City Staff Report to NR&C July 2, 2013

| REQUEST FOR COUNCIL ACTION CITY OF SAN DIEGO | | | | | | (FOR COMPTROLLER'S USE ONLY) | | | |
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| TO: | | FROM | (ORIG | INATING I | DEPARTMENT |): DATE: | | · | |
| CITY COUNCIL | | 1 | • | s - Wastewat | | 06/24/2013 | | | |
| SUBJECT: Non-Potab | le Recycl | 1 | | | | 1 | | | |
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| PRIMARY CONTAC | T (NAME | . PHON | E): | ·/·/a | SECONDARY | CONTACT (N. | AME. PI | HONE): | |
| Lee Ann Jones-Santos | | | | A | | (858)292-6313 M | | | |
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| PREPARATION OF: | | ESOLUT | | | NANCE(S) | AGREEMENT | | DEED(S) | |
| Accept the Recycled V | Vater Pric | ing Stud | y and St | tudy Addeno | dum and approv | e a recycled wate | er rate in | crease under | |
| | either Alternative 1 - a Unitary rate structure or Alternative 2 - a Zone rate structure. | | | | | | | | |
| STAFF RECOMMENDATIONS: | | | | | | | | | |
| Approve the proposed | action. | | | | | | | | |

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| SPECIAL CONDITIONS (REFE | R TO A.R. 3.20 FOR INFORMATION ON COMPLETING THIS SECTION) |
|--------------------------|--|
| COUNCIL DISTRICT(S): | Citywide |
| COMMUNITY AREA(S): | Citywide |
| ENVIRONMENTAL IMPACT: | |
| CITY CLERK | |
| INSTRUCTIONS: | |

COUNCIL ACTION EXECUTIVE SUMMARY SHEET

CITY OF SAN DIEGO

DATE: 06/24/2013

ORIGINATING DEPARTMENT: Public Utilities - Wastewater

SUBJECT: Non-Potable Recycled Water Pricing Study

COUNCIL DISTRICT(S): Citywide

CONTACT/PHONE NUMBER: Lee Ann Jones-Santos /(858)614-4042 MS 901A

DESCRIPTIVE SUMMARY OF ITEM:

The City of San Diego (City) commissioned Raftelis Financial Consultants (RFC) to conduct the Recycled Water Pricing Study (Pricing Study). The purpose of the study was to review all financial aspects of the recycled water operations and capital program. The Pricing Study included extensive review of the current and projected recycled water demands, operating and capital expenses, and policy issues related to allocation of costs among recycled water, potable water and wastewater enterprises.

STAFF RECOMMENDATION:

Approve the proposed action.

EXECUTIVE SUMMARY OF ITEM BACKGROUND:

Since 1963, the City has treated its wastewater at the Point Loma Wastewater Treatment Plant (PLWWTP). Wastewater is currently being treated to advanced primary standards. In 1987, the US Environmental Protection Agency (EPA) along with other environmental groups sued the City for not meeting the provisions of the Clean Water Act (CWA) of 1972. The Ocean Pollution Reduction Act (OPRA) was passed in 1994, which allowed the City to reapply for a Section 301(h) waiver. The City reapplied and received a waiver from treating wastewater to secondary standards as required by the CWA. One of the conditions of the OPRA required the City to implement a water reclamation program that would create a system capacity to treat 45 million gallons per day (MGD) by 2010. The City has fulfilled the treatment capacity requirement with the completion of the 30 MGD North City Water Reclamation Plant (NCWRP) in 1997 and the 15 MGD South Bay Water Reclamation Plant (SBWRP) in 2002. A 1995 federal court order further required the City to construct a recycled water distribution system in conjunction with building the NCWRP.

Recycled water distribution facilities are currently in place to serve the northern section of the system extending from the coast to the City of Poway (Poway) and connections to the Olivenhain Municipal Water District (OMWD). The current distribution system in the northern section of the system consists of 83 miles of pipeline, nine MG and three MG reservoirs, and three pump stations. The distribution system for the SBWRP is limited (less than one mile) and connects to Otay Water District's (Otay) retail distribution system via their storage tank. The City also serves the International Boundary Water Commission and Caltrans.

The current system currently has approximately 570 retail connections serving mostly irrigation customers, a few industrial customers, e.g., cooling towers, and four wholesale connections, two

to the OMWD, and one each to Poway and Otay. Because the bulk of the use is for irrigation, the production of recycled water fluctuates significantly with the seasons.

The current commodity rate for recycled water is \$0.80 per hundred cubic feet (HCF). To ensure that the recycled water is marketable, staff recommends that the commodity rate for recycled water be lower than the potable irrigation rate. Most agencies in California charge a recycled water rate between 75 to 90 percent of the potable water rate. The true cost of service rate exceeds the potable irrigation rate therefore the Department has provided two alternatives, a Unitary rate and a Zone rate calculated using a modified cost of service. Under Alternative 1 - Unitary rate, all retail customers would pay the same rate regardless of which zone they receive their recycled water from. This rate structure is the same method used for the current water and wastewater system. Under Alternative 2 – Zone rate, retail customers would pay a different rate depending on which zone they are receiving recycled water from. The rate would be based on the cost to build, operate and maintain the infrastructure associated with each zone. Because the North City zone has an extensive distribution system, its rate is higher than the southern zone. Either rate structure would meet the revenue requirement needed to operate the recycled water system.

The modified cost of service rate for the Unitary system and the Zone rate include the capital costs of the tertiary component of the plants including demineralization facilities, the tertiary treatment operating costs, and distribution system capital and operating costs. These costs represent the "extra" costs to produce recycled water for sale. The modified cost of service for the Unitary system results in a recycled water rate of \$2.261 per HCF. The Unitary rate is designed to provide a good balance between incentives for recycled water use and cost of service. The Zone rate applies the costs associated with the modified cost of service to the northern and southern zones. The benefit of the zone rate model is that it more closely aligns the rate charged to the costs of operating the facilities providing the service. The Zone rate analysis would result in a rate of \$3.208 per HCF for the North City area and a rate of \$1.30 per HCF for the South Bay area. As costs and sales can be projected with reasonable certainty for only a few years, the Department will review the recycled water rate periodically with available updated information. See the attached full report for complete details.

FISCAL CONSIDERATIONS: N/A

EQUAL OPPORTUNITY CONTRACTING INFORMATION (IF APPLICABLE):N/A

PREVIOUS COUNCIL and/or COMMITTEE ACTION (describe any changes made to the item from what was presented at committee): N/A

COMMUNITY PARTICIPATION AND PUBLIC OUTREACH EFFORTS:

This issue was presented to the Independent Rates Oversight Committee (IROC) on June 24, 2013. IROC received public comment and concerns were raised about the Unitary rate structure. As a result of public input an Addendum to the Study was produced which analyzed a zone rate structure as Alternative 2.

KEY STAKEHOLDERS AND PROJECTED IMPACTS: N/A

Sasaki, Ann Originating Department

Deputy Chief/Chief Operating Officer

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THE CITY OF SAN DIEGO

REPORT TO THE CITY COUNCIL

DATE ISSUED:

July 2, 2013

REPORT NO: 13-56

ATTENTION:

Natural Resources and Culture Committee,

Agenda of July 10, 2013

SUBJECT:

Recycled Water Pricing Study

REQUESTED ACTION:

Accept the Recycled Water Pricing Study and Study Addendum and approve a recycled water rate increase under either Alternative 1 - a Unitary rate structure or Alternative 2 - a Zone rate structure.

- 1. Alternative 1 is a Unitary rate structure which would increase the existing rate from \$0.80 per hundred cubic feet (HCF) to \$2.261 per HCF for all customers.
- 2. Alternative 2 is a Zone rate structure which would increase the rate for customers in the North City zone to \$3.208 per HCF and customers in the South Bay zone to \$1.30 per HCF.

STAFF RECOMMENDATION: Under Alternative 1, all retail customers would pay the same rate regardless of which zone they receive their recycled water from. This rate structure is the same method used for current water and wastewater ratepayers. Under Alternative 2, retail customers would pay a different rate depending on which zone they are receiving recycled water from. The rate would be based on the cost to build, operate and maintain the infrastructure associated with each zone. Because the North City zone has an extensive distribution system, its rate is higher than the South Bay zone. Either rate structure would meet the revenue requirements needed to operate the recycled water system.

SUMMARY:

BACKGROUND

The City operates two water reclamation plants, the North City Water Reclamation Plant (NCWRP) which has a capacity of 30 million gallons per day (mgd) and the South Bay Water Reclamation Plant (SBWRP) which has a capacity of 15 mgd. Associated with the water reclamation plants are the northern and southern recycled water distribution systems. The northern distribution system is comprised of 83 miles of pipeline ranging in size from 4-inch to 18-inch in diameter, 3 pump stations and 2 reservoirs. It serves the area north of Highway 52, from the coast to the City of Poway and also provides connections to the Olivenhain Municipal

Water District (OMWD). The southern distribution system is limited (less than one mile) and connects to the Otay Water District's (Otay) retail distribution system and storage tank. The City also serves the International Boundary Water Commission and Caltrans. Although the recycled water system is composed of a North City and a South Bay service area, the City has always considered it one system.

