Utah Environmental Report

Utah Environmental Report: 2010

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State of Utah
Utah Department of Environmental Quality
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Comments and Questions

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Division of Water Quality

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Message from the Executive Director

A little over a year ago, I began my work as the executive director of the Utah Department of Environmental Quality (DEQ). It has been an honor and a pleasure to work with the citizens of Utah, our dedicated agency employees, our stakeholders, the Legislature and Governor Gary Herbert to build upon our record of success in improving Utah's environment. As our first full year together draws to a close, I am proud of our accomplishments and our achievements, which are outlined in this year's annual ***State of the Environment Report for 2010***. Our successes can be highlighted by two primary objectives—building strong partnerships and establishing a new direction for environmental management in Utah and doing so with complete transparency that encourages public dialogue. Listed below are some key principles of our agency:

Building Strong Partnerships

DEQ has important responsibilities for the day-to-day mission of environmental protection. As with other state agencies, fiscal challenges require us to do more with fewer resources. Finding efficiency in our work processes as well as building and maintaining strong partnerships are more important than ever. To this end, we will continue to work closely with each of the 12 local health departments to ensure environmental services are consistently delivered statewide.

Highlighted throughout this report are "success stories" that demonstrate DEQ's commitment to working with local, state and federal agencies to address environmental concerns. For instance, the Division of Water Quality (DWQ) led the state's efforts to coordinate the cleanup of a Chevron oil spill into Red Butte Creek on June 12 and again on December 1. In partnership with Salt Lake City, Salt Lake Valley Health Department, Chevron, and the Environmental Protection Agency (EPA), DWQ worked around -the-clock to oversee the cleanup and inform the public of our collective efforts. We are continuing to work with our partners to ensure thorough, long-term monitoring and restoration.

In another example, DWQ worked closely with our partners to monitor popular recreational waters throughout the state, testing for the bacteria E. coli, a useful and reliable indicator of fecal contamination that can cause illness. On Memorial Day, tests showed elevated levels of E. coli at Salem Pond in Utah County. DWQ worked with local officials to post swimming advisories that informed the public of the risks and is undergoing an aggressive monitoring plan to remove or reduce the risks.

Improved Efficiencies

DEQ is committed to improving our internal operations. As an agency that must abide by a complex set of laws and regulations, on the ground environmental issues can present challenges and opportunities. In August, DEQ adopted a "Lean Six Sigma" process, a business management strategy to improve efficiencies both in permit time and in quality or protection of human health and the environment. This work began with a hard look at the Division of Radiation Control's permitting and licensing applications for EnergySolutions' low-level radioactive waste facility in Clive, Utah. The Division worked with stakeholders, including business leaders, to help pinpoint and ameliorate logjams, something that in the end will help stabilize funding resources and work more efficiently with stakeholders and the public. The Department has entered into a partnership with Salt Lake Community College to do multiple Lean projects in the next year. The Division of Air Quality has just begun looking at minor source permits through the Lean process improvement.

Cleaner Air

This past year, we saw significant progress with a range of emission reduction initiatives. By partnering with other state agencies and industry, the Division of Air Quality's Utah Clean Diesel Program expanded its retrofits of old school buses to include farm equipment and engines. And most recently, with the receipt of an EPA grant, we will be working to re-power diesel delivery trucks with new natural gas engines. We continue to develop common-sense solutions to meet EPA's stronger standards for ozone and particulate pollution so that all Utahns in every part of our great state can breathe easier and live healthier.

Cleaner Land

DEQ is committed to maximizing resources to spur environmental cleanup throughout the state. In 2010 the Division of Environmental Response and Remediation (DERR) made huge progress with Superfund cleanups like Eureka, and assisted others with voluntary cleanups like an 18-acre property near Gateway to prepare for redevelopment. In addition, the Division of Solid and Hazardous Waste provided regulatory oversight for 850,968 pounds of old, obsolete or otherwise non-functioning conventional military munitions. Approximately 501,823 gallons of used oil were collected and recycled through the Do-it-Yourself used oil collection program in FY 2010. The Division is also working with Rep. Becky Edwards on an electronic-waste recycling bill to be introduced in the 2011 Legislative session.

