego County Chapter WateReuse San Diego Chapter San Diego Regional Chamber of Commerce</p>
--	---

Required Permits or Approvals

Since the main purpose of the RO Brine study is to conduct laboratory bench-scale testing to determine the effects of brine on the treatment facilities, this project does not require nor trigger any specific permits or approvals before proceeding.

Official Resolution

City of San Diego Council Resolution # 310530 dated June 16, 2016 (Appendix B) indicates approval of the Pure Water Program’s application to the Bureau of Reclamation’s WaterSMART Title XVI Reclamation and Reuse Grant Program for 2016 through 2019.

Project Budget

Funding Plan and Letters of Commitment

The total cost for this study is estimated to be \$194,105 for the Consultant's Contract (Contractual) and is proposed to be funded through the Bureau of Reclamation and City of San Diego Water Fund. The Pure Water's primary consultant, MWH, will conduct the research study. MWH will be the lead investigator and Brown and Caldwell as the subconsultant on the Study. Both consultants will conduct all testing and prepare reports identified for this study. The study will run for 12 months, starting in January 2017 through December 2017. The non-federal cost share will be funded through the City's Water Fund. City staff will work on this project for a minimal amount of time and labor charges will not be charged to this project. The consultant began working on the project activities in January 2017.

Table 5. Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
Non Federal Entities	
1. City of San Diego	\$145,579
2	
3	
Non Federal Subtotal	\$145,579
Other Federal Entities	
1. Bureau of Reclamation	\$48,526
2	
3	
Other Federal Subtotal	\$48,526
REQUESTED RECLAMATION FUNDING	\$48,526

Budget Proposal

Table 6. Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION		QUANTITY TYPE	TOTAL COST
	\$/UNIT	QUANTITY		
Salaries and Wages	0	0	0	0
Fringe Benefits	0	0	0	0
Travel	0	0	0	0
Equipment	0	0	0	0
Supplies and Materials	0	0	0	0
Contractual / Construction				
MWH				\$194,105
Other	0	0	0	0
Total Direct Costs				\$194,105
Indirect Costs	0	0	0	0
TOTAL ESTIMATED PROJECT COSTS				\$194,105

Budget Narrative

The research study for \$194,105 will be the sole budget item required and classified as Consultants Contract or Direct Cost. Consultants' rates were determined based on industry rates and consultants' expertise and consistent with the negotiated rates stipulated in the original agreement with MWH. Primary source of project funding will come from the Water Fund which will pay 75% (\$145,579) of the total project cost and 25% (\$48,526) will be funded with Federal/BOR grant money. Below are the assumptions for each of the budget category:

Salaries and Wages – Minimal City staff time will be charged to regular operating cost and will not be charged to this study.

Fringe Benefits – Minimal City staff time will be charged to regular operating cost and will not be charged to this study.

Travel – No travel expenses will be incurred in this study.

Equipment – The study does not require budget for this category.

Materials and Supplies – The study does not require budget for this category

Contractual – Budgeted total amount of \$194,105 is inclusive of all Direct, Other Direct Costs (estimates of Materials, Supplies & Equipment) and 5% Cost recovery on subconsultants. Table 7 to 9 are provided as reference for this budget.

Table 8. Brown and Caldwell

TASKS	Managing Engineer	Vice President	Engineer III	Project Analyst	Accountant I	Total Hours	Total Labor Cost	OTHER DIRECT COST	Total Cost
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]				
[REDACTED]	[REDACTED]			[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]			[REDACTED]	[REDACTED]		[REDACTED]		
[REDACTED]									
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]				[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]				[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]				[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]				[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]				[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]				[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]				[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]				[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Table 9. Consolidated Cost - Consultant and Sub-consultant

TASKS	TOTAL LABOR AND OTHER DIRECT COST	MWH 5% Cost Recovery on Subs & ODCs	TOTAL PROJECT COST
Task Order #1	\$18,932	\$394	\$19,326
Task Order #2	\$84,506	\$2,086	\$86,592
Task Order #3	\$86,510	\$1,677	\$88,187
GRAND TOTAL	\$189,948	\$4,156	\$194,105

Environmental and Regulatory Compliance Costs – The study does not require budget for this category.

Other Expenses – The study does not require budget for this category.