HISTORY

Since 1963, the City has treated its wastewater at the Point Loma Wastewater Treatment Plant (PLWTP). The plant is currently treating wastewater to chemically enhanced advanced primary treatment standards. In 1987, the U.S. Environmental Protection Agency (EPA) along with environmental groups sued the City for not meeting the provisions of the Clean Water Act (CWA) which requires all treatment plants to upgrade to secondary treatment standards. In 1994, the Ocean Pollution Reduction Act (OPRA) was passed which allowed the City to apply for a Section 301(h) waiver from CWA standards. In addition to applying for and receiving a waiver from the secondary treatment standards, one of the conditions of OPRA required the City to implement a water reclamation program that would create a system capacity to treat 45 mgd by 2010. The North City and South Bay Water Reclamation Plants were built to comply with the conditions of OPRA and the costs related to the treatment plants were borne by the Metro Wastewater ratepayers.

A 1995 federal court order further required the City to construct an optimized recycled water distribution system in conjunction with building the NCWRP. This distribution system, along with the distribution system in the South Bay, was funded by Water ratepayers.

The 1998 Regional Wastewater Disposal Agreement between the City and the Participating Agencies of the Metropolitan Sewerage System (Metro) stipulates that the revenue from the sale of recycled water from the NCWRP should first be used to pay for the operating and capital expenses associated with the optimized distribution system and then the operating expenses for the tertiary treatment portion of the plant, with any remaining revenues accruing to the Metro Wastewater fund. Revenue from the sale of recycled water from the SBWRP accrues to the Metro Wastewater fund.

By substituting recycled water for potable water, the City's potable water system has benefited from the expansion of the recycled water system through the creation of additional capacity, less reliance on imported water, and reduced purchases of more expensive treated water from the County Water Authority. The use of recycled water is also recognized as an important component of the City's Long-Range Water Resources Plan. Since 2001, over 350 new customers were added to the system.

REVENUE REQUIREMENTS

In order to determine the appropriate recycled water rate, the revenue requirements needed to sustain the system must first be determined. Projected revenue requirements include all operating and capital expenses of the recycled water system. Gross revenue requirements include recovery of operation and maintenance (O&M), pay-as-you-go capital (PAYGO), and debt service costs related to the construction of the recycled water distribution system. The City's policy is to fund 80 percent of the capital costs through debt funding and the balance

through PAYGO and other sources. Net revenue requirements, which are the gross revenue requirements less offsets, are revenues to be potentially derived from rates for recycled water. Examples of Revenue Offsets are:

- Incentives from the Metropolitan Water District (MWD) and the San Diego County Water Authority (SDCWA) in the amount of up to \$250 and \$200 per acre foot (AF) of recycled water sales, respectively, for all sales at NCWRP and only SDCWA incentives for retail sales at SBWRP;
- Fees of \$25 per AF from OMWD for sales in its service area because it is not a party to the Metro Wastewater Agreement. Per OMWD's contract, the \$25/AF fee only applies to sales to OMWD's initial connection and does not apply to the recycled water it sells to any customers within the city limits of San Diego;
- Revenues collected from recycled water sales to Poway based upon a negotiated contract rate;
- Capacity charges collected from new customers; and,
- Meter installation costs from retail customers.

While the use of recycled water has had its long-term benefits, the current pricing model does not recoup the actual costs for producing recycled water. Costs are currently allocated among wastewater, water and recycled water customers.

RATE DEVELOPMENT

Rate development should consider three major objectives:

- 1. Pricing should be set to ensure greater financial sufficiency more in line with the cost of providing the service;
- 2. Rates should be relatively easy to implement; and,
- 3. Rates should be based upon a fair and equitable approach so that users pay in proportion to the cost of providing the service.

With these considerations in mind, the Pricing Study and the Study Addendum made the following assumptions and considerations:

The recycled water system could be considered a unitary system such that all the costs, operating and capital should be proportionately shared by irrigation, industrial, and wholesale customers receiving recycled water from the NCWRP and SBWRP. This means that all users should share in all the costs of the recycled water system, provided that these users are within the Metro Wastewater service area. The rationale for the unitary recycled water system are:

- a. The Metro Wastewater System is a unitary system, and all wastewater users proportionately share in the costs of this system irrespective of their location, the collection system, or the proximity to the specific treatment plant into which they discharge; and
- b. The NCWRP and SBWRP plants were constructed to meet the OPRA requirements. The costs related to the construction and operation of these plants are part of the unitary Metro Wastewater System. The City received a federal construction grant for the NCWRP; and grant conditions require the City to meet certain reuse targets. Capital costs incurred for the recycled water distribution system to meet these reuse targets are therefore considered to be part of the integrated system that benefits all recycled water customers. All customers share in the costs and benefits of the system, which means that all users share in the costs.
- c. The City has entered into agreements with Poway, OMWD, and Otay. Poway has a contractual rate with the City for its recycled water. The agreements with the latter two agencies specify that the same rates charged to City customers will apply to these customers. The language of these agreements implies a unitary system, wherein all the costs of the recycled water system would be shared by all customers.
- 2. Based on input from stakeholders, the Study Addendum considered the recycled water system as two separate zones, because the northern and southern distribution systems are not physically connected to one another. Recycled water from the NCWRP cannot be distributed through the southern distribution system and recycled water from the SBWRP cannot be distributed through the northern distribution system and customers in one zone do not benefit from the infrastructure in another zone. Under this scenario, the costs associated with the North City zone would be borne by customers who benefit from that system and costs associated with the South Bay zone would be borne by customers who benefit from that system.
- 3. The true cost of producing recycled water includes the operating and capital costs of all the facilities treatment and distribution. Cash expenses already incurred are appropriately excluded from the analysis. Ongoing debt service costs for the treatment plants and the distribution system are included in the revenue requirements to determine the cost of producing recycled water.
- 4. To ensure that recycled water is marketable, the commodity rate for recycled water should be lower than the potable irrigation rate due to the fact that recycled water is used mainly for irrigation purposes. Most agencies in California charge a recycled water rate between 75 to 90 percent of the potable water rate. The City's current recycled water commodity rate is 20 percent of the current potable irrigation rate of \$4.014 per HCF.

A true cost of service would include all costs, both capital and operational and the offsetting revenue stream for the NCWRP, SBWRP, and the recycled water distribution system. However, the City is recommending a modified cost of service because the capital and operational costs of the NCWRP and SBWRP up through secondary treatment should be borne by the Metro Wastewater ratepayers. The City is required to treat wastewater and the Metro Wastewater

ratepayers therefore benefit from the operation of the NCWRP and the SWBWP and secondly the City was required to construct these plants to comply with the requirements of OPRA which allowed the wastewater system to receive a 301(h) waiver and avoid the cost of an upgrade to secondary treatment at the PLWTP. Additional tertiary treatment beyond secondary treatment standards to produce recycled water should be borne by recycled water customers. Under the modified cost of service, only the following costs are considered:

- a. The ongoing debt service costs for the tertiary capital component of the NCWRP and SBWRP,
- b. The ongoing debt service costs for the demineralization facilities at the NCWRP,
- c. The tertiary treatment operating costs at the NCWRP and the SBWRP,
- d. The ongoing debt service costs and operating cost of the optimized recycled water distribution system,
- e. Annualized capital costs for future upgrades to the tertiary process, demineralization system, and optimized recycled water distribution system.

RATE ALTERNATIVES

Two alternatives were calculated under the modified cost of service.

Alternative 1 - Unitary rate: This structure results in a recommended recycled water rate of \$2.261 per HCF. This rate is approximately 56 percent of the current potable irrigation rate. The rate is designed to provide a good balance between incentives for recycled water use and cost of service.

Alternative 2 – Zone rate: This structure results in a recommended recycled water rate of \$3.208 per HCF for the North City zone and a rate of \$1.30 per HCF for the South Bay zone.

The revenue requirements for operation of the recycled water system are met by either rate structure. The benefits of the Unitary rate are that all retail customers pay the same rate and are treated equally. This is consistent with the Unitary rate model used for water and wastewater ratepayers; they pay the same rate per HCF whether they are located near a treatment plant or farther away from a treatment plant. The benefit of the Zone rate model is that it more closely aligns the rate charged to the costs of operating the facilities and distribution system providing the service.

As costs and sales can be projected with reasonable certainty for only a few years, the Department will review the recycled water rate periodically with available updated information.

A comparison of recycled water rates in the region shows that even with the proposed rate increase, the City rate will generally be lower than the City of Escondido at \$2.72 per HCF, Otay at \$3.31 per HCF and Padre Dam Municipal Water District at \$5.02 per HCF.