Cleaner Water

The Divisions of Water Quality and Drinking Water continue to ensure our waters throughout the state are protected for its beneficial uses and our drinking water is safe. During the 2010 general session, the Utah Legislature created the Great Salt Lake Advisory Council to advise the Governor, DEQ and the Department of Natural Resources on the sustainable use, protection and development of the Great Salt Lake. We are making strides to determine how to best manage this wonderful, unique resource in our state.

These principles guided our work in 2010 and will continue to do so in the years ahead as we carry out our mission to safeguard public health and our quality of life by protecting and enhancing the environment. I invite you to learn more about DEQ and the issues we are following by visiting the DEQ Web site: www.deq.utah.gov.

Cleaner Air

The Division of Air Quality continues to be committed to improving Utah's air quality. Historically, we've been able to meet the challenges of tougher federal standards to help Utahns breathe easier and live healthier. As noted in the previous State of Environment Reports—2006, 2007, 2008, 2009—in the early 1980s, Utah struggled to meet the health standards for four of the six criteria pollutants identified by the U.S. Environmental Protection Agency (EPA). By 2006, all Utah counties attained current federal air quality standards. Two decades later, Utah finds itself in a similar position with ozone and very fine particles, known as PM2.5, because scientific evidence shows that exposure can be much more harmful to health than previously known.

In December 2006, a revision to EPA's standard for the allowable daily average of fine particles (PM2.5) went into effect, reducing the standard from 65 micrograms per cubic meter (ug/m3) to 35 ug/m3. On March 12, 2008, EPA tightened the limits on the 8-hour standard for ozone from 85 parts per billion (ppb) to 75 ppb. Currently EPA is reviewing whether to revise the standard and is expected to announce a new standard no later than July 31, 2011.

On December 14, 2009, EPA directed the State to find ways to reduce wintertime pollution because parts of the state violate the Clean Air Act's limits for PM2.5. These "nonattainment" areas in Utah include all of Salt Lake and Davis counties, portions of Cache, Utah, Weber, Box Elder, and Tooele counties, plus a portion of Franklin County, Idaho, in Cache Valley. During 2010, DAQ performed work to build the inventory of emission sources and to develop air quality models of past air pollution episodes that will be used to test

strategies to reduce the levels of pollutants during winter inversion periods. The next steps in drafting a State Implementation Plan will involve stakeholder involvement to develop strategies to reduce emissions that results in attaining the standard in future years.

Utahns continue to take notice of DEQ's Choose Clean Air actions and voluntarily take measures to limit driving on days when the air pollution is particularly bad. We can measure that by the fact that the number of "red" air quality days continue to decline, partly due to good weather and public awareness. The Division of Air Quality alerts people all year long to pollution conditions by issuing "green, yellow, and red" air alerts. DAQ's data from the 2010 ozone-pollution season showed the downward trends could be seen since 2006 when ozone topped federal limits and became unhealthy. None of the 13 sites where ozone is monitored exceeded the federal limit in 2010, which is based on average readings over three years. In 2007-2009 periods, five locations were above allowable limits.

DAQ faces further challenges. EPA issued a rule for greenhouse gas emissions last May that will have an impact on Utah facilities permitted by DAQ. In response, DAQ is in the process of finalizing a "tailoring" rule that will focus the permitting activities on the largest sources of greenhouse gas emissions by requiring facilities to include greenhouse gases in their permits only if they increase their emissions of gases by at least 75,000 tons of carbon dioxide equivalent per year.

More School Buses Getting Cleaner with Retrofits

The Division of Air Quality (DAQ) received approximately $2.6 million to retrofit 1200 school buses statewide with Diesel Oxidation Catalyst and closed Crankcase Ventilation. As of September 15, 2010 there have been 955 school buses retrofitted which is approximately 80 percent completed. In addition to this money DAQ also received $1.2 million to partner with Utah State Office of Education and local school districts in non-attainment areas to purchase about 26 school buses. DAQ reimbursed school districts $44,000 per school bus. The following school districts will use federal stimulus funding to purchase new school buses: Cache, Logan, Box Elder, Weber, Ogden, Davis, Salt Lake City, Granite, Jordan, Canyons, Alpine, Nebo, Provo City, and Murray. For more information, visit the Utah Division of Air Quality's School Bus Retrofit Program.