Indirect Costs – The study does not require budget for this category.

Total Costs – The Total Cost of the Study includes Contractual for consultants amounting to \$194,105.

APPENDIX A - LETTERS OF SUPPORT

DIANNE FEINSTEIN
CALIFORNIA



SELECT COMMITTEE ON INTELLIGENCE - VICE CHAIRMAN
COMMITTEE ON APPROPRIATIONS
COMMITTEE ON THE JUDICIARY
COMMITTEE ON RULES AND ADMINISTRATION

United States Senate

WASHINGTON, DC 20510-0504

<http://feinstein.senate.gov>

February 1, 2017

Acting Secretary Kevin Haugrud
United States Department of the Interior
1849 C Street, N.W.
Washington, DC 20240

Dear Acting Secretary Haugrud,

I write in support of the City of San Diego's application for a WaterSMART: Title XVI Water Reclamation and Reuse Program grant, administered through the Bureau of Reclamation at the United States Department of the Interior.

The City of San Diego is requesting funds to bolster its Pure Water program, an innovative and long-term approach to water purification that utilizes advanced technology to convert recycled water to potable water. This new source of purified drinking water will decrease the city's reliance on imported water supplies – the first phase of the Pure Water program alone is expected to provide the city with 30 million gallons per day of drinkable water by 2021. The project will ultimately provide one-third of San Diego's water supply by 2035.

If awarded funds, the City of San Diego will be able to continue developing environmental documentation and preparing construction for the initial phases of the project. Investment in diverse water supplies is particularly critical in light of California's devastating drought. The city's Pure Water program will ensure that San Diego residents can enjoy a reliable, safe, and sustainable drinking water supply for years to come.

I urge you to give the City of San Diego's application your full consideration. If you have any questions, please do not hesitate to contact my office.

Sincerely,

A handwritten signature in blue ink that reads "Dianne Feinstein".

Dianne Feinstein
United States Senator



November 4, 2014

Council President Todd Gloria
San Diego City Council
202 C St #10
San Diego, CA 92101
toddgloria@sandiego.gov

Re: San Diego Coastkeeper Support for Pure Water and Cooperative Agreement

Sent via email

Dear Council President Gloria and City Councilmembers:

On behalf of San Diego Coastkeeper I am writing to you today to express enthusiastic support for the City's Pure Water program and associated permitting process. San Diego Coastkeeper is a non-profit organization working to protect and restore the San Diego region's bays, beaches, watersheds, and ocean. Coastkeeper was founded in 1995 and has worked with the City over these past 19-plus years towards the realization of sound water quality and water supply solutions throughout our region. In continuation of those efforts, we are a signatory to the Pure Water Cooperative Agreement with the City.

With the upcoming vote on this matter, Council is poised to take a leadership role in ushering in a new era and approach to integrated water management solutions in our City, our region, and the southwestern United States. The importance of the upcoming decision cannot be overemphasized. For well over ten years Coastkeeper has been involved in the process of seeking an appropriate solution to Point Loma discharge that includes recycling and the production of locally-controlled potable water for our region. Today, Coastkeeper is pleased to support the City's Pure Water program and is proud to have been part of the development of the Cooperative Agreement with the City. We believe that this program will benefit not only our ocean and marine environment by beginning to reduce discharges into the ocean, but that it will also greatly benefit our region's current and future water supply needs.

Thank you for your commitment to finding environmentally appropriate solutions to both our water quality and water supply needs. The Pure Water program is truly a win-win for our City and our region.

Sincerely,

Matt O'Malley
Waterkeeper, Legal & Policy Director

FISHABLE. SWIMMABLE. DRINKABLE.



San Diego Coastkeeper is a registered trademark of the Waterkeeper Alliance

2825 Dewey Road #200
San Diego, CA, 92106
619.758.7743
www.sdcoastkeeper.org



**SAN DIEGO
COASTKEEPER**

cc:

Council President Pro Tem Sherri Lightner, sherrilightner@sandiego.gov

Councilmember Ed Harris, edharris@sandiego.gov

Councilmember Myrtle Cole, myrtlecole@sandiego.gov

Councilmember Mark Kersey, markkersey@sandiego.gov

Councilmember Lorie Zapf, loriezapf@sandiego.gov

Councilmember Scott Sherman, scottsherman@sandiego.gov

Councilmember David Alvarez, davidalvarez@sandiego.gov

Councilmember Marti Emerald, martiemerald@sandiego.gov

FISHABLE. SWIMMABLE. DRINKABLE.