The recycled water base fees or meter charges have not been revised for several years. Base fees include costs of customer service, billing, meter maintenance and a portion of the costs to provide capacity. The cost allocation process provides a reasonable basis to calculate the base fees and the calculated base fees are reasonably close to those for potable service. The differences in the larger meters result from use of the latest capacities of the larger meters shown

in the AWWA M22 Manual Sizing Water Service Lines and Meters. The proposed monthly meter charges and rates are shown on Table 7-4 – Recycled Water Monthly Meter Charges, of the Recycled Water Pricing Study report attached.

FISCAL CONSIDERATIONS:

The recycled water system has been running at a substantial deficit since its inception, resulting in recycled water production and distribution costs being allocated amongst all recycled water, potable water and wastewater customers. The annual revenue requirement under either Rate Alternative 1 or 2, based on the recommended modified cost of service approach is approximately \$13.2 million, while total revenue at the existing rate is producing around \$7 million annually. These revenues would be considered a "revenue offset" to both the Water and Wastewater revenue requirement, thus providing downward pressure on future potable and wastewater rates.

Additionally, the Park and Recreation Department is one of the largest customers of recycled water. At the Unitary rate of \$2.261 per HCF, their recycled water costs would increase yearly from approximately \$266,000 (based on FY12 usage) to approximately \$752,000, and at the Zone rate of \$3.208 per HCF, costs would increase yearly to approximately \$1,066,000.

PREVIOUS COUNCIL and/or COMMITTEE ACTION:

In 2001 (Manager's Report No. 01-071), reclaimed water rates were reduced to .080/HCF as a means of increasing the customer base and overall demand.

COMMUNITY PARTICIPATION AND PUBLIC OUTREACH EFFORTS:

This issue was presented to the Independent Rates Oversight Committee (IROC) on June 24, 2013. IROC received public comment and concerns were raised about the Unitary rate structure. As a result of public input an Addendum to the Study was produced which analyzed a Zone rate structure.

KEY STAKEHOLDERS AND PROJECTED IMPACTS:

Water, Wastewater and Recycled Water ratepayers. An increase in the recycled water rate will ensure that customers benefiting from the recycled water system pay their proportionate share.

Ann Sasaki

Assistant Public Utilities Director

Business Support Branch

Attachments: Recycled Water Pricing Study Report

Addendum to Recycled Water Pricing Study Report

Recycled Water Pricing Study Report Addendum July 2, 2013

CITY OF SAN DIEGO

PUBLIC UTILITIES DEPARTMENT

Recycled Water Pricing Study Report Addendum July 2, 2013

ADDENDUM TO THE REPORT

Recycled water rates were presented in the June 19, 2013 Recycled Water Pricing Study Report. Since the report was finalized and presented, the Department prepared this addendum and had the consultant review and confirm the calculations in the tables attached. The Department is recommending several changes and an additional rate alternative.

The Recycled Water Pricing Study report was presented to the Independent Rates Oversight Committee (IROC) on June 24, 2013. IROC received public comment on the proposed rate increase based on the modified cost of service. Concerns were raised about using a Unitary rate for the recycled water system since the northern and southern distribution areas are not physically connected to each other, and users in the southern area do not benefit from the NCWRP and its distribution system. Based on this feedback, the Department agreed to look at a "Zone rate" structure as an alternative, whereby the costs associated with the North City system would be borne by customers who benefit from that system and costs associated with the South Bay system would be borne by customers who benefit from that system. The Zone rate analysis would result in a rate of \$3.208 per hundred cubic feet (HCF) for the North City area and a rate of \$1.30/HCF for the South Bay area.

The revenue requirements for operation of the recycled water system are met by the modified cost of service Unitary rate or the Zone rate. The benefits of the unitary system are that all retail customers pay the same rate and are treated equally. This is consistent with the unitary rate model used for water and wastewater ratepayers; all customers pay the same rate whether located near a treatment plant or farther away. The benefit of the Zone rate structure is that it more closely aligns the rate charged to the cost of operating each individual facility and respective distribution system.

During the development of the Zone rate, it was discovered that the Revenue Offsets (Table 7-3) used in the calculation of the Revenue Requirements excluded the base charges. The rate model has been updated to include this revenue offset of approximately \$640,000 per year and the rate has been adjusted accordingly.

The Department has added a capital improvement project for the demineralization of reclaimed water using the Electrodialysis Reversal (EDR) process. The project will relocate two trailer-mounted EDR units from the North City Water Reclamation Plant (NCWRP) to the South Bay Water Reclamation Plant to reduce the Total Dissolved Solids (TDS) in the reclaimed water produced at the South Bay Water Reclamation Plant (SBWRP). Demineralization will reduce the level of TDS in the reclaimed water. The cost for adding two EDR units with capacity of 6 million gallons per day is approximately \$2.9 million, and will be cash funded in FY 2014 and 2015. This cost has been included in the development of the 4-year recycled water rate.

The following Tables have been updated or added since the release of the final report:

Table 1 (Addendum to Table 7-3 in the Report) below shows the rate calculation with these two adjustments. The proposed commodity recycled water rate is \$2.261 per hundred cubic feet HCF, compared to the previous proposed rate of \$2.241 per HCF, and shows how the revenue is split between the Water and Metro Wastewater System Funds.

Table 1 Modified Cost of Service (Addendum to Table 7-3)

| | Projected | Projected | Projected | Projected |
|--|--------------|-------------------------|--------------|--------------|
| | 2014 | 2015 | 2016 | 2017 |
| Revenue | | | | |
| Requirements | | | | |
| O&M Costs | \$2,966,987 | \$3,010,580 | \$3,106,970 | \$3,231,248 |
| Treatment Costs | \$4,032,913 | \$4,073,242 | \$4,113,975 | \$4,278,534 |
| Capital | , , | . , | | |
| Costs | | | | |
| Existing Debt Service | \$5,104,219 | \$5,104,243 | \$5,141,858 | \$5,083,578 |
| Proposed Debt Service | \$47,873 | \$95,745 | \$95,745 | \$149,089 |
| Pay-as-you-go Capital | \$755,828 | \$759,106 | \$811,235 | \$815,872 |
| Subtotal: Capital Costs | \$5,907,920 | \$5,959,095 | \$6,048,838 | \$6,048,539 |
| Total Revenue Requirements | \$12,907,820 | \$13,042,917 | \$13,269,782 | \$13,558,322 |
| | | | | |
| Less: Revenue Offsets | | | | |
| Credits from MWD and CWA | \$2,758,715 | \$2,786,300 | \$2,564,380 | \$2,337,740 |
| Base Charge Revenue (Projected) | \$639,818 | \$622,201 | \$639,607 | \$665,592 |
| Poway Contract Revenue | \$462,046 | \$471,332 | \$480,806 | \$505,038 |
| Fees from Olivenhain | \$15,941 | \$15,941 | \$15,941 | \$15,941 |
| Interest Revenue | \$0 | \$0 | \$0 | \$0 |
| Meter Installation | | | | |
| Revenue | \$100,000 | \$105,000 | \$25,000 | \$25,000 |
| Capacity Fee Revenue | \$73,128 | \$73,128 | \$24,376 | \$24,376 |
| Subtotal Revenue Offsets | \$4,049,647 | \$4,073,902 | \$3,750,110 | \$3,573,687 |
| TOTAL NET REVENUE REQUIREMENTS | \$8,858,173 | \$8,969,015 | \$9,519,672 | \$9,984,635 |
| TOTAL REPERTOR REQUIREMENTS | ψυ,000,170 | 40,707,013 | φ2,512,072 | \$9,904,033 |
| Total Sales (HCF) | 4,004,320 | 4,083,701 | 4,173,309 | 4,252,233 |
| Calculated Recycled Water Rate, \$/HCF | \$2.213 | \$2.197 | \$2,282 | \$2,349 |
| Average 4 year | , | + === - , | 7-1-5 | 4 |
| rate | \$2.261 | \$2.261 | \$2.261 | \$2.261 |
| Revenue to Water Fund | \$8,638,156 | \$8,643,324 | \$8,719,961 | \$8,883,900 |
| Revenue to Metro Fund | \$4,269,664 | \$4,399,593 | \$4,549,821 | \$4,674,422 |

Table 2 (Addendum to Table 3 in the Report Appendix) shows projected CIP expenditures for Fiscal Years 2014 through 2017.