Utah Trucking Industry Contributing to Cleaner Air by Idling Less

Working together with the Utah Trucking Association (UTA), the Utah Division of Air Quality (UDAQ) has acquired funds totaling $588,235 for use in local trucking projects intended to increase fuel efficiency and improve air quality. Funds will be used to install Auxiliary Power Units on long-haul tractor/trailers that spend significant amounts of time traveling and idling along the heavily-populated areas of the Wasatch Front. These units reduce fuel consumption and diesel emissions by providing climate control and electrical power for the truck's sleeper cab and engine block heater during downtime on the road without running the truck's engine. Grant funds were received from the Environmental Protection Agency's Diesel Emission Reduction Act (DERA) and were secured with a grant match from UDAQ agency money.

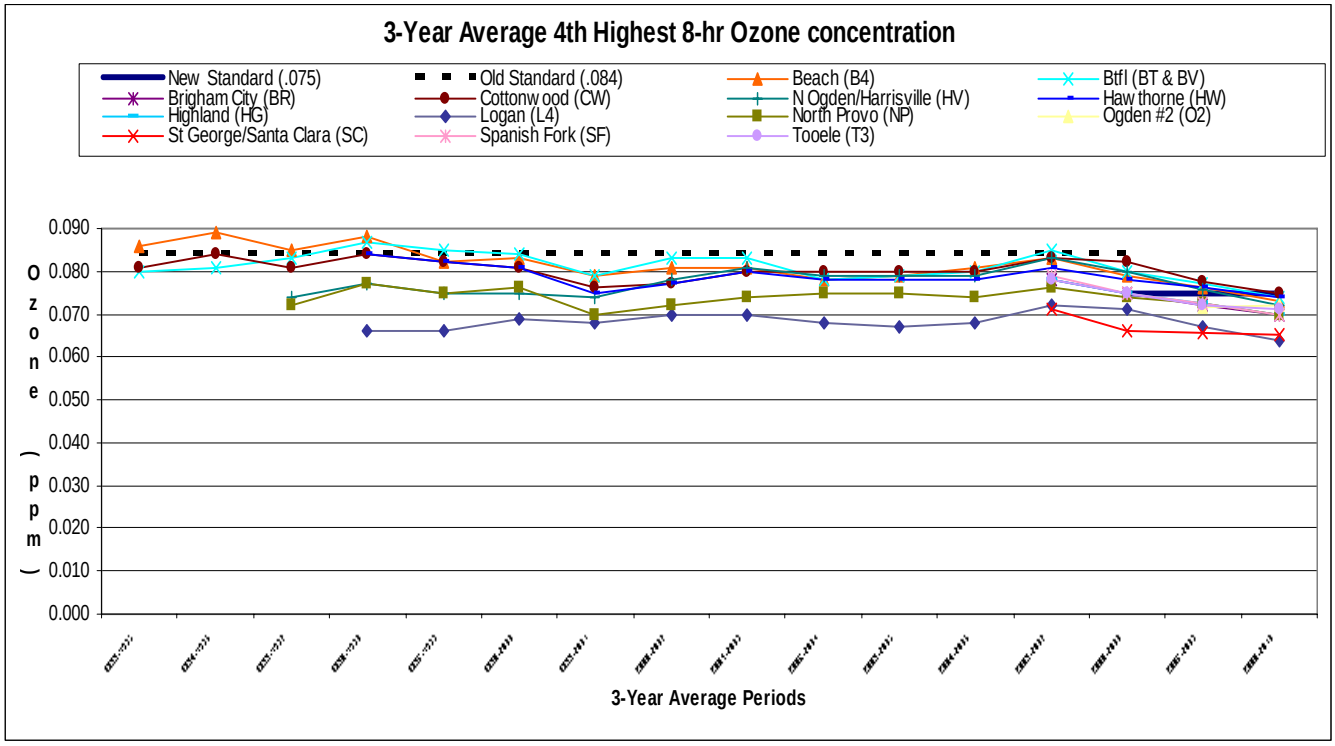
This project, formally named the Utah Clean Diesel Trucking Initiative, was kicked off with a press conference held at the new Multi Agency State Office Building (MASOB) with Governor Herbert, UTA Representatives, grant participants, and local media. David Creer, Executive Director of the Utah Trucking Association, endorsed this project, using it as the cover story to the May 2010 Edition of Utah Trucking Magazine.

For more information, visit: www.cleandiesel.utah.gov.

Ozone

Ozone is formed when volatile organic compounds (VOCs) and nitrogen oxides (NOx) mix with sunlight and heat. Ozone, sometimes referred to as smog, is principally a summer time problem when temperatures are high and daylight hours are long, but it may have implications to wintertime particulate problems as well.

