

Utah: Salt Lake City - Salt Lake City Works with Stakeholders to Protect its Water Supply

Background

The Salt Lake City, Utah, Public Utilities' water system supplies more than 400,000 customers, providing an average of 89.8 million gallons of water daily. Peak demands reach over 182 million gallons a day during the hot summer months. Delivery of water to Salt Lake City and county residents depends on a complex network of dams, aqueducts, water treatment plants, distribution reservoirs, and water mains. Salt Lake City's water system is one of the world's most complex because of the number of water sources and differences in service elevations. Four local sources are tapped to meet Salt Lake City's water requirements: 1) City Creek, Parleys Creek, and Big and Little Cottonwood Creeks supply about 57 percent; 2) The Deer Creek Project, 40 miles southeast of Salt Lake City, supplies approximately 27 percent; and 3) Deep wells on the city's north and east benches supply the balance of the water needed.

Water from the Central Utah Project's Jordanelle Reservoir will provide water to meet population growth through the year 2025. All of the surface water receives full treatment before distribution consisting of flocculation, sedimentation, filtration and chlorine disinfection. The water meets or exceeds all water quality requirements set by the U.S. Environmental Protection Agency (EPA), Utah State Department of Health, and the Safe Drinking Water Act (SDWA). However, the need to protect the city's ground water supplies became apparent to the Utility in the early 1990's when two drinking water wells were discovered to be contaminated with PCE (perchloroethylene), a common dry cleaning solvent. The State Department of Environmental Quality (DEQ) has completed a source water assessment for Salt Lake City.

Priority Contamination Threat

The priority contamination threat is to the ground water supplies from PCE (perchloroethylene).

Local Involvement and Developing the Protection Plan

The Salt Lake City Department of Public Utilities has established a management policy that solicits input from a variety of stakeholders, including the Salt Lake City Council, the Salt Lake Valley Health Department, the County Sheriff's Department, and the U.S. Forest Service. In cooperation with these entities, Public Utilities originally developed the 1988 Watershed Master Plan to set goals for the protection of the watershed. The utility sought public input for the master plan by organizing a series of public meetings, which were publicized on the Internet, on public access TV, in newspapers, and via fliers that were distributed to the population. In 1999, Salt Lake City revised its Watershed Master Plan, also with public input, to address the challenges arising from unprecedented growth in the valley.

With the protection of the watersheds being a major issue within the community, a publicly funded program for watershed land acquisition was initiated with the '88 Watershed Master plan. This program was based on community contribution to a watershed land purchase fund, a dedicated fund financed by a \$0.25 fee on each water bill. In the 1999 plan update, the funding was increased to \$0.50 per bill, generating \$500,000 per year. The fund has been used to purchase over 1200 acres of prime watershed property, preventing it from being developed, and providing long term protection by incorporating conservation easements with the purchases.

Many efforts have been made to cooperatively address ground water issues across the Salt Lake Valley. In 1998, in an effort to coordinate a valley-wide source water protection zone across jurisdictional boundaries, all of the water entities in the valley joined in a ground water study and formed the Salt Lake Valley Ground Water Protection Coalition. For surface water issues, along with the major surface water producers in the state, DEQ, and the State Health Laboratory, Salt Lake City participates in the "Utah Water Quality Alliance," a local, voluntary alliance dedicated to protecting surface waters, producing the best drinking water possible, and encouraging excellence in water operations. The Alliance also joined the "Partnership for Safe Water" (a program developed by the national drinking water community) as a group to expand the effectiveness of the program's efforts to survey and optimize the performance of their participating facilities, Salt Lake City received the Director's Award for 5 years of consecutive compliance with Phase III of the Partnership Program. The community benefit of this expanded approach is that the same high level of water quality is available throughout the Salt Lake area.

To encourage community participation in water quality, Public Utilities Consumer Confidence Report includes advice on methods of preventing contamination of drinking water sources. Public Utilities Advisory Board meetings, at which the public are welcome, are held each month. The Utility encourages comments from the public and routinely includes bullets on the water bills to keep them informed of meetings, current events and participation opportunities.