Table 2
Recycled Water CIP
(Addendum to Table 3 in Report Appendix)

| Line | r | | Budgeted | | Projected | | Projected | | Projected | Projected | | |
|------|---|----|-----------|----|-----------|---------|-----------|---------|-----------|-----------|---------|--|
| No. | | | FY 2014 | | FY 2015 | FY 2016 | | FY 2017 | | | FY 2018 | |
| 1 | AA - Reclaimed Water Extension | \$ | 546,364 | \$ | 562,754 | \$ | 579,637 | \$ | 602,823 | \$ | 626,935 | |
| 2 | Camino del Sur RW Pipelines - Part Agmt | \$ | - | \$ | · - | \$ | ·- | \$ | • | \$ | - | |
| 3 | Carmel Valley Recycled Waterline | \$ | - | S | - | \$ | - | \$ | - | \$ | - | |
| 4 | Pacific Highlands RWP - Part Agmt | \$ | - | \$ | - | \$ | - | \$ | - | \$ | - | |
| 5 | Recycled Water System Upgrades | \$ | - | \$ | - | \$ | - | \$ | - | \$ | - | |
| 6 | Camino del Sur RW Project - E&CP Rd. Improv | \$ | - | \$ | - | \$ | - | \$ | - | \$ | - | |
| 7 | Los Penasquitos Recycled Waterline | \$ | - | \$ | - | \$ | - | \$ | - | \$ | _ | |
| 8 | RW PS Drain Line Relocation | \$ | - | \$ | - | \$ | - | \$ | _ | \$ | - | |
| 9 | 3 MG Black Mountain Ranch RW Steel Tank | \$ | - | \$ | - | \$ | - | \$ | - | \$ | - | |
| 10 | 9 MG Miramar Recycled Water Tank | \$ | - | \$ | _ | \$ | - | \$ | - | \$ | - | |
| 11 | Camino del Sur Pipeline - North of SR56 | \$ | - | \$ | _ | \$ | - | \$ | - | \$ | - | |
| 12 | Sorrento Mesa/Qualcomm Pipelines | \$ | | \$ | - | \$ | - | \$ | - | \$ | = | |
| 13 | EDR Costs | \$ | 719,684 | \$ | 719,684 | \$ | 719,684 | \$ | 719,684 | \$ | | |
| 14 | Total CIP - inflated | \$ | 1,266,047 | \$ | 1,282,438 | \$ | 1,299,321 | \$ | 1,322,506 | \$ | 626,935 | |

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Tables 3a and 3b were added to illustrate the proposed Zone Rates for North City and South Bay.

Table 3a Recycled Water Revenue Projections Zone Rate - North City

| | Projected | Projected | Projected | Projected |
|--|--------------|--------------|--------------|--------------|
| | FY 2014 | FY 2015 | FY 2016 | FY 2017 |
| Revenue Requirements | | | | |
| O&M Costs | \$2,791,146 | \$2,832,414 | \$2,922,756 | \$3,039,723 |
| Treatment Costs | \$2,426,782 | \$2,451,050 | \$2,475,560 | \$2,574,583 |
| Existing Debt Service | \$4,965,919 | \$4,965,943 | \$5,003,558 | \$4,945,278 |
| Proposed Debt Service | \$47,873 | \$95,745 | \$95,745 | \$149,089 |
| Pay-as-you-go Capital | \$36,145 | \$39,423 | \$91,551 | \$96,189 |
| Subtotal: Capital Costs | \$5,049,936 | \$5,101,111 | \$5,190,854 | \$5,190,556 |
| Total Revenue Requirements | \$10,267,864 | \$10,384,575 | \$10,589,170 | \$10,804,861 |
| | | | | |
| Less: Revenue Offsets | | | | |
| Credits from MWD and CWA | \$2,754,702 | \$2,782,248 | \$2,560,287 | \$2,333,607 |
| Base Fees | \$619,565 | \$602,890 | \$619,874 | \$645,178 |
| Poway Contract Revenue | \$462,046 | \$471,332 | \$480,806 | \$505,038 |
| Fees from Olivenhain | \$15,941 | \$15,941 | \$15,941 | \$15,941 |
| Interest Revenue | | | | |
| Meter Installation Revenue | \$100,000 | \$105,000 | \$25,000 | \$25,000 |
| Capacity Fee Revenue | \$73,128 | \$73,128 | \$24,376 | \$24,376 |
| Subtotal Revenue Offsets | \$4,025,382 | \$4,050,539 | \$3,726,284 | \$3,549,139 |
| TOTAL NET REVENUE | | | | |
| REQUIREMENTS | \$6,242,482 | \$6,334,036 | \$6,862,887 | \$7,255,722 |
| Total Sales (HCF) | 2,048,885 | 2,069,373 | 2,090,068 | 2,110,968 |
| Calculated Recycled Water Rate, \$/HCF | \$3.047 | \$3.061 | \$3.284 | \$3.438 |
| Average 4 year rate | \$3.208 | \$3.208 | \$3.208 | \$3.208 |
| - - | | | | |

Table 3b Recycled Water Revenue Projections Zone Rate - South Bay

| | Projected FY 2014 | Projected FY 2015 | Projected FY 2016 | Projected FY 2017 |
|--|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Revenue Requirements | | · | | |
| O&M Costs | \$175,841 | \$178,167 | \$184,214 | \$191,526 |
| Tertiary Treatment Costs | \$1,606,131 | \$1,622,193 | \$1,638,415 | \$1,703,951 |
| Existing Tertiary Debt Service | \$138,300 | \$138,300 | \$138,300 | \$138,300 |
| Proposed Debt Service | \$0 | \$0 | \$0 | \$0 |
| Pay-as-you-go Capital* | \$719,684 | \$719,683 | \$719,684 | \$719,683 |
| Subtotal: Capital Costs | \$857,984 | \$857,983 | \$857,984 | \$857,983 |
| Total Revenue Requirements | \$2,639,956 | \$2,658,343 | \$2,680,612 | \$2,753,460 |
| Less: Revenue Offsets | | | | |
| Credits from MWD and CWA | \$4,012 | \$4,052 | \$4,093 | \$4,134 |
| Base Fees | \$20,252 | \$19,311 | \$19,734 | \$20,414 |
| Subtotal Revenue Offsets | \$24,265 | \$23,363 | \$23,826 | \$24,548 |
| TOTAL NET REVENUE REQUIREMENTS | \$2,615,691 | \$2,634,979 | \$2,656,786 | \$2,728,912 |
| Total Sales (HCF) Calculated Recycled Water Rate, \$/HCF Average 4 year rate | 1,955,435 \$1.338 \$1.300 | 2,014,328 \$1.309 \$1.300 | 2,083,241 \$1.276 \$1.300 | 2,141,265 \$1.275 \$1.300 |

^{*}City is installing demineralization capacity at SBWRP at a cost of \$2,878,734 cash funded



THE CITY OF SAN DIEGO

REPORT TO THE CITY COUNCIL

DATE ISSUED:

July 2, 2013

REPORT NO: 13-56

ATTENTION:

Natural Resources and Culture Committee,

Agenda of July 10, 2013

SUBJECT:

Recycled Water Pricing Study

REQUESTED ACTION:

Accept the Recycled Water Pricing Study and Study Addendum and approve a recycled water rate increase under either Alternative 1 - a Unitary rate structure or Alternative 2 - a Zone rate structure.

- 1. Alternative 1 is a Unitary rate structure which would increase the existing rate from \$0.80 per hundred cubic feet (HCF) to \$2.261 per HCF for all customers.
- 2. Alternative 2 is a Zone rate structure which would increase the rate for customers in the North City zone to \$3.208 per HCF and customers in the South Bay zone to \$1.30 per HCF.

STAFF RECOMMENDATION: Under Alternative 1, all retail customers would pay the same rate regardless of which zone they receive their recycled water from. This rate structure is the same method used for current water and wastewater ratepayers. Under Alternative 2, retail customers would pay a different rate depending on which zone they are receiving recycled water from. The rate would be based on the cost to build, operate and maintain the infrastructure associated with each zone. Because the North City zone has an extensive distribution system, its rate is higher than the South Bay zone. Either rate structure would meet the revenue requirements needed to operate the recycled water system.

SUMMARY:

BACKGROUND

The City operates two water reclamation plants, the North City Water Reclamation Plant (NCWRP) which has a capacity of 30 million gallons per day (mgd) and the South Bay Water Reclamation Plant (SBWRP) which has a capacity of 15 mgd. Associated with the water reclamation plants are the northern and southern recycled water distribution systems. The northern distribution system is comprised of 83 miles of pipeline ranging in size from 4-inch to 18-inch in diameter, 3 pump stations and 2 reservoirs. It serves the area north of Highway 52, from the coast to the City of Poway and also provides connections to the Olivenhain Municipal

Water District (OMWD). The southern distribution system is limited (less than one mile) and connects to the Otay Water District's (Otay) retail distribution system and storage tank. The City also serves the International Boundary Water Commission and Caltrans. Although the recycled water system is composed of a North City and a South Bay service area, the City has always considered it one system.

HISTORY

Since 1963, the City has treated its wastewater at the Point Loma Wastewater Treatment Plant (PLWTP). The plant is currently treating wastewater to chemically enhanced advanced primary treatment standards. In 1987, the U.S. Environmental Protection Agency (EPA) along with environmental groups sued the City for not meeting the provisions of the Clean Water Act (CWA) which requires all treatment plants to upgrade to secondary treatment standards. In 1994, the Ocean Pollution Reduction Act (OPRA) was passed which allowed the City to apply for a Section 301(h) waiver from CWA standards. In addition to applying for and receiving a waiver from the secondary treatment standards, one of the conditions of OPRA required the City to implement a water reclamation program that would create a system capacity to treat 45 mgd by 2010. The North City and South Bay Water Reclamation Plants were built to comply with the conditions of OPRA and the costs related to the treatment plants were borne by the Metro Wastewater ratepayers.