In March 2008, EPA's new ozone standards went into effect following mounting evidence of health risks at lower levels. The new standard of 75 ppb meant that additional areas were evaluated for inclusion in the recommendation for areas of non-attainment that the Governor submitted to EPA in March, 2009.



Particulate Matter

Particulate matter refers to the tiny particles found in the atmosphere that range in size from less than one tenth of a micrometer (about one-tenth the size of a human hair) up to 50 micrometers in diameter. Fine particulate matter known as PM2.5—those particles less than or equal to 2.5 micrometers in diameter—is a more serious health problem. As noted earlier, EPA adopted new standards for PM2.5, setting the standard at 15 micrograms per cubic meter (ug/m3) on an annual basis and 35 ug/m3 for the 24-hour average—about half the limit of the previous standard.

Much of the particulate pollution can be attributable to emissions from automobiles. Industry, woodstoves, wildfires, and lawn mowers—among many other sources—also contribute to poor air quality. Because a major portion comes from automobiles, the Division of Air Quality's Choose Clean Air program continues its public outreach by encouraging people to reduce vehicle trips and take mass transit when air pollution levels are on the rise.

On November 13, 2009, EPA published the list of areas in the nation that do not meet the new federal standards. This list included much of the Wasatch Front—including all of Salt Lake and Davis Counties and portions of Weber, Box Elder, and Toole counties, as well as the low-lying portions of Utah and Cache Counties. The State has until 2012 to draft a plan to EPA on how it will achieve compliance that will ultimately, improve the air quality for decades to come.

Tax Credits for Cleaner Vehicles

As of September 15, 2010, about 75 vehicles received one-time tax credits from DAQ for tax year 2010 as an incentive for helping reduce air pollution with cleaner vehicles. However, that's down from last year when 426 vehicles received this credit. Both of these are dramatically down from those claiming the credit in tax year 2008 when a record number of vehicles—1,482—received tax credits. The reduction can be attributable to the change in law. In 2008, the Utah Legislature revised the State's Clean Air and Efficient Vehicle Tax Incentives. This revision reduced the tax credit for natural gas vehicles to $2,500, or 35 percent, of the vehicle's purchase price, whichever is less. Other clean fuel vehicles are eligible for a credit of up to $750 if they meet air quality and fuel economy standards (98 of the tax credits for tax year 2009 were for vehicle that were eligible for this credit.) . This revision also added hybrid electric vehicles as eligible for the tax credit as long as the vehicle meets the standards.

Even with the decline from the previous year, more vehicles are cleaner as shown by the numbers of vehicles eligible for tax credits. In 2002, when the tax credits were being administered by DAQ, 63 received tax credits, increasing each year to 266 in 2005. After 2005, hybrids no longer were eligible for the tax credits until the change in 2008.

Utah's low natural gas prices have prompted a growing number of people to convert their vehicles to compressed natural gas. But the conversion kits must be EPA certified. Some self-conversion kits on the market do not meet EPA standards and can be both dangerous and dirty. For more information on tax credits, visit the Division of Air Quality's Clean Fuel Vehicle Tax Credit pages.

Agricultural Vehicles Getting Cleaner with Retrofits

DAQ partnered with the Department of Agriculture and Food to obtain $750,000 in federal stimulus money, which was used to replace 9 agricultural vehicles and equipment, repower 22 engines in agricultural vehicles and equipment, and install Auxiliary Power Units on 29 agricultural vehicles. The project's scope was to ensure that stricter emissions standards requirements are met and yield more diesel fuel conservation. The project was successfully completed. One of the participants noted that they used quarter to half of the fuel that they normally would have because of the new engines. For more information, visit: http://www.cleandiesel.utah.gov/agriculture/agintro.html)

Clean Fuel Grant & Loan Program

Through the Utah Clean Fuels and Vehicles Technology Grant and Loan Program, which is supported by Petroleum Violation Escrow (PVE) settlement money and other public and private sources, DAQ received applications from 8 different entities and 10 different projects statewide. DAQ was able to fund 4 projects that include converting police vehicles and refuge trucks to run on CNG, building a new CNG refueling station, and purchasing freight trucks that run on LNG. Annually, a total of $500,000 - $250,000 for grants and $250,000 for loans will be available to help cover the cost of converting a vehicle to operate on clean fuel, for the purchase of Original Equipment Manufacturer clean fuel vehicle, retrofitting diesel vehicles, and for the purchase of fueling equipment for public and private sector business and government vehicles.

