THE CITY OF SAN DIEGO

MANAGER'S REPORT

DATE ISSUED: July 28, 2004 REPORT NO. 04-172

ATTENTION: Natural Resources and Culture Committee
Agenda of August 4, 2004

SUBJECT: Recycled Water Mandatory Reuse Ordinance Criteria

REFERENCE: City Council Ordinance O-17327 – Mandatory Reuse Ordinance
City Council Resolution R-297487
City Manager's Report 04-084

SUMMARY

Issues –

1. Should the Natural Resources and Culture (NRC) Committee approve the recommended criteria specifying under what conditions new and existing properties shall be required to use recycled water for landscape irrigation, sanitary plumbing, HVAC cooling tower, and manufacturing uses?

2. Should the NRC Committee support the recommendation to implement a focused Customer Development Program aimed at increasing public awareness of recycled water issues, increasing the conversion of existing potable water customers to recycled water use, and providing new recycled water customers improved customer care coordination for the plan review and approval process?

Manager's Recommendations –

1. Approve the recommended criteria specifying under what conditions new and existing properties shall be required to use recycled water for landscape irrigation, sanitary plumbing, HVAC cooling tower, and manufacturing uses.

2. Approve the recommendation to implement a focused Customer Development Program aimed at increasing public awareness of recycled water issues, increasing the conversion of existing potable water customers to recycled water use, and providing new recycled water customers improved customer care coordination for the plan review and approval process.

Fiscal Impact –

Implementing the Customer Development Program will require the expenditure of up to $80,000 in FY 2005. These expenditures will be absorbed through the reallocation within the Water Department of FY 2005 budgeted amounts for professional contractual services.

BACKGROUND

On July 24, 1989 the San Diego City Council approved Ordinance 0-17327 ("Mandatory Reuse Ordinance") which specified that "recycled water shall be used within the City where feasible and consistent with the legal requirements, preservation of public health, safety and welfare, and the environment." On December 9, 2002 San Diego City Council passed Resolution R-297487 authorizing City staff to work in conjunction with the Public Utilities Advisory Commission (PUAC) to develop specific criteria to be applied in determining which particular properties would be required to use recycled water for suitable and approved purposes.

In order to develop specific reuse criteria for both new development and "retrofit" situations, City staff met with the PUAC Subcommittee on Water & Wastewater Service Delivery in early 2003. As a result, an initial draft of proposed criteria was developed which balanced the following elements in determining specific properties and facilities that would be required to use recycled water:

1. type of approved use (e.g. landscape irrigation, sanitary purpose, etc.)
2. proximity of the property to existing recycled water pipelines
3. construction costs; and
4. the amount of potable water savings anticipated as a result of conversion to recycled water use.

In general, the draft criteria mandated customers whose existing developed property was immediately adjacent to a recycled water pipeline, and which used 5 acre feet per year (AFY) or more of potable water for landscape irrigation purposes, be required to retrofit their property to use recycled water for this purpose. For all "new" property in development adjacent to an existing pipeline, the draft criteria required recycled water use for irrigation purposes regardless of amount of projected consumption. In addition, the draft criteria recommended that all new buildings and facilities be required to use recycled water for cooling tower and sanitary uses if the property was immediately adjacent to the pipeline and if specific building size or water consumption thresholds were met.

Subsequently, staff made presentations to community groups and other interested parties to collect input and feedback on the initial draft criteria, as well as to identify preliminary concerns regarding their application. (See Attachment 1: Community Presentations.) Based upon input obtained during these presentations throughout 2003, the initial draft criteria was revised and presented to the PUAC for approval on November 17, 2003.

The primary change to the criteria resulting from stakeholder feedback was the increase in the usage threshold for retrofit properties. Based upon concerns expressed from the business community, including building managers, regarding the impact of significant upfront retrofit construction cost (estimated at $2000 per acre foot of consumption), the usage threshold was raised from 5 AFY to 20 AFY to provide for a 4-5 year payback more consistent with the business planning cycle; based upon the current price difference between potable and recycled water, the average retrofit customer using 20 AFY could expect a payback of their construction costs within 4 - 5 years.

DISCUSSION

Since the November 2003 PUAC approval of the revised criteria, staff has continued to make additional follow-up presentations to targeted stakeholders in response to their continuing concerns regarding the impact of the criteria on specific businesses and operations, and to identify any further mitigation for these concerns. Staff again met with representatives of Building Owners and Managers Association (BOMA), the San Diego Regional Chamber of Commerce, the Industrial Environmental Association (IEA) as well as the San Diego Regional Economic Development Corporation (SDREDC). In addition, staff met with recycled water program staff of Irvine Ranch Water District in order to evaluate alternative approaches and experiences regarding the implementation of reuse requirements.

Representatives from BOMA, SDREDC, and SD Regional Chamber of Commerce expressed a concern regarding the economic impact of the proposed requirement that new buildings over 55 feet in height be dual plumbed to accept recycled water for sanitary uses (toilet and urinal flushing). Key among their concerns has been the incremental additional construction costs which would be expended to plumb a building of this size for both potable water and recycled water. Representatives estimated the additional costs at approximately $650 per fixture. A building of this size would have on average 46 fixtures, resulting in total additional construction costs of $29,900.