A 1995 federal court order further required the City to construct an optimized recycled water distribution system in conjunction with building the NCWRP. This distribution system, along with the distribution system in the South Bay, was funded by Water ratepayers.

The 1998 Regional Wastewater Disposal Agreement between the City and the Participating Agencies of the Metropolitan Sewerage System (Metro) stipulates that the revenue from the sale of recycled water from the NCWRP should first be used to pay for the operating and capital expenses associated with the optimized distribution system and then the operating expenses for the tertiary treatment portion of the plant, with any remaining revenues accruing to the Metro Wastewater fund. Revenue from the sale of recycled water from the SBWRP accrues to the Metro Wastewater fund.

By substituting recycled water for potable water, the City's potable water system has benefited from the expansion of the recycled water system through the creation of additional capacity, less reliance on imported water, and reduced purchases of more expensive treated water from the County Water Authority. The use of recycled water is also recognized as an important component of the City's Long-Range Water Resources Plan. Since 2001, over 350 new customers were added to the system.

REVENUE REQUIREMENTS

In order to determine the appropriate recycled water rate, the revenue requirements needed to sustain the system must first be determined. Projected revenue requirements include all operating and capital expenses of the recycled water system. Gross revenue requirements include recovery of operation and maintenance (O&M), pay-as-you-go capital (PAYGO), and debt service costs related to the construction of the recycled water distribution system. The City's policy is to fund 80 percent of the capital costs through debt funding and the balance

through PAYGO and other sources. Net revenue requirements, which are the gross revenue requirements less offsets, are revenues to be potentially derived from rates for recycled water. Examples of Revenue Offsets are:

- Incentives from the Metropolitan Water District (MWD) and the San Diego County Water Authority (SDCWA) in the amount of up to \$250 and \$200 per acre foot (AF) of recycled water sales, respectively, for all sales at NCWRP and only SDCWA incentives for retail sales at SBWRP;
- Fees of \$25 per AF from OMWD for sales in its service area because it is not a party to the Metro Wastewater Agreement. Per OMWD's contract, the \$25/AF fee only applies to sales to OMWD's initial connection and does not apply to the recycled water it sells to any customers within the city limits of San Diego;
- Revenues collected from recycled water sales to Poway based upon a negotiated contract rate;
- Capacity charges collected from new customers; and,
- Meter installation costs from retail customers.

While the use of recycled water has had its long-term benefits, the current pricing model does not recoup the actual costs for producing recycled water. Costs are currently allocated among wastewater, water and recycled water customers.

RATE DEVELOPMENT

Rate development should consider three major objectives:

- 1. Pricing should be set to ensure greater financial sufficiency more in line with the cost of providing the service;
- 2. Rates should be relatively easy to implement; and,
- 3. Rates should be based upon a fair and equitable approach so that users pay in proportion to the cost of providing the service.

With these considerations in mind, the Pricing Study and the Study Addendum made the following assumptions and considerations:

The recycled water system could be considered a unitary system such that all the costs, operating and capital should be proportionately shared by irrigation, industrial, and wholesale customers receiving recycled water from the NCWRP and SBWRP. This means that all users should share in all the costs of the recycled water system, provided that these users are within the Metro Wastewater service area. The rationale for the unitary recycled water system are:

- a. The Metro Wastewater System is a unitary system, and all wastewater users proportionately share in the costs of this system irrespective of their location, the collection system, or the proximity to the specific treatment plant into which they discharge; and
- b. The NCWRP and SBWRP plants were constructed to meet the OPRA requirements. The costs related to the construction and operation of these plants are part of the unitary Metro Wastewater System. The City received a federal construction grant for the NCWRP; and grant conditions require the City to meet certain reuse targets. Capital costs incurred for the recycled water distribution system to meet these reuse targets are therefore considered to be part of the integrated system that benefits all recycled water customers. All customers share in the costs and benefits of the system, which means that all users share in the costs.
- c. The City has entered into agreements with Poway, OMWD, and Otay. Poway has a contractual rate with the City for its recycled water. The agreements with the latter two agencies specify that the same rates charged to City customers will apply to these customers. The language of these agreements implies a unitary system, wherein all the costs of the recycled water system would be shared by all customers.
- 2. Based on input from stakeholders, the Study Addendum considered the recycled water system as two separate zones, because the northern and southern distribution systems are not physically connected to one another. Recycled water from the NCWRP cannot be distributed through the southern distribution system and recycled water from the SBWRP cannot be distributed through the northern distribution system and customers in one zone do not benefit from the infrastructure in another zone. Under this scenario, the costs associated with the North City zone would be borne by customers who benefit from that system and costs associated with the South Bay zone would be borne by customers who benefit from that system.
- 3. The true cost of producing recycled water includes the operating and capital costs of all the facilities treatment and distribution. Cash expenses already incurred are appropriately excluded from the analysis. Ongoing debt service costs for the treatment plants and the distribution system are included in the revenue requirements to determine the cost of producing recycled water.
- 4. To ensure that recycled water is marketable, the commodity rate for recycled water should be lower than the potable irrigation rate due to the fact that recycled water is used mainly for irrigation purposes. Most agencies in California charge a recycled water rate between 75 to 90 percent of the potable water rate. The City's current recycled water commodity rate is 20 percent of the current potable irrigation rate of \$4.014 per HCF.

A true cost of service would include all costs, both capital and operational and the offsetting revenue stream for the NCWRP, SBWRP, and the recycled water distribution system. However, the City is recommending a modified cost of service because the capital and operational costs of the NCWRP and SBWRP up through secondary treatment should be borne by the Metro Wastewater ratepayers. The City is required to treat wastewater and the Metro Wastewater

ratepayers therefore benefit from the operation of the NCWRP and the SWBWP and secondly the City was required to construct these plants to comply with the requirements of OPRA which allowed the wastewater system to receive a 301(h) waiver and avoid the cost of an upgrade to secondary treatment at the PLWTP. Additional tertiary treatment beyond secondary treatment standards to produce recycled water should be borne by recycled water customers. Under the modified cost of service, only the following costs are considered:

- a. The ongoing debt service costs for the tertiary capital component of the NCWRP and SBWRP,
- b. The ongoing debt service costs for the demineralization facilities at the NCWRP,
- c. The tertiary treatment operating costs at the NCWRP and the SBWRP,
- d. The ongoing debt service costs and operating cost of the optimized recycled water distribution system,
- e. Annualized capital costs for future upgrades to the tertiary process, demineralization system, and optimized recycled water distribution system.

RATE ALTERNATIVES

Two alternatives were calculated under the modified cost of service.

Alternative 1 - Unitary rate: This structure results in a recommended recycled water rate of \$2.261 per HCF. This rate is approximately 56 percent of the current potable irrigation rate. The rate is designed to provide a good balance between incentives for recycled water use and cost of service.

Alternative 2 – Zone rate: This structure results in a recommended recycled water rate of \$3.208 per HCF for the North City zone and a rate of \$1.30 per HCF for the South Bay zone.

The revenue requirements for operation of the recycled water system are met by either rate structure. The benefits of the Unitary rate are that all retail customers pay the same rate and are treated equally. This is consistent with the Unitary rate model used for water and wastewater ratepayers; they pay the same rate per HCF whether they are located near a treatment plant or farther away from a treatment plant. The benefit of the Zone rate model is that it more closely aligns the rate charged to the costs of operating the facilities and distribution system providing the service.

As costs and sales can be projected with reasonable certainty for only a few years, the Department will review the recycled water rate periodically with available updated information.

A comparison of recycled water rates in the region shows that even with the proposed rate increase, the City rate will generally be lower than the City of Escondido at \$2.72 per HCF, Otay at \$3.31 per HCF and Padre Dam Municipal Water District at \$5.02 per HCF.

The recycled water base fees or meter charges have not been revised for several years. Base fees include costs of customer service, billing, meter maintenance and a portion of the costs to provide capacity. The cost allocation process provides a reasonable basis to calculate the base fees and the calculated base fees are reasonably close to those for potable service. The differences in the larger meters result from use of the latest capacities of the larger meters shown

in the AWWA M22 Manual Sizing Water Service Lines and Meters. The proposed monthly meter charges and rates are shown on Table 7-4 – Recycled Water Monthly Meter Charges, of the Recycled Water Pricing Study report attached.

FISCAL CONSIDERATIONS:

The recycled water system has been running at a substantial deficit since its inception, resulting in recycled water production and distribution costs being allocated amongst all recycled water, potable water and wastewater customers. The annual revenue requirement under either Rate Alternative 1 or 2, based on the recommended modified cost of service approach is approximately \$13.2 million, while total revenue at the existing rate is producing around \$7 million annually. These revenues would be considered a "revenue offset" to both the Water and Wastewater revenue requirement, thus providing downward pressure on future potable and wastewater rates.

