

DATE ISSUED: July 11, 2002

REPORT NO. 02-162

ATTENTION: Natural Resources and Culture Committee
Agenda of July 17, 2002

SUBJECT: Reclaimed Water Business Plan

REFERENCES: City Council Policy 400-9
San Diego Municipal Code Section 64.0801 et. seq.
City Manager's Report No. 00-95 issued May 3, 2000
City Manager's Report No. 01-071 issued April 13, 2001
Memorandum to Mayor and Council dated June 19, 2001

SUMMARY

Issue - What actions shall the San Diego City Council take regarding implementation of the Reclaimed Water Business Plan?

Recommendations - 1) In conjunction with the Public Utilities Advisory Commission, develop criteria and procedures to enforce the Reclaimed Water Mandatory Reuse Ordinance, San Diego Municipal Code Section 64.0801 et. seq. of Division 8: Water Reclamation and Ocean Monitoring, of Article 4: Sewers; 2) Modify the Land Development Code to allow for reclaimed water to become part of the Land Development process; 3) Approve the Reclaimed Water Project Review Process for implementing the Reclaimed Water Business Plan; 4) Approve a Commercial Tenant Improvement Plan Review Fee for reclaimed water plan checks.

Fiscal Impact - A plan check fee will be established for Commercial Tenant Improvement Reclaimed Water plan review and approval. The over-the-counter plan check fee is required to be \$400 to fully fund the activities of both the Water and Development Services Departments. The Fee for Service Program will require a deposit of \$2,400 to charge against actual costs incurred.

BACKGROUND

Reclaimed Water Ordinance

On July 24, 1989, the City Council adopted Ordinance 0-17327 N.S. adding to the Municipal Code Article 4, Division 8, Section 64.0801 et. seq. This reclaimed water section states that reclaiming wastewater for beneficial reuse is in the best interest of the City. The Ordinance promotes the use of reclaimed water by establishing the following policy:

"It is the policy of the City that reclaimed water shall be used

.within its jurisdiction wherever feasible, and consistent with legal requirements, preservation of the public health, safety and welfare, and the environment.”

The City Manager is authorized to administer, implement and enforce the provisions of the Ordinance, commonly referred to as the Mandatory Reuse Ordinance. An updated Reclaimed Water Master Plan is to be prepared every five years to define, encourage and develop the use of reclaimed water within the City's boundaries. Pursuant to this Ordinance and California Water Code Section 13551, no person or public agency shall use water from any potable source for irrigation, or other uses, where the use of reclaimed water is suitable and when it is available.

Through this Ordinance, the City Manager was authorized to make preliminary determinations as to which existing potable water customers shall be converted to the use of reclaimed water. Additionally, the City Manager was directed to condition tentative maps, subdivision maps, land use permits, or any other development project as defined by Government Code Section 65928 for the use of reclaimed water due to its location within an existing or proposed reclaimed water service area. The City Manager is also authorized to require an applicant for a building permit to include reclaimed water facilities in the plans as a condition for approval.

Beneficial Reuse Study

The 1997 *Strategic Plan for Water Supply* identified that 10% of the City's drinking water supply (21,000 AFY) would come from repurified water produced at the North City Water Reclamation Plant. On May 18, 1999, via Resolution No. R-291621, the City Council directed staff to investigate alternatives to the Water Repurification project and authorized \$250,000 to prepare a Beneficial Reuse Study. The Beneficial Reuse Study (BRS) was completed in December 2000 and identified the most cost-effective way to use reclaimed water in non-potable applications. The plans developed included facilities to deliver water from the three City reclamation plants.

The San Pasqual Reclamation Plant is rated at 1 million gallons per day (mgd), the North City Plant is rated at 30 mgd, and the South Bay Plant is currently capable of producing 7 mgd with an ultimate capacity of 15 mgd. The BRS developed a plan to meet the EPA grant goals for North City of beneficially reusing 25% of the treated flows by 2003 (6,800 AFY/or 6 mgd) and reusing 50% of the treated flows by 2010 (13,600 AFY/or 12 mgd). The BRS became the updated Reclaimed Water Master Plan.

Manager's Report No. 00-95, issued on May 3, 2000, presented a conceptual process for the City to follow to create a viable and active reclaimed water program. The recommendations contained in the Manager's Report were adopted by City Council on July 17, 2000, via Resolution No. R-293457. This resolution directed staff to prepare a long-term capital program based on the findings of the updated Reclaimed Water Master Plan. It further directed the Water Department to negotiate for the sale of reclaimed water to large wholesale and retail customers, including the Otay Water District, Olivenhain Municipal Water District, MCAS Miramar, San Diego City Schools and CALTRANS. This action also directed the City Manager to develop a process between the Water and Development Services Departments for the incorporation of reclaimed water facilities into applicants' requests for ministerial permits and map approvals. Lastly, this resolution approved the methodology by which a cost of service study was to be prepared which led to a reclaimed water rate analysis.