San Diego Coastkeeper is a registered trademark of the Waterkeeper Alliance.

2825 Dewey Road #200

San Diego, CA, 92106

619.758.7743

www.sdcoastkeeper.org



**Connect.
Create.
Conserve.**

October 2, 2014

Board of Directors

Michael Beck
Chair

M. Lea Rudee, Ph.D.
Vice Chair

Janie DeCelles
Secretary

Philip Pryde
Treasurer

Jo Ann Anderson

Charles V. Berwanger

Bill Dahnke

Alan Grant

Cary Lowe

Barbara Palan

James Peugh

James Ryan

Tom Sudberry

Anthony Wagner

James Hubbell
Emeritus

Rob Hutzel
Executive Director

*Winner of the 2011
Take Pride in America
National Award for
Outstanding Partner and
the 2012 Keep America
Beautiful Distinguished
Service Citation*

The San Diego River Park
Foundation is a 501(c)(3)
charitable organization.

EIN 01-0565671

4891 Pacific Hwy, Ste 114
San Diego, CA 92110

(619) 297-7380

Ms. Ann Sasaki
Assistant Director of Public Utilities
Pure Water San Diego Program
City of San Diego
9192 Topaz Way
San Diego, CA 92123

Dear Ms. Sasaki:

The San Diego River Park Foundation is pleased to support the Pure Water San Diego program. We believe it will provide San Diego with a safe, sustainable local supply of drought-proof drinking water. It also can be part of the solution to addressing the permitting issues for the Point Loma Wastewater Treatment Plant.

The San Diego River Park Foundation believes Pure Water San Diego is an excellent long-term solution for addressing the City's water needs. Pure Water San Diego will give us more control over our water supply, making us less dependent on imported water.

The San Diego River Park Foundation has been active for many years in supporting the City's efforts to find long-term solutions for our region's water supply challenges. We believe the science supports this program, and there are sufficient safeguards to protect the public's health and welfare.

With this letter we reconfirm our support for the Pure Water San Diego program. We are pleased to join with others who are taking action to ensure the reliability of our economy and the health and safety of our citizens through pro-active water resource planning.

Sincerely,

Rob Hutzel
Executive Director



Surfrider Foundation San Diego County Chapter

9883 Pacific Heights Blvd, Suite D
San Diego, CA 92121
Phone: (858) 622-9661 Fax: (858) 622-9961

Dedicated to the protection and enjoyment of our oceans, waves and beaches.

September 30, 2014

Ann Sasaki
Assistant Director of Public Utilities
Pure Water San Diego Program
City of San Diego
9192 Topaz Way
San Diego, CA 92123

Dear Ms. Sasaki:

Surfrider Foundation San Diego County Chapter supports the Pure Water San Diego program that will provide San Diego with a safe, sustainable local supply of drought-proof drinking water and help to permanently resolve the Point Loma Wastewater Treatment Plant's need for a modified permit. We have had the opportunity to learn about the science of Pure Water San Diego, so we understand that purified water will meet all federal and state drinking water standards.

Our chapter believes Pure Water San Diego is an excellent long-term solution for addressing the City's water needs while also providing region-wide benefits. Pure Water San Diego will give us more control over our water supply, making us less dependent on imported water. As an added benefit, it helps reduce ocean pollution by reducing the amount of wastewater being sent to the Point Loma Wastewater Treatment Plant.

Thank you for continuing to move forward and pursue a viable new water supply for San Diego. Please add our name to the list of agencies, organizations and individuals taking action to ensure the reliability of our economy and the health and safety of our citizens through pro-active water resource planning.

Sincerely,

Roger Kube

Roger Kube
Chair
Surfrider Foundation
San Diego County Chapter

The Surfrider Foundation is a non-profit grassroots organization dedicated to the protection and enjoyment of our world's oceans, waves and beaches through a powerful activist network. Founded in 1984 by a handful of visionary surfers in Malibu, California, the Surfrider Foundation now maintains over 250,000 supporters, activists and members worldwide. For an overview of the Surfrider Foundation San Diego Chapter's current campaigns, programs and initiatives go to www.surfridersd.org or contact us at info@surfridersd.org or (858) 622-9661.