Additionally, the Park and Recreation Department is one of the largest customers of recycled water. At the Unitary rate of \$2.261 per HCF, their recycled water costs would increase yearly from approximately \$266,000 (based on FY12 usage) to approximately \$752,000, and at the Zone rate of \$3.208 per HCF, costs would increase yearly to approximately \$1,066,000.

PREVIOUS COUNCIL and/or COMMITTEE ACTION:

In 2001 (Manager's Report No. 01-071), reclaimed water rates were reduced to .080/HCF as a means of increasing the customer base and overall demand.

COMMUNITY PARTICIPATION AND PUBLIC OUTREACH EFFORTS:

This issue was presented to the Independent Rates Oversight Committee (IROC) on June 24, 2013. IROC received public comment and concerns were raised about the Unitary rate structure. As a result of public input an Addendum to the Study was produced which analyzed a Zone rate structure.

KEY STAKEHOLDERS AND PROJECTED IMPACTS:

Water, Wastewater and Recycled Water ratepayers. An increase in the recycled water rate will ensure that customers benefiting from the recycled water system pay their proportionate share.

Ann Sasaki

Assistant Public Utilities Director

Business Support Branch

Attachments: Recycled Water Pricing Study Report

Addendum to Recycled Water Pricing Study Report

Recycled Water Pricing Study Presentation to IROC June 24, 2013

City of San Diego Public Utilities Department Recycled Water Pricing Study

Purpose

The City engaged Raftelis Financial Consultants to conduct a recycled water pricing study to identify the cost of providing recycled water services and to develop a financial plan considering alternatives for recovering the costs incurred. The City currently sells recycled water at a commodity rate of \$0.80 per hundred cubic feet (HCF). The City began selling recycled water in October 1997 at \$1.34 per HCF and reduced the rate to its current level in July 2001 to encourage recycled water use and reduce the demand on imported water. The current rate does not recoup the cost of actually providing recycled water.

Current Recycled Water System

The City operates two water reclamation plants, the North City Water Reclamation Plant (NCWRP) which has a capacity of 30 million gallons per day (mgd) and the South Bay Water Reclamation Plant (SBWRP) which has a capacity of 15 mgd. Associated with the water reclamation plants are the northern and southern recycled water distribution systems. The northern distribution system is comprised of 83 miles of pipeline ranging in size from 4-inch to 18-inch in diameter, 3 pump stations and 2 reservoirs. It serves the area north of Highway 52, from the coast to the City of Poway and also provides connections to the Olivenhain Municipal Water District (OMWD). The southern distribution system is limited (less than one mile) and connects to the Otay Water District's (Otay) retail distribution system and storage tank. The City also serves the International Boundary Water Commission and Caltrans. Although the recycled water system is composed of a North City and a South Bay service area, the City considers it one system.

The current system has approximately 570 retail connections serving mostly irrigation customers, a few industrial customers, e.g., cooling towers, and four wholesale connections, two to the OMWD, and one each to Poway and Otay¹. Because the majority of the use is for irrigation, the production of recycled water fluctuates significantly with the seasons. For example, in August, 2012, the combined output of the reclamation plants exceeded 18 mgd while during the winter months, production dropped to 4 to 5 mgd.

Regulatory and Interagency Requirements

In addition to the water reclamation plants, the City also operates the Point Loma Wastewater Treatment Plant (PLWTP). The plant is currently treating wastewater to chemically enhanced advanced primary treatment standards. In 1987, the U.S. Environmental Protection Agency (EPA) along with environmental groups sued the City for not meeting the provisions of the Clean Water Act (CWA) which requires all treatment plants to upgrade to secondary treatment standards. In 1994, the Ocean Pollution Reduction Act (OPRA) was passed which allowed the City to apply for a Section 301(h) waiver from CWA standards. In addition to applying for and receiving a waiver from the secondary treatment standards, one of the conditions of OPRA required the City to implement a water reclamation program

One of the connections to OMWD is considered a retail connection for which they paid regular capacity fees. OMWD paid a fee for a twenty year capacity reservation on their initial wholesale connection, plus they pay a \$25/acre-foot surcharge, because they are not a member of the Metro Wastewater Joint Powers Authority. Poway did not pay either a standard capacity fee, nor a capacity reservation fee, resulting in them paying a "Contract Rate" different from all other customers that adjusts yearly based on the local Consumer Price Index. Otay paid a capacity reservation fee and therefore is contracted, like OMWD, to pay the same Council approved rates as all other customers.

that would create a system capacity to treat 45 mgd by 2010. The North City and South Bay Water Reclamation Plants were built to comply with the conditions of OPRA and the costs related to the treatment plants were borne by the Metro Wastewater ratepayers.

A 1995 federal court order further required the City to construct an optimized recycled water distribution system in conjunction with building the NCWRP. This distribution system along with the distribution system in the South Bay was funded by water ratepayers.

The 1998 Regional Wastewater Disposal Agreement between the City and the Participating Agencies of the Metropolitan Sewerage System (Metro) stipulates that the revenue from the sale of recycled water from the NCWRP should first be used to pay for the operating and capital expenses associated with the distribution system and then the operating expenses for the tertiary treatment portion of the plant, with any remaining revenues accruing to the Metro Wastewater fund. Revenue from the sale of recycled water from the SBWRP, net of operating and capital expenses accrues to the Metro Wastewater fund.

Recycled Water Pricing

As previously stated, the current commodity rate for recycled water of \$0.80 per HCF was set in 2001 to encourage recycled water use and reduce demand on the supply of imported water. Since that time, over 350 new customers were added to the system.

By substituting recycled water for potable water, the City's potable water system has benefited from the expansion of the recycled water system through the creation of additional capacity, less reliance on imported water, and reduced purchases of more expensive treated water from the County Water Authority. The use of recycled water is also recognized as an important component of the City's long range water resources plan.

While the use of recycled water has had its long term benefits, the current pricing model does not recoup the actual costs for producing recycled water. Costs are currently allocated among wastewater, water and recycled water customers.

The first step in developing a recycled water pricing structure is to identify pricing objectives. The major objectives are:

- Financial Sufficiency The recycled water program should be able to supply its own cash needs through revenue collected from its own fees and charges.
- Fairness and Equitability All users should pay in proportion to the demands that they place on the system.
- Simplicity The rate should be simple and easy to implement.
- Legality and Adherence to Interagency Agreements The City has negotiated wholesale agreements that cover rates and capacity.
- Marketability Pricing should be less than potable water to encourage usage.
- Customer Impact Pricing must be cognizant of the impacts of higher rates on customers

Revenue Requirements

In order to determine an appropriate rate the revenue requirements needed to sustain the system must first be determined. Projected revenue requirements include all operating and capital expenses of the recycled water system. Gross revenue requirements include recovery of operation and maintenance (O&M), payas-you-go capital (PAYGO), and debt service costs related to the construction of the recycled water distribution system. The City's policy is to fund 80 percent of the capital costs through debt funding and

the balance through PAYGO and other sources. Net revenue requirements, which are the gross revenue requirements less offsets, are revenues to be potentially derived from rates for recycled water. Examples of Revenue Offsets are:

- Incentives from the Metropolitan Water District (MWD) and the San Diego County Water Authority (SDCWA) in the amount of up to \$250 and \$200 per acre foot (AF) of recycled water sales, respectively, for all sales at NCWRP and only SDCWA incentives for retail sales at SBWRP;
- Fees of \$25 per AF from OMWD for sales in its service area because it is not a party to the Metro Wastewater Agreement. The \$25 per AF fee, per OMWD's contract, only applies to sales to OMWD's initial connection and does not apply to the recycled water it sells to any customers within the city limits of San Diego;
- Revenues collected from recycled water sales to Poway based upon a negotiated contract rate;
- Capacity charges collected from new customers; and,
- Meter installation costs from retail customers.

Rate Development

Rate development should consider three major objectives:

- 1. Pricing should be set to ensure greater financial sufficiency more in line with the cost of providing the service;
- 2. Rates should be relatively easy to implement; and,
- 3. Rates should be based upon a fair and equitable approach so that users pay in proportion to the cost of providing the service.