City staff have been conditioning tentative maps to incorporate reclaimed water facilities in the North City Future Urbanized Areas (NCFUA). In addition, the City has entered into several participation agreements with developers in the NCFUA who have approved tentative maps. Participation agreements have been executed with Western Pacific Housing for pipelines in Camino Ruiz (Subarea IV), Greystone Homes for a reclaimed pipeline along Torrey Meadows Drive (Subarea IV), and Taylor Woodrow Homes/SantaLuz for pipelines in Black Mountain Ranch (Subarea II). These new facilities expand the existing reclaimed water distribution system and will assist the City in meeting the EPA grant goals for the beneficial reuse of reclaimed water from the North City Plant. Construction costs are 15- 20% lower than if they were constructed through a separate City contract process because they are being installed along with other utilities before the street is completed. Additionally, traffic impacts will be avoided because all underground utility improvements will be completed prior to road surfacing.

Reclaimed Water Rates

The City's strategic reclaimed water objective is to increase the number of customers using reclaimed rather than potable water. This will enable the City to beneficially utilize reclaimed water plant production capacity to the greatest extent possible and provide a reliable alternative water source to non-potable customers. The most sensitive variable to increase reclaimed water sales is the price of the commodity. Two years ago, the Water Department prepared a reclaimed water rate case that analyzed reclaimed water revenues and expenses in order to provide a basis for maximizing sales while fully offsetting costs. All past and future capital and operating expenditures were factored into the study. Additionally, reclaimed water demands were estimated and based on current sales and data collected from the Beneficial Reuse Study. The rate case study concluded that the FY 2002 reclaimed water rate could be established at \$350 AF. By comparison, the potable rate at that time was \$646 AF.

On June 19, 2001, the City Council, via Resolution No. R-295034 (Manager's Report No. 01-071) approved the reduction of reclaimed water rates from \$580/Acre-Foot (AF) or \$1.34/Hundred Cubic Feet (HCF) to \$350/AF or \$0.80/HCF. This price reduction has had the intended effect of significantly increasing customer interest in reclaimed water, and will enable the City to beneficially utilize reclaimed water plant production capacity to the greatest extent possible. The interest generated by the cost reduction will ensure that reclaimed water distribution facilities that are planned or under construction will serve the most customers possible.

DISCUSSION

Reclaimed Water Business Plan

This report will detail an on-going strategy as well as identify an internal City process to implement the Reclaimed Water Business Plan in a customer friendly and efficient manner. The implementation strategy consists of developing an economic model and criteria to enforce the Mandatory Reuse Ordinance; discussion of modifying the Land Development Code to institutionalize reclaimed water as a part of the land development process; an overview of the City reclaimed water review process that customers will follow; and a fee to cover the costs of reclaimed water plan checks.

The reclaimed water strategy that the Water Department is pursuing, as detailed in the BRS, is to connect large, single-meter customers to the system in order to develop the most cost effective

non-potable reclaimed water distribution system. The reclaimed water projects in the Department's approved Capital Improvement Program (CIP) are estimated to cost approximately \$25 million over the next five fiscal years (FY 03-07) to extend and expand the reclaimed water distribution system. The CIP will construct new, large diameter transmission pipelines to the largest reclaimed water customers within the service area zones of the three reclamation plants. These customers include new facilities and golf courses in the NCFUA, as well as existing facilities in Rancho Bernardo and adjacent to the South Bay plant. Included in the CIP is an annual allocation budget that will allow infilling along these large transmission mains to connect the smaller customers to the system. In this way, the City can cost-effectively market its reclaimed water first to large customers and, when the major pipelines are in place, market to smaller usage customers.

Selling reclaimed water to other agencies at a single point of connection is of benefit to the City by maximizing the number of reclaimed customers per plant. Discussions are in progress with the Otay Water District and Olivenhain Municipal Water District to deliver water at the respective service area boundaries between them and the City. The City of Poway has been purchasing reclaimed water from the City San Diego since 1998. Implementation of the recommendations contained in the Reclaimed Water Master Plan will enable the City to meet the EPA North City WRP construction grant conditions.

