



THE CITY OF SAN DIEGO
REPORT TO THE CITY COUNCIL

DATE ISSUED: October 2, 2014 REPORT NO: 14-061.

ATTENTION: Council President and Members of the City Council

SUBJECT: Point Loma Wastewater Treatment Plant - National Pollutant Discharge Elimination System (NPDES) Permit Application

REFERENCE: City Council Resolution R-308906, adopted on April 29, 2014

REQUESTED ACTIONS:

1. Approve the Mayor's proposal to submit the renewal application for a modified National Pollutant Discharge Elimination System (NPDES) Permit for the Point Loma Wastewater Treatment Plant
2. Authorize the Mayor or his designee to enter into a Cooperative Agreement between the City of San Diego and San Diego Coastkeeper, Surfrider Foundation San Diego Chapter, Coastal Environmental Rights Foundation, and the San Diego Audubon Society.

STAFF RECOMMENDATION:

Approve the Requested Actions.

SUMMARY:

Background

The City of San Diego operates the Metropolitan Sewerage System (Metro System) which provides wastewater treatment and disposal for the City of San Diego (City) and 12 Participating Agencies. It serves a population of 2.5 million and consists of four treatment plants, major pipelines and pump stations, as well as, two ocean outfalls. The Point Loma Wastewater Treatment Plant (Point Loma) is the main treatment facility with a permitted capacity of 240 million gallons per day (mgd). It discharges treated effluent into the Pacific Ocean 4.5 miles offshore at a depth of over 300 feet.

Point Loma operates with a modified National Pollutant Discharge Elimination System (NPDES) Permit that includes a variance from the Federal Clean Water Act (CWA) secondary requirements for the discharge of Total Suspended Solids (TSS) and Biochemical Oxygen Demand (BOD). The permit contains modified standards for only these two substances; all other constituents in the discharge must meet the same standards as in a secondary permit. This variance has ensured ocean protection while avoiding unnecessary and expensive secondary treatment upgrades.

Section 301(h) of the CWA allows the Environmental Protection Agency (EPA) to grant variances to ocean dischargers who demonstrate that the modified standards are not harmful to the ocean. Additionally, in the 1990s, the City worked with the local congressional delegation to pass special legislation modifying the CWA to provide the City with its own unique ability to apply for a modified permit for the Point Loma plant. This legislation, known as the Ocean Pollution Reduction Act (OPRA), was signed into law on October 31, 1994, and as a result, the City received its first modified permit (waiver) in 1995. The permit must be renewed every five years. The current Point Loma permit expires on July 31, 2015. Regulations require that a renewal application be submitted six months in advance or by February 1, 2015.

Discussion

In determining what course of action to take at Point Loma, the City considered the following factors:

- protecting the environment;
- meeting regulatory requirements;
- protecting ratepayers and reducing rate impacts; and
- ensuring future water supply needs

The City has several alternatives:

1. Convert the Point Loma Wastewater Treatment Plant to Secondary Treatment

While this alternative will comply with the CWA, without the need for a variance, this alternative is not recommended. The City is unique from most other wastewater dischargers in that Point Loma discharges its treated effluent through a very long and deep ocean outfall. The thermocline, a temperature layer within the water, keeps suspended solids deep. This discharge point also has the advantages of site-specific ocean conditions that include strong ocean currents, and a bottom topography and outfall diffuser design that provides superior dispersion and allows the discharge to be assimilated into the ocean water with a high degree of dilution. The City also conducts one of the most extensive ocean monitoring programs in the world. Years of comprehensive monitoring have demonstrated no negative impacts to the marine organisms surrounding the outfall.

Additionally, the scientific community has found that for an open coastal discharge like Point Loma's, BOD is of little concern. At the request of Congress the National Research Council completed a study in 1993 entitled "*Managing Wastewater in Coastal Urban Areas*", wherein it was determined that "*In open coastal waters and well-flushed estuaries, oxygen depletion due to BOD from wastewater discharges through a well designed outfall is generally of no ecological concern.*" Thousands of dissolved oxygen samples have been taken in the ocean off Point Loma and determinations have been made that no negative effect from BOD has ever been observed.

During the last permit application process in 2007, UCSD/Scripps Institution of Oceanography and San Diego State University professors conducted an independent review of the City's ocean monitoring data and concluded that there is no evidence of significant adverse impacts from the

Point Loma Ocean Outfall; there are no discernible connections between the wastewater plume and shoreline water quality; and the monitoring program is comprehensive and well conducted.