In response to these concerns, staff met with members of Irvine Ranch to more fully explore the cost impact of dual plumbing requirements. Based upon data obtained from this agency, which has successfully implemented dual plumbing in 13 office buildings to date based upon the same criteria being proposed by the City, expected incremental construction costs would be 9% of total plumbing costs. For construction costs typically experienced in a building of the size falling within the criteria, ($8 million), incremental costs would be less than 1% of total construction costs. As a result, staff continues to recommend that new buildings over 55 feet in height or having an occupancy of 800 people or more be required to dual plumb for recycled water as a condition of development. In addition, in response to the practical experience of Irvine Ranch regarding the application of these criteria and to further clarify building size, staff is

recommending that criteria also include buildings over 80,000 square feet. A minimum potable water savings of 1-3 AFY per building is expected as a result of this requirement.

BOMA, SDREDC, and SD Regional Chamber of Commerce have also suggested modification of the department's proposed criteria regarding the use of recycled water for manufacturing purposes. Staff initially proposed that all manufacturing process which utilized 5 AFY in potable water be mandated to use recycled water if such usage level would result in a business payback of 5 years or less. Concerns of the above stakeholders centered on the technical expertise that would be required of staff in order to effectively evaluate the cost differentials and payback associated with potentially detailed and complex manufacturing processes. In order to effectively implement the proposed criteria, these stakeholders observed that the level of technical review required could be very significant. While firmly agreeing that all manufacturing should actively evaluate the suitability of recycled water use, these stakeholders have proposed that such evaluation be done in partnership with the City's Recycled Water Program, rather than through a mandated conversion process. Given the limited number of potential customers which would likely fall into this usage category, and given the concerns expressed, staff altered its initial recommendation to specify that manufacturing facilities be required, as a condition of development, to submit a recycled water use study to the City detailing the degree of feasibility associated with recycled water use. Staff within the Recycled Water Program will review such use study and work in partnership with manufacturing facilities to maximize recycled water use.

In meeting with additional stakeholders, the Industrial Environmental Association (IEA) expressed to staff concerns regarding the feasibility of using recycled water for cooling tower purposes. In response, staff contracted with *Earth Tech,* a private firm specializing in this area, to complete an in-depth analysis which addressed both the health and safety concerns of recycled water usage for cooling towers, as well as identified the impact of its use on the overall maintenance costs of these units. The report found that there were no health impacts to the use of recycled water for cooling towers. In addition the study concluded that while operational and maintenance procedures would have to change, the resultant incremental additional costs associated with any changes would be offset by the lower cost of recycled water vis-à-vis potable water. The conclusions of this report were shared with members of the IEA at a special recycled water workshop held at the North City Water Reclamation Plant on May 27, 2004. As a result, staff continues to recommend the previous criteria requiring all new buildings utilizing 300 tons of cooling or greater be required to use recycled water for such purposes. It is expected that 5 AFY in potable water savings per facility would result from implementing this criteria.

In response to concerns expressed by the San Diego Chamber of Commerce regarding the impact of irrigation retrofit costs on individual customers, the department continued research into potential financial mechanisms that could be made available to private property owners who were required to retrofit. In addition to previous examinations into private loan financing, potential revolving funds, potential financial support from both the Metropolitan Water District and County Water Authority, and submissions for Proposition 13 and Proposition 50 funds, this research effort also included discussions with *Johnson Controls*, a private engineering firm, regarding the feasibility of utilizing a "performance contracting" model as means by which retrofits installations could be accomplished without the burden of up-front capital costs on the customer.

Unfortunately, despite these efforts, the Department has not been successful in the identification of a viable funding source in support of property owner retrofit costs. Prop 13 and 50 efforts requesting support of a revolving loan program have been unsuccessful. Both MWD and CWA have been unable to provide incentives in support of private property construction. A review of third party lending options revealed that the potential loan pool would be too small for lenders to independently create incentives for retrofit customers. And the potential performance contracting model proposed by *Johnson Controls* was not feasible as that company was not in a position to assume the financial risk of loaning money directly to retrofit customers. The Water Department itself could not assume this risk as the City Charter prohibits the extension of credit to property owners in this manner.

However, staff is recommending the establishment of a 20 AFY usage threshold which would trigger mandatory retrofit notwithstanding the inability to identify financial incentives for property owners. This threshold was previously approved by the PUAC (and recently reaffirmed at its July 19, 2004, meeting) in recognition of the feedback obtained from stakeholders regarding the need to establish a reasonable payback period of retrofit costs; recognition that this consumption level represents a significant amount of potable water use (6.5 million gallons annually) for landscaping purposes; and represents the best balance between business constraints and the need to maximize the use of recycled water where available and feasible.

