

SALT LAKE CITY COUNCIL STAFF REPORT

DATE: August 30, 2002

SUBJECT: WATER EFFICIENCY STUDY AND FEASIBILITY OF SECONDARY WATER SYSTEMS

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Document Type	Budget-Related Facts	Policy-Related Facts	Miscellaneous Facts
Resolution	Accepting the study does not have an immediate budget impact. Funding may be necessary for major improvements to park and golf course irrigation systems and for a wastewater-reclaimed water reuse pilot project.	The study recommends that the City develop secondary water systems for certain City-owned golf courses and parks and that secondary water systems be incorporated into long-range development planning for portions of the City.	The City Council issued a legislative intent in June 2001 requesting that the Department of Public Utilities continue to explore the use of secondary water systems.

ACTION REQUESTED:

The Administration requests that the Council adopt a resolution acknowledging receipt of the 2002 Salt Lake City Water Efficiency Study and endorsing the policy recommendations contained therein.

MATTERS AT ISSUE:

Secondary Water Irrigation Systems – Salt Lake City holds water rights in Utah Lake water in the Jordan River and Surplus Canal. This water will require filtering and treatment to remove dissolved salts, odors, algae and other suspected solids before it is suitable for sprinkler irrigation and public contact. The study indicates that it will cost about \$390 per acre foot to filter and treat this water for sprinkler irrigation. Salt Lake City currently pays \$150 per acre foot of potable water from the Metropolitan Water District and \$200 per acre foot from the Central Utah Water Conservancy District. In the short term, secondary water systems in Salt Lake City are probably not cost effective. In the long run, the development of additional water sources for irrigation purposes will extend the City’s current water supplies. As the City’s wholesale cost of water increases, secondary irrigation systems will be more cost effective. The Department of Public Utilities is analyzing the options for requiring that secondary water systems be installed in growth areas as development occurs.

Reuse of Reclaimed Wastewater – The study estimates that the cost of additional treatment of reclaimed wastewater for irrigation purposes to be \$223 per acre foot. This cost is less than the cost of treating Utah Lake water because it can be incorporated into the current upgrade at the water reclamation plant. Besides using reclaimed water at the Rose Park Golf Course, the Department of Public Utilities is discussing the use of reclaimed wastewater at an oil refinery, which is also a large water user near the wastewater treatment plant. The Department will be requesting funding for a pilot treatment project

during the next biennial budget. This request is contingent upon a commitment by the City to use the reclaimed water to irrigate the Rose Park Golf Course and nearby parks.

Replacement and Upgrading of Irrigation Systems in City Parks and Golf Courses - Installing central control systems at City parks and golf courses will result in significant amounts of water savings according to the study. Major irrigation system replacements or upgrades will need to be handled through the capital improvement program and compete with other projects for funding.

ANALYSIS/BACKGROUND:

The Department of Public Utilities entered into a professional service agreement with Stantec Consulting to identify opportunities to improve City irrigation efficiency and to point out opportunities for development of secondary water resources. The Department of Public Services and the Department of Airports also participated in the study. The consultant found that nearly 47% of water supplied by the Department of Public Utilities is used for outside irrigation of landscape and turf.

The study makes the following conclusions:

1. Existing Salt Lake City water rights can be used for development of secondary water from Utah Lake or the Water Reclamation Plant.
2. The strategic location of canals and natural drainages present the opportunity to expand use of secondary water throughout the Salt Lake City service area.
3. The northwest region of Salt Lake City offers the best opportunity to install secondary water system infrastructure.
4. Salt Lake City irrigates over 1400 acres of parks, golf courses, roadway islands, and public and airport landscapes, the vast majority using potable water.
5. Many of the City's irrigation systems are outdated. There is a potential for water savings up to 138 million gallons a year at five City golf courses and over 70 million gallons annually at City parks with updated and more efficient irrigation systems, and more landscape and streetscapes that incorporate water-efficient plants. Since some of these upgrades are very expensive, the investment recovery may take over 20 years.
6. The development of alternative water sources at Nibley, Forest Dale, and Rose Park golf courses would eliminate potable water use at these sites.
7. Because of odors and high salt and algae content of Jordan River water, it will be necessary to treat or blend the water with higher quality water such as shallow groundwater to achieve acceptable water for spray irrigation of residential turf and ornamental landscaping.
8. The consultant projects that the cost to treat the Utah Lake water from the Jordan River or Surplus Canal will be \$390 per acre foot.
9. The cost to treat reclaimed wastewater for irrigation purposes is projected to be \$223 per acre-foot.

The report states that secondary water systems would extend the City's current water supplies by using available lower quality water, such as surplus Utah Lake water and wastewater effluent. The consultant's recommendations include the following:

- a. Develop a pilot reuse project of wastewater for the Rose Park Golf Course.
- b. Implement a pilot project to treat or blend Utah Lake water to demonstrate the acceptability of this water source for residential irrigation.
- c. Incorporate secondary water irrigation systems into long-range development planning for the large undeveloped northwest region of the City.
- d. Install central control systems at City parks and golf courses.
- e. Utilize more water-efficient landscape and streetscape design.

The purchase prices for wholesale water from the Metropolitan Water District is \$150 per acre-foot. Water purchased from the Central Utah Water Conservancy District currently costs \$200 per acre-foot. Therefore, in the short term, treating of Utah Lake water for reusing wastewater is not cost effective. However, the cost of water from the Metropolitan Water District is estimated to cost \$300 per acre foot by 2005 or 2006. In the long term it may be wise for the City to begin to reuse wastewater or begin to require major developers to install secondary water irrigation systems and treating facilities for using Utah Lake water.

As a result of the consultant's study, the Department of Public Utilities hired four summer interns from Utah State University to perform water audits of the irrigation systems at the City's parks and golf courses. As a result of this project, the Department of Public Services has been able to correct many of the minor problems identified by the interns. Major system replacements or upgrades will need to be handled through the capital improvement program and compete with other projects for funding.

The Department of Public Utilities is analyzing options to require developers to install secondary water systems in certain portions of undeveloped land. Developers could also provide the treatment infrastructure to bring water sources up to acceptable standards for sprinkler irrigation use.

CHRONOLOGY:

June 1998 – The City Council adopted the following legislative intent statement:

It is the intent of the City Council that the Department of Public Utilities develop strategies to encourage use of secondary water in green spaces.

June 2001 – The City Council adopted the following legislative intent statement:

It is the intent of the City Council that the Department of Public Utilities continues developing secondary water systems for parks and golf courses and considers including a secondary parallel water system in new developments within the Northwest Quadrant.

May 2002 – Water Efficiency Study completed

July 2002 – The Public Utilities Advisory Committee approved the study.