September 29, 2014

Ann Sasaki
Assistant Director of Public Utilities
Pure Water San Diego Program
City of San Diego
9192 Topaz Way
San Diego, CA 92123

Dear Ms. Sasaki:

The San Diego Chapter of WaterReuse supports the Pure Water San Diego program that will provide San Diego with a safe, sustainable local supply of drought-proof drinking water. Our organization understands the science of Pure Water San Diego, and recognizes that purified water will meet all federal and state drinking water standards.

Our organization believes Pure Water San Diego is an excellent long-term solution for addressing the City's water needs while also providing region-wide benefits. Pure Water San Diego will give our region more local control over our water supply, making us less dependent on imported water.

Thank you for continuing to move forward and pursue a viable new water supply for San Diego. Please add our name to the list of agencies, organizations and individuals taking action to ensure the reliability of our economy and the health and safety of our citizens through pro-active water resource planning.

Sincerely,

Jack Bebee
President
WaterReuse -- San Diego Chapter



402 West Broadway, Suite 1000
San Diego, CA 92101-3585
p 619 544 1300

www.sdchamber.org

September 24, 2014

Ann Sasaki
Assistant Director of Public Utilities
Pure Water San Diego Program
City of San Diego
9192 Topaz Way
San Diego, CA 92123

Dear Ms. Sasaki:

On behalf of the San Diego Regional Chamber of Commerce (Chamber), I am writing to express our support for the Pure Water San Diego program, which will provide San Diego with a safe, sustainable local supply of drought-proof drinking water and help eliminate the Point Loma Wastewater Treatment Plant's need for a modified permit.

With nearly 3,000 members representing 400,000 employees, the Chamber is actively involved in local government, regional economic development and providing valuable resources to its members. Through participating in the Mayor's Pure Water Working Group, the Chamber has had the opportunity to learn the science of Pure Water San Diego and understands that purified water will meet federal and state drinking water standards. Accordingly, on August 28, 2014, the Chamber's Board of Directors voted to support the Pure Water San Diego program in concept. Further, during the Chamber's annual delegation trip to Washington, D.C. in September, we hosted a Water Roundtable to discuss advantages of the Pure Water San Diego program with federal, state and local representatives.

Pure Water San Diego presents a long-term solution to the City's water needs, while also providing region-wide benefits. Pure Water San Diego will give San Diego enhanced control of its water supply, thereby reducing independence on imported water. It will also help reduce ocean pollution and save ratepayers billions in upgrades to the Point Loma Wastewater Treatment Plant.

For the reasons stated above, the Chamber urges you to support the Pure Water San Diego Program. If you have any questions, please do not hesitate to contact Chanelle Hawken, Executive Director of Public Policy, at (619) 544-1365 or chawken@sdchamber.org.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jerry Sanders', is written over a light grey horizontal line.

Jerry Sanders
President & CEO
San Diego Regional Chamber of Commerce

**CC: Honorable Kevin Faulconer
Honorable Members of the City Council**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

**75 Hawthorne Street
San Francisco, CA 94106-3901**

SEP 17 2015

**OFFICE OF THE
REGIONAL ADMINISTRATOR**

Mayor Kevin Faulconer
City of San Diego
City Administration Building
202 C Street, 11th Floor
San Diego, CA 92101

Dear Mayor Faulconer:

Thank you for meeting with Administrator McCarthy and me regarding the Pure Water San Diego Program and the Point Loma Wastewater Treatment Plant (WWTP). We have enjoyed a very cordial and productive working relationship with the City and San Diego stakeholders and are confident this productive engagement will continue. We commit to continue working with you on development of the water infrastructure necessary to meet the City's water supply and water quality protection needs.

We strongly support San Diego's plans to develop potable reuse capacity to reduce the region's reliance on imported supplies. We commend your work to involve and build support among local communities, businesses, and citizen groups in developing the Pure Water Program and its relationship to Point Loma operations. The Pure Water Program will optimize the benefits of investments in wastewater infrastructure in a way that is fully consistent with EPA's integrated planning initiative.