With these considerations in mind the pricing study made the following recommendations:

- 1. The recycled water system should be considered a unitary system such that all the costs, operating and capital, should be proportionately shared by irrigation, industrial, and wholesale customers receiving recycled water from the NCWRP and SBWRP. This means that all users should share in all the costs of the recycled water system, provided that these users are within the Metro Wastewater service area. The rationale for the unitary recycled water system are:
 - a. The Metro Wastewater System is a unitary system, and all wastewater users proportionately share in the costs of this system irrespective of their location, the collection system, or the proximity to the specific treatment plant into which they discharge; and
 - b. The NCWRP and SBWRP plants were constructed to meet the OPRA requirements. The costs related to the construction and operation of these plants are part of the unitary Metro System. The City received a federal construction grant for the NCWRP; and grant conditions require the City to meet certain reuse targets. Capital costs incurred for the recycled water distribution system to meet these reuse targets are therefore considered to be part of the integrated system that benefits all recycled water customers. All customers share in the costs and benefits of the system, which means that all users share in the costs.
- 2. The true cost of producing recycled water includes the operating and capital costs of all the facilities treatment and distribution. Cash expenses already incurred are appropriately excluded from the analysis. Ongoing debt service costs for the treatment plants and distribution system are included in the revenue requirements to determine the cost of producing recycled water.

- 3. The City has entered into agreements with Poway, OMWD, and Otay. Poway has a contractual rate with the City for its recycled water. The agreements with the latter two agencies specify that the same rates charged to City customers will apply to these customers. The language of these agreements implies a unitary system, wherein all the costs of the recycled water system would be shared by all customers.
- 4. To ensure that recycled water is marketable, the commodity rate for recycled water should be lower than the potable irrigation rate due to the fact that recycled water is used mainly for irrigation purposes. Most agencies in California charge a recycled water rate between 75 to 90 percent of the potable water rate. The City's current recycled water commodity rate is 20 percent of the current potable irrigation rate of \$4.014 per HCF.
- 5. The true cost of service includes all capital and operational costs of the NCWRP, SBWRP, and the recycled water distribution system. The true cost of service rate far exceeds the potable irrigation rate and therefore it is recommended that the City use a modified cost of service, which considers only the capital costs of the demineralization facilities at the NCWRP, the tertiary treatment operating costs at NCWRP and SBWRP, and distribution system capital and operating costs. Implicit in this modified cost analysis is the understanding that Metro Wastewater customers will bear the capital and operating costs related to the primary and secondary facilities as well as the tertiary capital costs at NCWRP and SBWRP. The modified cost of service analysis results in a recommended recycled water rate of \$2.241 per HCF for the next four years. This rate is approximately 56 percent of the current potable irrigation rate. It should be noted that the recommended rate is not the true cost of service rate. The recommended rate is designed to provide a good balance between incentives for recycled water use and cost of service. As costs and sales can be projected with reasonable certainty for only a few years, the Department will review the recycled water rate periodically with available updated information.

A comparison of recycled water rates in the region shows that even with the proposed rate increase, the City rate will be lower than the City of Escondido at \$2.72 per HCF, Otay at \$3.31 per HCF and Padre Dam Municipal Water District at \$5.02 per HCF.

6. The recycled water base fees or meter charges have not been revised for several years. Base fees include costs of customer service, billing, meter maintenance and a portion of the costs to provide capacity. The cost allocation process provides a reasonable basis to calculate the base fees and the calculated base fees are reasonably close to those for potable service. The differences in the larger meters result from use of the latest capacities of the larger meters shown in the AWWA M22 Manual Sizing Water Service Lines and Meters. The proposed monthly meter charges and rates are shown in Table 1.

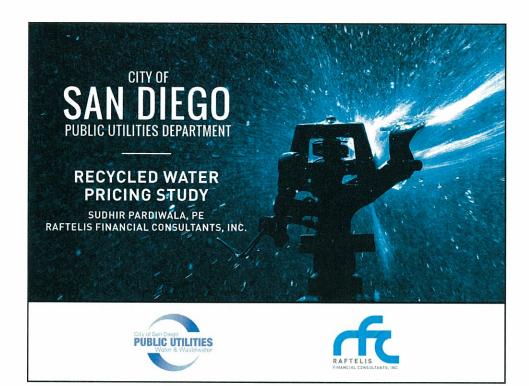
Table 1 Recommended Recycled Water Rates

| Monthly Base Fee | | | Proposed | Proposed | Proposed | Proposed |
|------------------------------|----------|----------|----------|----------|----------|----------|
| Meter Size | | Existing | 1/1/2014 | 1/1/2015 | 1/1/2016 | 1/1/2017 |
| 1" | | \$8.63 | \$23.69 | \$24.04 | \$24.73 | \$25.72 |
| 1-1/2" | | 43.27 | 42.91 | 43.55 | 44.80 | 46.59 |
| 2" | | 65.96 | 65.98 | 66.96 | 68.89 | 71.65 |
| 3" | | 246.93 | 139.03 | 141.10 | 145.16 | 150.97 |
| 4" | | 411.53 | 246.67 | 250.34 | 257.55 | 267.85 |
| 6" | | 925.93 | 542.71 | 550.79 | 566.64 | 589.31 |
| 8" | | 1234.59 | 927.17 | 940.97 | 968.05 | 1006.77 |
| 10" | | 1646.12 | 1465.41 | 1487.22 | 1530.03 | 1591.23 |
| Uniform Commodity Rate | (\$/hcf) | 0.80 | 2.241 | 2.241 | 2.241 | 2.241 |

Financial Impact

The recycled water system has been running at a substantial deficit since its inception, resulting in recycled water production and distribution costs being allocated amongst all recycled water, potable water and sewer customers. The annual revenue requirement, based on the recommended modified cost of service approach, is approximately \$12.5 million, while total revenue at the existing rates is producing around \$7 million annually.

Of the \$7 million currently collected, approximately \$1.5 million accrues to the Metro Wastewater fund. If the new rates become effective, the revenue collected will become substantially equal to the revenue requirement of \$12.5 million, \$4.5 million of which will accrue to the Metro Wastewater fund for sales from the SBWRP. These revenues would be considered a "revenue offset" to both the Water and Wastewater revenue requirement, thus providing downward pressure on future potable and wastewater rates. It should be noted that at these rates, the Water Fund would still not completely recover its costs, but would be substantially closer to doing so.



Historical Context

- > Clean Water Act 1972 requires secondary treatment
- > 1987 Lawsuit by EPA and Others
- > The Ocean Pollution Reduction Act of 1994
 - Allowed City to Reapply for Waiver, which was granted
 - City must build 45 MGD recycled water plant capacity
- > A 1995 Federal Court Order to Build an Optimized Distribution System





Current Recycled System

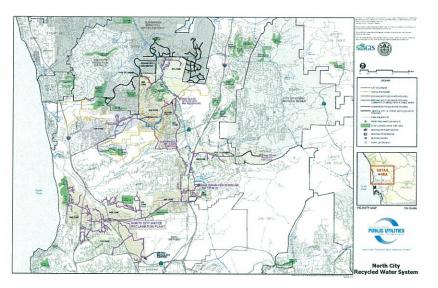
- North City Water Reclamation Plant (NCWRP)
- South Bay Water Reclamation Plant (SBWRP)
- Associated Distribution System
- Approximately 570 connections including 3 wholesale customers
- 3 Wholesale customers have agreements
 - Otay pays the same rate as City customers
 - Olivenhain pays \$25/AF above City's rate
 - Poway pays rates updated annually for inflation



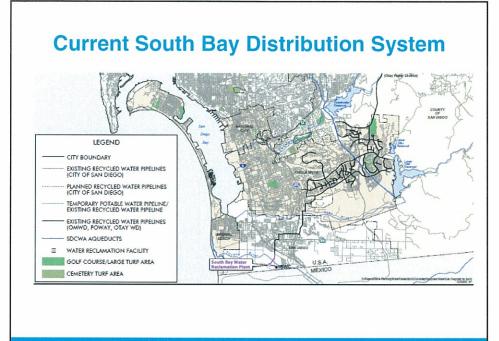


RECYCLED WATER PRICING STUDY

Current North City Distribution System



RECYCLED WATER PRICING STUDY



RECYCLED WATER PRICING STUDY

4

Observations

- > Current rate is \$0.80 per hundred cubic feet (HCF)
- > City's potable water system has benefited from the expansion of the recycled water system
- > Recycled water is part of the City's long range water resources plan
- > Cost apportioned to water, wastewater and recycled water users





Modified Cost of Service

- > Consider only costs related to the production and distribution of recycled water
 - O&M expenses for the tertiary (recycled water) component of the wastewater treatment system
 - Future capital improvements
 - Debt Service
- > Reduce revenue requirements using offsetting revenues
 - MWD/CWA credits
 - Base Fees
- PUBLIC UTILITIES Other revenues

- Poway contract revenue



RECYCLED WATER PRICING STUDY

Recommendations

- > The commodity rate for recycled water should be lower than the potable water rate to incentivize sales
 - Alternative 1 Unitary rate \$2.261/HCF, represents 56% of the potable irrigation rate
 - Alternative 2 Zone rate \$3.208/HCF North City, \$1.30/HCF South Bay





Recommendations

Current rate is \$0.80/HCF

| Alternative | Proposed Commodity Rate (\$/HCF) | Proposed 1/1/2014 | Proposed 1/1/2015 | Proposed 1/1/2016 | Proposed 1/1/2017 |
|-------------|--|----------------------|----------------------|----------------------|----------------------|
| 1 | Unitary | \$2.261 | \$2.261 | \$2.261 | \$2.261 |
| 2 | Zone - North City | \$3.208 | \$3.208 | \$3.208 | \$3.208 |
| 2 | Zone - South Bay | \$1.300 | \$1.300 | \$1.300 | \$1.300 |

- Update the recycled water base fee includes costs of customer service, billing, meter maintenance and a portion to provide capacity
 - Based on meter size
 - Capacity ratio as defined in the AWWA M22 Manual Sizing Water Service Lines and Meters





RECYCLED WATER PRICING STUDY

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Questions?