Given that there are no significant impacts to the ocean marine environment, there are other more cost effective solutions that will reuse the effluent that is currently being discharged into the ocean.

2. Submit a modified permit application with no other commitments

The City has the legal authority under OPRA to apply for a modified permit. Based on the City's extensive ocean monitoring program, and the efficacy of its treatment plant operations, the City would have no difficulty meeting the requirements for a modified permit. However, because a modified permit is not a standard process there is always the uncertainty that the EPA could deny the permit.

During the last permit process, environmental representative from the San Diego Coastkeeper and the Surfrider Foundation along with the California Coastal Commission expressed concern that the City was not doing enough to recycle its wastewater and reduce the amount of flow wasted into the ocean. As part of an agreement with the environmental community to support the last Point Loma modified permit, the City agreed to prepare a Recycled Water Study to look at maximizing the potential for reclamation and reuse and to minimize flows to Point Loma. That study, approved by the City Council in 2012, identified the potential to create up to 83 mgd of locally controlled potable water.

If the City simply submits a modified permit application with no commitment to create potable water, the environmental community will vigorously oppose the permit. Also, the Coastal Commission in its October 25, 2012 letter to then Mayor Sanders stated that the Commission would oppose the City's permit if the City did not implement potable reuse and begin complying with secondary treatment standards.

3. The Preferred Alternative - Submit a modified permit application, commit to building potable reuse and modify the Clean Water Act to allow for secondary equivalency

As stated above, the Recycled Water Study demonstrated that it is possible to reduce flows to Point Loma, thereby reducing the capital cost of secondary treatment upgrades, and create a new potable reuse water supply.

Given that 85 percent of the water in the City is from imported water supplies and is vulnerable to impacts from shortages and susceptible to price increases beyond our control, it makes sense to explore the potable reuse of water. When you view both water supply and wastewater discharge issues together, a comprehensive solution that will make use of an otherwise wasted resource and provide locally controlled, reliable water is the most cost effective solution.

On April 23, 2013, the City Council (R-308121) directed staff to define in greater detail the City's potable reuse options and to determine a preferred implementation plan and schedule that considers potable reuse options for maximizing the local water supply and reducing flows to the

Point Loma plant. This potable reuse program, referred to as Pure Water San Diego, will produce 83 mgd of safe, reliable, locally controlled potable water by 2035. On April 29, 2014, the City Council adopted a resolution (R-308906) supporting the implementation of Pure Water San Diego and the development of an implementation strategy to accomplish secondary equivalency at Point Loma through implementation of Pure Water.

In compliance with the City Council Resolution, staff is proposing submittal of a modified permit application based on the Pure Water San Diego Program goal of developing 83 mgd of potable reuse water by 2035. This results in off-loading Point Loma by removing flows and constituents at the upstream reuse facilities. This diversion would reduce the amount of water, as well as TSS and BOD discharged to the ocean. With sufficient off-loading, the total TSS discharge could be equivalent to or less than what would be discharged if Point Loma were a secondary plant at full capacity (9,942 metric tons per year). Since it is well established that BOD is of minor concern for a discharge facility like Point Loma, the resulting discharge could be found to be equivalent to secondary treatment for purposes of compliance with the CWA secondary treatment standard. Because the present law does not recognize this form of secondary equivalency, an administrative solution or change to the CWA will be required. Approval of secondary equivalency will mean that Point Loma will be permitted like any other secondary treatment facility, and no future modified permits or waivers will be required.

To develop consensus on how to move forward with the modified permit renewal, city staff has been meeting regularly since July 2013 with a diverse group of stakeholders. These stakeholders include the Metro Participating Agencies, as well as the local environmental groups represented by the San Diego Coastkeeper, Surfrider Foundation San Diego Chapter, Coastal Environmental Rights Foundation, and San Diego Audubon Society. As a result of this effort, a consensus has been reached on a recommended strategy. This strategy includes submitting a modified permit renewal application, implementation of the Pure Water Program and working on obtaining approval of secondary equivalency.

a) Modified Permit Application

The modified permit renewal will be based on compliance with the CWA 301(h) requirements as modified by OPRA; the proposed requirements for secondary equivalency; and a reduction in permitted TSS mass emissions from the current permit level of 13,598 metric tons per year to a maximum of 12,000 metric tons per year commencing on December 31, 2015.