As we discussed, we understand San Diego area communities are concerned that investing in the infrastructure expansion associated with the Pure Water program will limit their financial capacity to upgrade treatment at Point Loma. As a result of expected Pure Water improvements in effluent quality, upgrades at Pt. Loma to achieve secondary treatment may not be needed to protect ocean water quality. I understand that the Pure Water planning process is progressing quickly and thus the City and its regional partners seek greater clarity regarding EPA views on the long-term regulatory prospects for the Point Loma plant. I value your efforts to work with us to explore potential options for addressing these concerns. We believe we can provide a significant level of assurance regarding these concerns based on what we now know.

We appreciate the City's timely submittal of its application for renewal of the NPDES permit and associated treatment standards for Point Loma pursuant to Clean Water Act Sections 402, 301(h) and 301(j)(5). We are reviewing the application in coordination with the San Diego Regional Water Quality Control Board, which jointly issues the NPDES permit for the Point Loma WWTP with EPA. We commend the City's willingness to incorporate specific provisions in the Point Loma permit linked to milestones in the Pure Water Program planning and implementation process. To date, we have identified no barriers to renewal of the permit and modified secondary treatment standards. EPA approved the three prior applications for modified secondary treatment standards for the Point Loma WWTP in 1995, 2002, and 2010 based on administrative records that demonstrated, in each instance, full satisfaction of the provisions of CWA Section 301(h) and 301(j)(5).

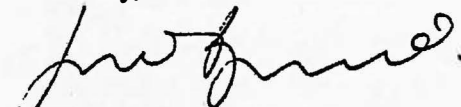
We expect that EPA and the Regional Water Board will be able to propose the revised NPDES permit with associated modified secondary treatment requirements by April, 2016 and issue the final permit by August, 2016 based on the application materials we have received. As you know, these permits are renewed on a five-year cycle. I expect EPA will be able to continue to renew subsequent CWA 301(h) modified permits for the Point Loma WWTP for as long as there are no relevant changes in the Clean Water Act and implementing regulations, and no significant deterioration in the quality of the Point Loma discharge or the response of the receiving ocean ecosystem to the ongoing discharge.

During our meeting, you explained that, due to ratepayer limitations, San Diego may be interested in seeking a legislative solution in order to provide long term financial certainty that the Cities will not need to fund both the Pure Water Program and further upgrades to achieve secondary treatment at Point Loma. While this letter is intended to provide you with a better understanding of the long-term permitting requirements for Point Loma, nothing in this letter precludes the City's ability to pursue legislative amendments.

As we discussed, EPA understands that local governments face substantial challenges in funding water infrastructure needs. The California Clean Water and Drinking Water State Revolving Funds may offer a cost-effective mechanism to finance elements of the Pure Water Program, and we would be happy to discuss funding options with the State Water Resources Control Board and the City.

We commend the City's leadership in developing an integrated long-term plan to build a more sustainable regional water supply system while ensuring water quality protection. Building on our productive meeting with Halla Razak on August 27th, we look forward to continuing our efforts to help move the Pure Water project forward. If you have questions, please contact me at (415) 947-8702 or David Smith, NPDES Permits Section, at (415) 972-3464.

Sincerely,



Jared Blumenfeld

cc: Gina McCarthy, EPA
David Gibson, RWQCB
Charles Lester, CCC

APPENDIX B - OFFICIAL RESOLUTION

RESOLUTION NUMBER R- 310530

DATE OF FINAL PASSAGE JUN 16 2016

A RESOLUTION OF THE COUNCIL OF THE CITY OF SAN DIEGO AUTHORIZING THE MAYOR AND/OR DESIGNEE TO APPLY FOR, ACCEPT AND EXECUTE A FINANCIAL ASSISTANCE APPLICATION TO THE U.S. BUREAU OF RECLAMATION UNDER THE WATERSMART TITLE XVI WATER RECLAMATION AND REUSE PROGRAM FOR FISCAL YEAR 2016 THROUGH FISCAL YEAR 2019 FOR FUNDING OF THE PURE WATER SAN DIEGO PROGRAM, NORTH CITY PROJECT.