Management Measures

The canyon watersheds of the Wasatch Mountains encompass over 185 square miles. Salt Lake City, under State law, as a City of the first class, population exceeding 100,000, has extraterritorial jurisdiction over its extended watershed. This authority along with the Federal authority granted by Public Law 101, of 1914 and 1934, allows for the establishment of regulations and ordinances to protect the water supply. The canyon watersheds are a valuable, regional natural resource, and the Salt Lake City Department of Public Utilities must work with the community to protect water quality while allowing recreational activities such as skiing, camping, picnicking, hiking and hunting. Specific watershed ordinances have been developed to allow the department to continue the multiple-use concept while closely monitoring and enforcing the rules that help maintain the watershed and water quality. Public Utilities launched a new program "Keep It Pure" in response to the need for additional public information and education on watershed issues. This popular program has provided for new signage in the watershed, enhancing the outdoor experience while providing valuable watershed protection information. Classroom programs for the 4th and 9th grades have been developed and added to the

curriculums providing a place based educational experience that will enhance the students understanding and appreciation of the watershed.

The Salt Lake Valley Ground Water Protection Coalition developed a model ordinance, incorporating State requirements, which has been adopted or is being acted upon in twelve smaller communities as a baseline for concerted ground water protection. Communities added some variations providing greater levels of protection as desired. These ground water protection ordinances have allowed for the identification of potential problems and for the establishment of Best Management Practices, BMPs, to address them. Examples of the components of the ground water protection ordinances include:

- Specified permitted uses, prohibited uses, and conditional uses in each Wellhead or Protected Zone;
- Restricted uses in protection (or overlay) zones for primary and secondary recharge areas;
- Required responsibility for businesses for remediation of spills that impact ground water;
- Developed matrices of allowable uses by planning and zoning commissions; and
- Required referrals to the water utility for specific Best Management Practices (BMPs).

As a member of the Ground Water Protection Coalition, Salt Lake City received an EPA Environmental Achievement Award in July 1998 for its efforts to protect ground water.

The Salt Lake Valley Health Department also conducts a Pollution Prevention Program that incorporates the following measures:

- An industry-specific auditing program (individual businesses within specified industry types are inspected, recommendations provided, and major violations forwarded for enforcement action);
- Voluntary facility pollution prevention/compliance audits (waste auditing services are made available to individual facilities upon request and focus on pollution prevention and regulatory compliance);
- Settlement conferences (to negotiate sanctions against businesses violating state and/or local rules and regulations); and
- Technical assistance to small businesses (regarding waste minimization and toxicity reduction).

The Salt Lake Valley Health Department plans to follow developments closely as new state rules are finalized concerning water reuse.

In 1991, the State Engineer of the State Department of Natural Resources, Division of Water Rights, established an Interim Ground Water Management Plan in an effort to address potential for excessive ground water withdrawals that could endanger the principal aquifer's water quality. The State Engineer established a number of measures to prevent excessive withdrawals, including limiting withdrawals to specific amounts within nine ground water management areas.

In 1993, the State Department of Environmental Quality, Division of Drinking Water established a "Drinking Water Source Protection Rule," with the purpose of designating

and protecting land surfaces that are contributing to water recharging the aquifer that feeds a well or spring source.

Contingency Planning

Salt Lake City lies in an active earthquake zone. A serious earthquake could sever aqueducts and water lines serving the community, resulting in the loss of water service for an extended period of time. The Salt Lake City Department of Public Utilities provides recommendations to customers for action during a serious earthquake to protect an emergency water supply inside the home and provides an emergency phone number. Reservoirs are situated around the community and can store a day or more supply, depending on use, for the community. The reservoirs also provide for fire flows in the community. Salt Lake City has developed a security plan with strategies to respond to the threat of terrorism.

Measuring Program Effectiveness

Salt Lake City Public Utilities monitors the distribution system water quality in accordance with the regulations. The Salt Lake Valley Health Department samples drinking water on both a regular and random basis to verify the systems compliance with the SDWA requirements. Routine monitoring of ground water quality provides the means to detect and identify the cause of any changes in quality. Watershed protection efforts are demonstrated by the maintenance of the water quality in the canyon streams, the preservation of undisturbed lands and the ability to allow multiple uses while protecting the water quality.

For further information, contact:

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