Additionally, the City will commit to starting the design and environmental review for the first phase of at least 15 mgd of potable water from the Pure Water Program. Also included in the permit application as future goals, pending approval of secondary equivalency, will be the delivery of at least 15 mgd of water from the Pure Water Program by 2023, 30 mgd (cumulative) by 2027 and the final total of 83 mgd (cumulative) by 2035. This phased approach will allow the City to move forward with implementation in a timely manner while allowing time to continue to work with state regulators on indirect and direct potable reuse criteria.

b) Secondary Equivalency

The City and its stakeholders have agreed to proposed language for secondary equivalency to set modified standards for TSS and BOD based upon Point Loma's unique situation. In addition to these modified standards, the City will maintain its current enhanced ocean monitoring program and Industrial Source Control Program.

The City has briefed our local congressional delegation and both Senators Feinstein and Boxer on this proposal. With approval of secondary equivalency, either through an administrative solution or legislative action, all uncertainty related to future permit renewals will be resolved and the remaining flow at Point Loma will not have to be converted to secondary treatment, saving ratepayers over \$800 million.

The basis for the modified permit renewal and the terms for secondary equivalency were agreed upon by all stakeholders. Two subject matter experts, Dr. Mike Stenstrom, a civil engineer from UCLA and Dr. Daniel Schlenk a marine toxicologist from UC Riverside, provided technical support to the environmental groups and found no issues with the proposed recommendation. Additionally, a panel of scientists from UCSD and Scripps Institution of Oceanography are evaluating the proposal and we expect their review to be completed by mid-October 2014.

Cooperative Agreement

To memorialize the support of the environmental stakeholders, City staff has negotiated a Cooperative Agreement with the environmental stakeholders. Under the terms of the Agreement, the City will commit to the implementation of Pure Water San Diego and the production of 83 mgd of potable reuse by 2035 in return for the environmental stakeholder's commitment to support the City's next, and all future, Point Loma permit applications and to support secondary equivalency. The Cooperative Agreement outlines each party's responsibilities, provides a schedule for implementation of the Pure Water Program, and includes remedies and opportunities for renegotiation should any part of the overall strategy not be possible to implement.

FISCAL CONSIDERATIONS:

The total capital cost to upgrade the Point Loma Wastewater Treatment Plant to secondary treatment is \$2.1 billion. The capital cost for Pure Water San Diego is approximately \$2.5 to 3 billion. The cost of imported water has doubled in the last five years and it is expected to increase in the future. When evaluating future wastewater and water costs, the integrated water-wastewater solution afforded by Pure Water San Diego is the more cost effective solution when compared to the overall \$23 billion cost of secondary treatment and the purchase of imported water versus Pure Water at \$21 billion by 2050.

Any future expenditure of funds related to Pure Water San Diego will require a separate City Council approval.

PREVIOUS COUNCIL and/or COMMITTEE ACTION:

On July 17, 2012, the City Council accepted (R-307584) the Recycled Water Study. On April 23, 2013, the City Council accepted (R-308121) the Water Purification Demonstration Project Report. On April 29, 2014, the City Council (R-308906) adopted a resolution in support of Pure Water San Diego.

COMMUNITY PARTICIPATION AND PUBLIC OUTREACH EFFORTS:

The Independent Rates Oversight Committee approved the recommended actions on September 15, 2014. The Metro Commission will review the recommended actions on October 16, 2014.

In April 2014, the City formed the Pure Water Working Group to provide diverse viewpoints and input on the City's efforts to provide a safe, secure and local drinking water supply. The group includes representatives from community planning groups, businesses, City Council District Offices, environmental groups, and water coalitions. The group has been meeting on a monthly basis since May 2014.

City staff has made over 200 presentations regarding potable reuse and the water purification demonstration plant at the North City Water Reclamation Plant. Most recently, staff has made presentations to the following organization:

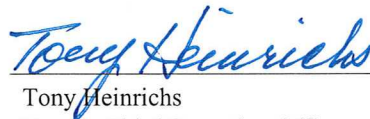
August 12, 2014	Regional Chamber of Commerce
September 2, 2014	Equinox Center Policy Committee
September 11, 2014	Industrial Environmental Association Water Committee
September 11, 2014	San Diego Taxpayers Association
September 16, 2014	Water Reliability Coalition
September 22, 2014	CONNECT Policy Committee
October 6, 2014	C3

KEY STAKEHOLDERS AND PROJECTED IMPACTS:

Water and wastewater ratepayers, the environmental community, and the business community.



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Attachment: Cooperative Agreement between the City of San Diego and Environmental Stakeholders