Indoor Air: Radon

Radon is an odorless gas and the second leading cause of lung cancer. Only smoking causes more lung cancer deaths. The Division of Radiation Control's (DRC) Indoor Radon Program, funded by the State Indoor Radon Grant from EPA, attempts to reduce the indoor radon concentrations in homes throughout the state to concentrations less than EPA's current action level of 4.0 picocuries per liter of air. DRC does this through public outreach and by providing individualized assistance to homeowners and public agencies on all aspects of the indoor radon hazard problem. For the past couple of years, DRC has seen a substantial increase in radon testing and mitigation.

Radon action is on the rise. For the year 2010, approximately 3,353 short- and long-term radon tests were conducted throughout the state, resulting in approximately 596 mitigation systems installed in residential housing. Included in that number are approximately138 homes built with radon resistant new construction (RRNC) techniques.

Year	Radon Tests	Radon Mitigations
2010	3,353	596
2009	2,231	457
2008	2,243	629
2007	904	316
2006	2,700	372
2005	900	150

The Radon Program has continued its longstanding cooperative alliance with Intermountain Health Care Hospitals throughout the state and works in partnership with the Utah Department of Health, the American Cancer Society, the American Lung Association, the Utah Safety Council, the Wasatch Front_Regional Council, the Huntsman Cancer Institute, and other community groups to provide accurate information and awareness about Radon to the general public.

Climate & Energy

Since 2007, Utah has been a partner of the Western Climate Initiative (WCI), joining Arizona, California, New Mexico, Oregon, Washington, Montana, and the Canadian provinces of British Columbia, Manitoba, Ontario, and Quebec, to address climate change. Sixteen other U.S. states, Canadian provinces, and Mexican states are official observers in the WCI.

Utah remains a member of WCI, with the goal of having a seat at the table to assure that a regional program considers inpacts.

The Climate Registry

Over the past three years, various Utah businesses and government agencies have joined The Climate Registry (TCR), a non-profit organization designed to serve as a single repository or clearinghouse for public and private entities to report their GHG emissions. TCR has developed reporting protocols for the Electric Power Sector, Local Government Operations, and Oil and Gas Production and is continuing to develop reporting protocols for other key sectors to ensure that the quality of GHG emissions data can be used for multiple purposes.

Carbon Capture & Geologic Sequestration

In fulfillment of the statutory charge issued by the Utah Legislature in Senate Bill 202 (2008 General Session), the Department of Environmental Quality is nearing completion of the joint effort to develop recommended rules for carbon capture and sequestration, an approach for reducing GHG by capturing carbon dioxide from industrial sources, such as coal-fired power plants, and storing it in deep rock formations. A diverse workgroup is divided into three subcommittees to study the environmental and health impacts of capturing the carbon from an emission source, transporting the pressurized carbon to the sequestration site, and the injection of the carbon into the ground. The group is required to submit recommended rules to the Legislature by January 2011. During 2009 and 2010, the subcommittees made progress by evaluating existing technical information and similar rule development activities of other states and the U.S. Environmental Protection Agency (EPA) in considering how best to tailor corresponding rules for Utah. A progress report of the workgroup was presented to the Legislature, as required by Senate Bill 202, in May, 2009. An audio archive of the presentation is available through the Legislature's Web site.

Utah Agricultural Carbon Markets

During 2008, DEQ participated in the formation of an ad hoc group consisting of officials from other Utah state and federal governmental agencies, Utah State University, electrical utilities, and private companies in order to provide science-based support for evaluating and identifying the potential for agricultural carbon sequestration within Utah. During 2009 and continuing into 2010, this group combined with another group also sharing a common interest in agricultural carbon market development in Utah resulting in the creation of the Utah Agriculture Carbon Team (UACT).

In June, 2010, UACT submitted a grant proposal for research on carbon sequestration by range management practices and for development of offset protocols for quantifying and marketing carbon offsets in existing voluntary carbon markets. Additionally, UACT continues to meet as needed to review and discuss efforts, activities, and research studies pertinent to agricultural carbon sequestration.