WHEREAS, the Pure Water San Diego Program provides a new source of supply for the production of potable water for San Diego, increases the amount of reclaimed water, and diverts wastewater flows from the ocean outfalls while protecting the ocean; and

WHEREAS, on April 29, 2014, the City Council adopted Resolution Number R-308906 supporting the Pure Water San Diego Program, a phased, multi-year program that will ultimately create up to 83 million gallons per day of the City's water supply by 2035; and

WHEREAS, the North City Phase is comprised of the following main components: a new wastewater pump station that will collect additional wastewater flows and send the flows to the North City Water Reclamation Plant (NCWRP); the expansion of the NCWRP capacity; a new North City Advanced Water Purification Facility (NCAWPF) which will produce purified water for discharge to a local reservoir; and new pump stations and conveyance lines to move the purified water to the Miramar Reservoir until it is pulled into the existing water treatment system; and

WHEREAS, in an effort to obtain funding for this Project, the City of San Diego proposes to apply for an amount up to \$44,567,750 in federal grant funds from the U.S. Bureau of Reclamation WaterSMART Title XVI Water Reclamation and Reuse Program; and

WHEREAS, under Charter section 99, no contract, agreement or obligation extending for a period of more than five years may be authorized except by Ordinance approved by a two-thirds majority vote of the City Council; NOW, THEREFORE,

BE IT RESOLVED, by the Council of the City of San Diego, as follows:

1. That the Mayor or designee, is authorized and empowered for and on behalf of the City of San Diego to apply for, accept and execute a financial assistance application to the U.S. Bureau of Reclamation under the WaterSMART Title XVI Water Reclamation and Reuse Program for Fiscal Year 2016 through Fiscal Year 2019 for funding of the Pure Water San Diego Program, North City Project in an amount not to exceed \$44,567,750.


2. That the Chief Financial Officer is authorized to accept, appropriate and expend an amount not to exceed \$44,567,750 from the U.S. Bureau of Reclamation WaterSMART Title XVI Water Reclamation and Reuse Program for the Pure Water San Diego Program, North City Projects if financial assistance application funding is secured.

3. That the Chief Financial Officer is authorized to establish a special interest-bearing account for the financial assistance, if required for the purpose of providing funds for the Project, provided that the Comptroller first furnishes one or more certificates certifying that funds necessary for expenditure are, or will be, on deposit with the City Treasurer.

4. That the Chief Financial Officer, upon advice from the administering department, is authorized to transfer excess funds, if any, to the appropriate reserves.

APPROVED: JAN I. GOLDSMITH, City Attorney

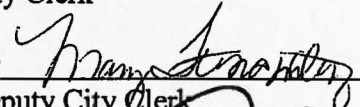
By


Raymond C. Palmucci
Deputy City Attorney

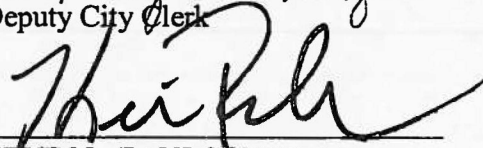
RCP:mt
May 31, 2016
Or.Dept:Public Utilities
Doc. No. 1286984

I hereby certify that the foregoing Resolution was passed by the Council of the City of San Diego, at this meeting of JUN 14 2016

ELIZABETH S. MALAND
City Clerk

By 
Deputy City Clerk

Approved: 6/16/16
(date)


KEVIN L. FAULCONER, Mayor

Vetoed: _____
(date)

KEVIN L. FAULCONER, Mayor

Passed by the Council of The City of San Diego on JUN 14 2016, by the following vote:

Councilmembers	Yeas	Nays	Not Present	Recused
Sherri Lightner	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lorie Zapf	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Todd Gloria	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Myrtle Cole	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mark Kersey	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chris Cate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scott Sherman	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
David Alvarez	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Marti Emerald	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Date of final passage JUN 16 2016

(Please note: When a resolution is approved by the Mayor, the date of final passage is the date the approved resolution was returned to the Office of the City Clerk.)

AUTHENTICATED BY:

KEVIN L. FAULCONER
Mayor of The City of San Diego, California.

ELIZABETH S. MALAND
City Clerk of The City of San Diego, California.

(Seal)

By *Mary Sherman*, Deputy

Office of the City Clerk, San Diego, California

Resolution Number R- 310530