RECYCLED WATER PRICING STUDY

Backup Slides





RECYCLED WATER PRICING STUDY

1

Modified Cost of Service Rate Calculation (Unitary system)

| | Projected Projected FY 2014 FY 2015 | | | Projected FY 2016 | Projected FY 2017 | | | | |
|-------------------------------|--|------------|--------------|----------------------|----------------------|------------|-------------|-----------|--|
| Revenue Requirements | | | | | | | | | |
| O&M Costs | \$ | 2,966,987 | \$ | 3,010,580 | \$ | 3,106,970 | \$ | 3,231,249 | |
| Treatment Costs | \$ | 4,032,913 | \$ | 4,073,242 | \$ | 4,113,975 | \$ | 4,278,534 | |
| Existing Debt Service | \$ | 5,104,219 | \$ | 5,104,243 | \$ | 5,141,858 | Ś | 5,083,578 | |
| Proposed Debt Service | \$ | 47,873 | \$ | 95,745 | \$ | 95,745 | \$ | 149,089 | |
| Pay-as-you-go Capital | \$ | 755,828 | \$ | 759,106 | \$ | 811,235 | \$ | 815,872 | |
| Subtotal: Capital Costs | \$ | 5,907,920 | \$ | 5,959,094 | \$ | 6,048,838 | \$ | 6,048,539 | |
| Total Revenue Requirements | | 12,907,820 | \$13,042,917 | | \$ | 13,269,782 | \$13,558,32 | | |
| .ess: Revenue Offsets | | | | | | | | | |
| Credits from MWD and CWA | \$ | 2,758,715 | \$ | 2,786,300 | Ś | 2,564,380 | \$ | 2,337,740 | |
| Base Fees | \$ | 639,818 | \$ | 622,201 | Ś | 639,607 | Ś | 665,592 | |
| Poway Contract Revenue | \$ | 462,046 | \$ | 471,332 | Ś | 480,806 | \$ | 505,038 | |
| Fees from Olivenhain | \$ | 15,941 | \$ | 15,941 | \$ | 15,941 | \$ | 15,94 | |
| Interest Revenue | \$ | | \$ | | \$ | - | \$ | - | |
| Meter Installation Revenue | \$ | 100,000 | \$ | 105,000 | \$ | 25,000 | \$ | 25,000 | |
| Capacity Fee Revenue | \$ | 73,128 | \$ | 73,128 | \$ | 24,376 | \$ | 24,376 | |
| ubtotal Revenue Offsets | \$ | 4,049,647 | \$ | 4,073,902 | \$ | 3,750,110 | \$ | 3,573,687 | |
| OTAL NET REVENUE REQUIREMENTS | Ś | 8,858,172 | 5 | 8,969,014 | \$ | 9,519,672 | \$ | 9,984,635 | |







RECYCLED WATER PRICING STUDY

Modified Cost of Service Rate Calculation (Zone System) NCWRP

| | Budgeted | 3 | Projected | - 8 | Projected | Projected | |
|--|------------------|----|------------|-----|------------|-----------|------------|
| | FY 2014 | | FY 2015 | | FY 2016 | | FY 2017 |
| Revenue Requirements | | | | | | | |
| O&M Costs | \$ 2,791,146 | \$ | 2,832,414 | \$ | 2,922,756 | \$ | 3,039,723 |
| Treatment Costs | \$ 2,426,782 | \$ | 2,451,050 | \$ | 2,475,560 | \$ | 2,574,583 |
| Existing Debt Service | \$ 4,965,919 | \$ | 4,965,943 | \$ | 5,003,558 | \$ | 4,945,278 |
| Proposed Debt Service | \$ 47,873 | \$ | 95,745 | \$ | 95,745 | \$ | 149,089 |
| Pay-as-you-go Capital | \$ 36,145 | \$ | 39,423 | \$ | 91,551 | \$ | 96,189 |
| Subtotal: Capital Costs | \$ 5,049,936 | \$ | 5,101,111 | \$ | 5,190,854 | \$ | 5,190,556 |
| Total Revenue Requirements | \$ 10,267,864 | \$ | 10,384,575 | \$ | 10,589,170 | \$ | 10,804,861 |
| Less: Revenue Offsets | | | | | | | |
| Credits from MWD and CWA | \$ 2,754,702 | \$ | 2,782,248 | \$ | 2,560,287 | \$ | 2,333,607 |
| Base Fees | \$ 619,565 | \$ | 602,890 | \$ | 619,874 | \$ | 645,178 |
| Poway Contract Revenue | \$ 462,046 | \$ | 471,332 | \$ | 480,806 | \$ | 505,038 |
| Fees from Olivenhain | \$ 15,941 | \$ | 15,941 | \$ | 15,941 | \$ | 15,943 |
| Interest Revenue | | | 85 | | 98 377 | ò | |
| Meter Installation Revenue | \$ 100,000 | \$ | 105,000 | \$ | 25,000 | \$ | 25,000 |
| Capacity Fee Revenue | \$ 73,128 | \$ | 73,128 | \$ | 24,376 | \$ | 24,376 |
| Subtotal Revenue Offsets | \$ 4,025,382 | \$ | 4,050,539 | \$ | 3,726,284 | \$ | 3,549,139 |
| TOTAL NET REVENUE REQUIREMENTS | \$ 6,242,482 | \$ | 6,334,036 | \$ | 6,862,887 | \$ | 7,255,722 |
| Total Sales (HCF) | 2,048,885 | | 2,069,373 | | 2,090,068 | | 2,110,968 |
| Calculated Recycled Water Rate, \$/HCF | \$ 3.05 | \$ | 3.06 | \$ | 3.28 | \$ | 3.44 |
| | | | | | | | |

3.208 \$

3.208 \$

3.208

RECYCLED WATER PRICING STUDY

PUBLIC UTILITIES

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Modified Cost of Service Rate Calculation (Zone System) SBWRP

| | | - | Budgeted | Projected | Projected | | Projected | |
|--------------------|--|----|-----------|-----------------|-----------|-----------|-----------|-----------|
| | | | FY 2014 | FY 2015 | | FY 2016 | | FY 2017 |
| | Revenue Requirements | | | | | | | |
| | O&M Costs | \$ | 175,841 | \$ 178,167 | \$ | 184,214 | \$ | 191,526 |
| | Tertiary Treatment Costs | \$ | 1,606,131 | \$ 1,622,193 | \$ | 1,638,415 | \$ | 1,703,951 |
| | Existing Tertiary Debt Service | \$ | 138,300 | \$ 138,300 | \$ | 138,300 | \$ | 138,300 |
| | Proposed Debt Service | \$ | - | \$ - | \$ | - | \$ | - |
| | Pay-as-you-go Capital* | \$ | 719,684 | \$ 719,683 | \$ | 719,684 | \$ | 719,683 |
| | Subtotal: Capital Costs | \$ | 857,984 | \$ 857,983 | \$ | 857,984 | \$ | 857,983 |
| | Total Revenue Requirements | \$ | 2,639,956 | \$ 2,658,343 | \$ | 2,680,612 | \$ | 2,753,460 |
| | | | | | | | | |
| | Less: Revenue Offsets | | | | | | | |
| | Credits from MWD and CWA | \$ | 4,012 | \$ 4,052 | \$ | 4,093 | \$ | 4,134 |
| | Base Fees | \$ | 20,252 | \$ 19,311 | \$ | 19,734 | \$ | 20,414 |
| | Subtotal Revenue Offsets | \$ | 24,265 | \$ 23,363 | \$ | 23,826 | \$ | 24,548 |
| | TOTAL NET REVENUE REQUIREMENTS | \$ | 2,615,691 | \$ 2,634,979 | \$ | 2,656,786 | \$ | 2,728,912 |
| | Total Sales (HCF) | | 1,955,435 | 2,014,328 | | 2,083,241 | | 2,141,265 |
| City or Sen Classo | Calculated Recycled Water Rate, \$/HCF | \$ | 1.34 | \$ 1.31 | \$ | 1.28 | \$ | 1.28 |
| PUBLIC UTILITIES | Average 4 year rate | Ś | 1.300 | \$ 1.300 | \$ | 1.300 | Ś | 1.300 |

*City is installing demineralization capacity at SBWRP at a cost of \$2,878,734 cash funded

RECYCLED WATER PRICING STUDY