Summary

Progress in addressing energy and climate change issues as they affect Utah will be made as the Department of Environmental Quality continues working closely with the Governor's Energy Advisor, the Legislature, other key State and local governmental agencies, and stakeholders in order to evaluate and influence federal climate change regulation and regional GHG reduction initiatives in an effort to balance environmental protection, economic growth and a sustainable, energy-efficient future for Utah.

Cleaner Land

Protecting the environmental quality of land is integral to ensuring Utah's air is clean and its water pure. To this end, DEQ focuses on the prevention, management, control, and cleanup of toxic chemicals.

Toxic Chemicals

Under the Emergency Planning and Community Right to Know Act of 1986, and the Pollution Prevention Act of 1990, facilities must report their releases of more than 650 toxic chemicals and chemical compounds to the EPA and State officials. It is important to note that the majority of the releases include properly permitted activities allowable under federal law. This data is available to the public through the Toxics Release Inventory (TRI). In 2009, the latest annual TRI available, the total toxic releases in Utah were about 144.7 million pounds of chemicals. This represents an approximate 32 percent decrease from the estimated 212.2 million pounds released in 2008. A preliminary review of emissions data seems to indicate that mining operations accounted for the majority of decreased releases to both air and land during 2009.

Toxic Chemical Releases

	2009	**2008**	**2007**
Air Releases	6.8 m. lbs	9.2 m. lbs	9.3 m. lbs
Land Releases	137.8 m. lbs	203.0 m. lbs	167.6 m. 1bs
Water Releases	100,856 lbs	92,184 lbs	94,405 lbs

Reclamation Projects

The Utah Division of Environmental Response and Remediation (DERR) is charged with protecting public health and Utah's environment by administering the superfund and State voluntary cleanup programs in order to clean up chemically contaminated sites and ensuring that underground storage tanks are properly managed. DERR also helps the U.S. EPA implement its Brownfields action agenda to protect public health and return impacted or potentially impacted properties to a state of beneficial economic re-use.

During 2010, 71 sites were mitigated with a total of 4,323 Underground Storage Tank sites cleaned up as of June. In 2010, 85 new sites were identified to be added to the 453-site list currently undergoing remediation.

Superfund

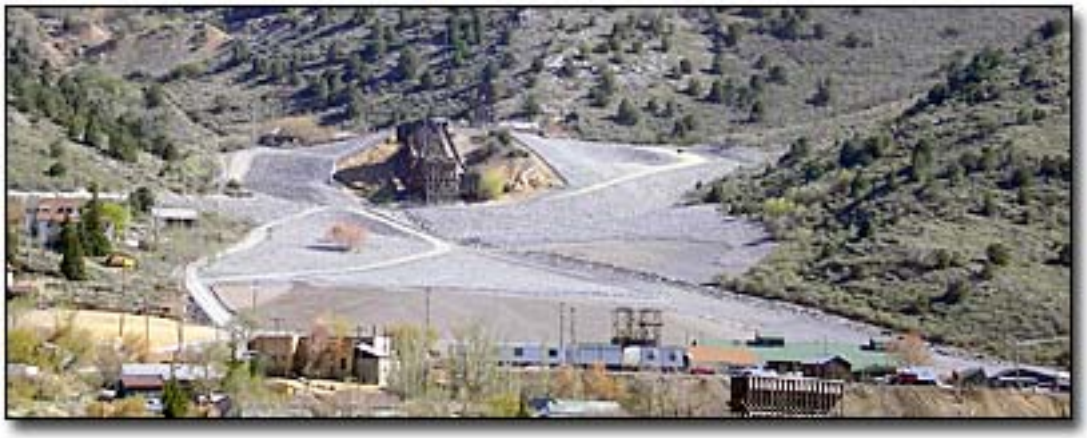
During 2010, the Division of Environmental Response and Remediation (DERR) staff worked closely with EPA to achieve milestones in the Superfund Program. The Cooperative Agreement between DERR and EPA for remedial action at the Davenport and Flagstaff Smelters site was awarded allowing DRR to proceed with cleanup activites at the site. Construction work at residential and mine waste areas of the Eureka Mills site was completed and the International Smelting and Refining site was given EPA's Ready For Reuse designation.

Cleanup work progressed at other Superfund National Priorities List (NPL) sites, including Bountiful/Woods Cross Operable Units 1 and 2, Hill Air Force Base, and the Midvale Slag Riparian Area. DERR completed the Five Year Review Reports for Jacobs Smelter and assisted EPA in the completion of the Five Year Report for Bingham Creek. The NPL designation for the U.S. Magnesium site was finalized on November 4, 2009.