Enforcing the Mandatory Reuse Ordinance

Provisions within the Mandatory Reuse Ordinance authorize the City Manager to make a determination as to which existing potable water customers should convert to use reclaimed water. The Ordinance specifies that the City is responsible for determining which potable water customers within existing and planned reclaimed water service areas are the most logical to switch to reclaimed water. Potential usages to convert from potable to reclaimed water include, but are not limited to: landscape irrigation including golf courses and greenbelts; commercial office buildings; industrial applications; water features, etc.

To enforce this section of the Mandatory Reuse Ordinance, a procedure needs to be developed to identify customers based upon their proximity to reclaimed pipelines, and criteria established for enforcement. These criteria may consist of evaluating potable usage and establishing a threshold for water usage. Customers meeting the minimum usage amount would be required to retrofit to use reclaimed, rather than potable water. Alternatively, it may be prudent to consider creating an economic model that determines the return on the retrofit investment over a specified number of years.

Full implementation of this section of the Ordinance is complicated and potentially controversial. The City Council may wish to seek feedback from affected customers prior to moving forward with requiring a site conversion. Referring this to the Public Utilities Advisory Commission to oversee and advise the City Council is recommended.

Reclaimed Water Plan Review

All new developments within planned or existing reclaimed water service zones are being conditioned for reclaimed water infrastructure. Developers are preparing reclaimed water studies similar to the water and wastewater studies they also prepare. These planning studies identify facilities as well as demands. Water Department staff are reviewing all developer reclaimed facility plans, plan checking individual facility improvement drawings, and reviewing and

commenting on all subdivision reclaimed water studies.

The Water Department is connected to the Development Services Department's (DSD) automated project tracking system to facilitate the routing of review comments to DSD's project manager. The Water Department has recently provided a GIS layer of reclaimed water service zones to DSD that its staff have begun to use to identify projects with reclaimed water potential. Once projects are identified they are routed to the Water Department for plan check to ensure that reclaimed water facilities are incorporated into their plans. This activity will continue to develop customers for all three reclaimed water treatment plants, in all of the planned and existing service zones.

Upon receipt of City Council approval for the Commercial Tenant Improvement Plan Review Fee for reclaimed water plan checks, the process for obtaining a permit will be two-tiered. The plan review includes checking for cooling towers, dual plumbing for toilets and urinals and use of reclaimed water for landscape irrigation. For small, simple projects an over-the-counter plan check process will be established. A \$400 fee is proposed for this reclaimed water review. City staff performing the over-the-counter plan check shall make the determination as to the acceptability of the submittal for that process. For complex projects that require submitting plans for review, a Fee for Service Program shall be established. A deposit of \$2,400 shall be required to plan check irrigation systems and industrial/commercial reclaimed water projects. City staff shall bill against this deposit and refund any monies remaining after the permit is issued. If City charges rise above the deposit, the applicant will be required to pay the additional costs before a permit is issued.

Land Development Code

The Land Development Code (LDC) has established rules and regulations regarding the use of the land development process to extend water and wastewater facilities within the City of San Diego. Similar rules need to be incorporated into the LDC for reclaimed water facilities. In Chapter 12, Land Development Reviews, Article 9, Construction Permits, a new division should be added to set rules and regulations regarding reclaimed water permits. In Chapter 13, Zones, Article 12, Overlay Zone, a new division should be added regarding the reclaimed water implementation zones. In Chapter 14, General Regulations, Article 7, Plumbing and Mechanical Regulations, a new division should be added relating to reclaimed water systems. These proposed modifications to the LDC will be brought forward in the next revision.

Reclaimed Water Plan Review Process

In order for the City to successfully implement this Reclaimed Water Business Plan it is necessary that an internal organizational structure be developed. Staff from the Water and Development Services Departments have been partnering on developing a reclaimed water project review process involving staff from both departments. This section will provide an overview of an internal organizational structure that is being implemented. Both departments agree that the various reclaimed water project review tasks must be transparent to the customers and that the process customers access be clear and efficient. Figure 1 displays schematically how this process will work.

The Water Department continues to serve as the main point of contact for reclaimed water customers. Brochures have been developed to explain to customers how to request reclaimed

water service, and what they must do to retrofit their site to be able to use reclaimed water. This “Customer’s Guide to Reclaimed Water Hookups” will be available in the Development Services Center, 1222 First Avenue on the third floor. All other DSD pamphlets and customer support materials will be reviewed and updated to include reclaimed water references.