Finally, while developing criteria for mandatory reuse, program staff also undertook a customer development analysis to identify how the Recycled Water Program can effectively coordinate the customer contact associated with any mandated program as well as increase the level of outreach to potential customers who do not fall within the mandatory criteria. The result of this analysis is a series of recommendations regarding improved public education and communication, as well as targeted customer management. While the analysis identify many potential initiatives, staff review of these in the context of overall Recycled Water Program goals resulting in a recommendation to implement the following for Fiscal Year 2005:

1. Create an informational program targeted to customers who will be mandated to use recycled water.
2. Implement a prospect nurturing program to boost prospect-to-customer conversion rate.
3. Develop a public awareness program for the area served by the North City Water Reclamation Plant that is integrated with the County Water Authority's region-wide approach.

RECOMMENDATION

As a result of the above research and outreach efforts, staff is recommending the NRC approve the criteria outlined in Attachment 2 for enforcing the mandatory use requirements on properties immediately adjacent to an existing recycled water distribution pipeline.

Staff is also requesting NRC approval of no more than $80,000 in Fiscal Year 2005 for the acquisition of contractual resources necessary to implement the primary recommendations resulting from the customer development plan completed.

These recommendations were reviewed and approved by the PUAC at its June 21, 2004, and July 19, 2004, meetings.

ALTERNATIVES

1. Approve criteria which mandates the use of recycled water for new development only.
2. Approve alternate criteria.
3. Do not approve the acquistion of resouces in support of the Customer Development Plan.

Respectifully submitted,

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Frank Belock, Jr.
Water Department Director

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Approved: Richard Mendes
Deputy City Manager

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Attachment: 1. Community Presentations
2. Proposed Criteria

ATTACHMENT 1

COMMUNITY PRESENTATIONS

During the period between March and July 2003, presentations regarding the initially proposed criteria for recycled water mandatory use were made to the following groups:

- Associated General Contractors (AGC)
- BIOCOM
- Building Industry Association (BIA)
- Building Owners and Managers Association (BOMA)
- California Landscape Contractors Association (CLCA)
- Community Planning Groups:
  - Rancho Bernardo
  - University
  - Miramar Ranch North
  - Mira Mesa
  - Otay Mesa
  - Scripps Ranch

- Industrial Environmental Association (IEA)
- Metro TAC
- Metro Commission
- Public Utilities Advisory Commission
- San Diego City Schools Landscape and Maintenance
- San Diego Greater Area Chamber of Commerce
- San Diego Regional Economic Development Corporation
- Sierra Club
- Technical Advisory Committee to City of San Diego DSD
- WaterReuse Association – San Diego Regional Chapter

Recycled Water Mandatory Use in San Diego
Retrofit Market

Title 22 Uses of 2.2 Disinfected Tertiary Recycled Water	**Retrofit Market** (Where property line is contiguous to RW line [1])				
	Residential		**Schools, Commercial, Industrial, Governmental**	**Parks and Cemeteries**	**Golf Courses**
	Single Family Dwelling	**Multi-Family/HOA**			
Irrigation	Not Required	**Required if = or > 20 AFY usage for irrigation**	**Required if = or > 20 AFY usage for irrigation**	**Required**	**Required**
Dual Plumbing – Sanitary Uses	Not allowed per Title 22	Not allowed per Title 22	Not required. Voluntary	Not Required	Not Required
HVAC – Cooling Tower	Not Applicable	Not Required	Not required. Voluntary	Not Applicable	Not Applicable
Manufacturing Processes [2]	Not Applicable	Not Applicable	Not required. Voluntary	Not Applicable	Not Applicable
Other Uses [3]	**May be required, on a case-by-case basis.**				

[1] Proposed retrofit criteria are in effect when a pipeline capable of serving recycled water is contiguous to the customer's property or will be contiguous within one year.

[2] For manufacturing that uses potable water as part of manufacturing process.

[3] Refer to Title 22 Water Recycling Criteria in California (cost recovery of < or = 5 years will be used).

ATTACHMENT 2

Updated
Recycled Water Mandatory Use in San Diego
New Development Market

Title 22 Uses of 2.2 Disinfected Tertiary Recycled Water	**New Development Market** [3]				
	Residential		**Schools,** Commercial, Industrial, **Governmental**	**Parks and Cemeteries**	Golf Courses
	Single Family Dwelling	**Multi-Family/HOA**			
Irrigation	Not Required	**Required**	**Required**	**Required**	**Required**
Dual Plumbing – Sanitary Uses	Not allowed per Title 22	Not allowed per Title 22	**Required, if recycled water is available or will be available based on City of San Diego current Master Plan and building is 55 ft in height, projected to have at least 800 occupants, or encompasses 80k sq.ft.**	Not Required	Not Required
HVAC – Cooling Tower	Not Applicable	Not Required	**Required if > or = 300 Tons capacity or 5 AFY recycled water usage.**	Not Applicable	Not Applicable
Manufacturing Processes [1]	Not Applicable	Not Applicable	Recycled Water Use Study submitted as a condition of development.	Not Applicable	Not Applicable
Other Uses [2]	**May be required, on a case-by-case basis.**				

[1] For manufacturing that proposes to use potable water as part of manufacturing process

[2] Refer to Title 22 Water Recycling Criteria in California.

[3] New development projects are required to install recycled water facilities for approved uses within an existing or proposed reclaimed water service area in accordance with Subdivision Map Act and the City of San Diego Municipal Code.