The Reclaimed Water Business Plan is based on the concept that all new requests for water service compatible with reclaimed water usage be required to use it. Thus, a GIS map layer showing the reclaimed water service areas has been provided to DSD. When a permit applicant submits a package for review, DSD staff can identify if it is in the reclaimed water service zone and route to the Water Department for plan check and subsequent conditioning by DSD for the use of reclaimed water.

In addition to building permit applicants being tagged for reclaimed water plan check, all new developments are being conditioned for reclaimed water facilities. All new tentative maps submitted to the City for review are routed to the Water Department and a reclaimed water study required. The study determines the type of reclaimed water facilities included in development plans.

The Reclaimed Water Master Plan will be updated as necessary to identify the location of new reclaimed water distribution system pipelines. Any plan updates necessitate a revision to the GIS map layer used to condition tentative maps. The Water Department ensures all regulatory requirements are met including cross connection testing, maintaining a customer database for the Regional Water Quality Control Board and reporting and responding to spills. In sum, there are a number of key coordination points between the two Departments. By implementing these internal reclaimed water tasks, the City can successfully implement the Reclaimed Water Business Plan thus ensuring that the greatest number of customers have access to, and use reclaimed water.

Natural Resources and Culture Committee Reclaimed Water Requests

At the April 3, 2002, Natural Resources and Culture Committee meeting, a motion was approved requesting that the City Manager report back to the Committee within 90 days on the following items: 1) How many golf courses within the City have the potential to use reclaimed water, and 2) the feasibility of placing reclaimed water pipes adjacent to water and sewer pipes during group job construction.

Golf Courses in the City of San Diego

Research was done on all golf courses within the City of San Diego limits that have the potential to use reclaimed water. Out of the twenty-eight golf courses identified, one currently uses reclaimed water; one is presently being retrofitted to use reclaimed water; six will be using reclaimed water following completion of CIP projects that are presently in design and/or construction to enlarge the reclaimed water system; and seven golf courses are future reclaimed customers as they are located near a planned reclaimed pipeline alignment. A map detailing City golf courses and reclaimed water pipelines is attached (Table 1, Figure 2).

Coordination of Pipeline Projects.....

In an attempt to determine the feasibility of including reclaimed water pipelines with water and

sewer pipeline projects, a thorough review of the City's upcoming water and sewer pipeline projects was performed to determine if any were proximate to reclaimed water service zones, production facilities or potential user sites. By coordinating the installation of reclaimed water pipelines with these projects, disruption to the community and to traffic would be minimized. Approximately 253 pipeline projects were identified in the City where construction would occur in FY 04 or later. It was determined that if construction was to occur earlier than this, it would be too disruptive to try and include reclaimed water facilities in these projects and project costs and schedules would be seriously negatively impacted.

The 253 projects were analyzed based on their proximity to a source of reclaimed water. Out of the identified projects, two are near sources of reclaimed water supply and received the highest ranking, while twenty-one are near large demand customers and received prioritization rankings of medium or low depending upon their length, and location near potential customers (Table 2, Figure 3). It is important to note that these projects are not currently included in the reclaimed water capital program. Grant funds to plan, design and construct these projects will be sought. Finally, a more detailed review of the top scoring projects should be conducted to determine if a reclaimed water pipeline can be constructed within the right-of-way alongside the planned pipeline.

CONCLUSION

The City Council has taken a series of actions to develop reclaimed water in San Diego as a viable water supply source. The recommended actions in this Manager's Report build on the creation of the updated Reclaimed Water Master Plan, reclaimed water CIP and reclaimed water rate reduction. The recommendations contained herein set forth actions to enforce provisions of the Mandatory Reuse Ordinance; procedural actions to put in place an organization process for staff to ensure this business plan proceeds in an orderly fashion; updating the Land Development Code to be consistent with City Council reclaimed water policies; and, adopting a new plan check fee for the City to be reimbursed for work performed when reviewing building and development plans.

ALTERNATIVE

Do not implement the Reclaimed Water Business Plan recommendations. This is not advised because of the adverse effect doing so will have on the City's ability to effectively and equitably market and use this valuable water resource.

Respectfully submitted,

Larry Gardner
Water Department Director

Approved: Richard Mendes
Utilities General Manager

GARDNER/MAS/SR

Note: The attachments are not available in electronic format. A copy is available for review in the Office of the City Clerk.

Attachments: Table 1: Golf Course Demands

Table 2: Pipeline Projects 2004 - 2008

Figure 1: Flow Chart on Reclaimed Water Plan Review Process

Figure 2: Reclaimed Water Pipelines and Golf Courses

Figure 3: Pipeline Projects