In addition, DERR Emergency Response assisted EPA Emergency Removal Branch with several removal actions this past year which included the Red Butte Creek Oil Spill and the Box Elder Storage Units.
Located 12 miles south of Salt Lake City in Midvale, Utah, the 446-acre Midvale Slag Superfund Site is a former mine waste smelting facility adjacent to the Jordan River. Five separate smelters operated on or near the site at various times from 1871 to 1958. A nearby mill operated until 1971. These activities contaminated the soil and groundwater with heavy metals. In 1991, the U.S. Environmental Protection Agency (EPA) placed the site on its National Priorities List, a list of some of the nation's most contaminated places known as Superfund Sites.

Today, EPA and the Utah Department of Environmental Quality (UDEQ) have nearly completed the remediation required at the site. One of the final elements of the cleanup is to address the nearly 7,000 feet of riparian corridor where the Jordan River flows next to the site.

Early in the cleanup process, EPA partnered with the state and local governments to ensure that the site's remedy would be compatible with mixed residential and commercial land uses planned for the site. In 2008, the Superfund Redevelopment Initiative completed a Ready for Reuse determination for the 446-acre site. Redevelopment is currently underway at the site, now known as Bingham Junction. In 2008, families began moving into new condominiums at the site, and today more than 500 residences are occupied. Bingham Junction redevelopment also spurred the construction of a new Utah Transit Authority community rail station, which will connect Bingham Junction to Salt Lake City and the surrounding region. By the end of 2010, redevelopment is expected be about ten percent complete.



Since 2001, 780 properties and 15 mine waste piles were cleaned up from lead soils due to historic mining activities at the Eureka Mills site.

Voluntary Cleanup Program

The Utah Legislature in 1997 passed a law that created the Voluntary Cleanup Program (VCP). The VCP provides a mechanism to rehabilitate Brownfields and allows for property owners or others seeking to cleanup environmentally impaired sites to do so with Department of Environmental Quality (DEQ) oversight. As of June 2010, 34 Certificates of Completion have been issued under the VCP and approximately 840 acres have been returned to a state of beneficial reuse.

Utah Barrel & Scrap VCP Site

Artspace, a nonprofit group, purchased the former Utah Barrel and Scrap site in downtown Salt Lake City in November 2007. Artspace addressed the contaminated soil and groundwater under an Enforceable Written Assurance and the Voluntary Cleanup Program. Artspace received a Certificate of Completion in May 2009, completed construction and opened the Artspace Commons facility for commercial and residential use in October 2010. The building has many features that contribute to a certification by the nonprofit U.S. Green Building Council. This includes the use of recycled materials, solar photovoltaic window awnings and water reduction features. Approximately 350 construction jobs and 35 permanent jobs were created as a result of this project.

< Before
After >

300 West Town Center VCP Site

The Utah Department of Environmental Quality/Division of Environmental Response and Remediation (DERR) oversaw soil cleanup activities, at an 18 acre property that formerly housed various businesses, in preparation for redevelopment by Target Corporation. The site is located at 1200 South 300 West, Salt Lake City and is currently in the Voluntary Cleanup Program.

Located just south of Salt Lake City's Gateway redevelopment area, the site was contaminated by chlorinated solvents, petroleum hydrocarbons, and a small amount of PCBs. Due to a tight development window, the site characterization and cleanup work occurred rapidly during late 2009 and early 2010, and in concert with other site preparation and initial development activities.

DERR staff worked with the developer to create and implement a site remediation work plan that allowed for demolition, further characterization and cleanup to occur simultaneously. This approach also allowed samples to be collected directly beneath structures as they were removed, resulting in the discovery of a large, highly concentrated area of tetrachloroethene-impacted soil that might have been missed using more traditional sampling methodologies often employed under buildings. The contamination was subsequently removed and properly disposed of.

With the soil concentrations below site-specific cleanup standards and the groundwater impact located east of the building and limited to an area underneath the parking lot, development moved forward during Spring/Summer 2010 and Target opened doors on the 136,000 square foot store in October 2010. It is estimated the new Target store created 175-200 jobs, with additional jobs to be created as the other retail and business spaces on the property are completed.

< Before
After >

UDOT I-15 Construction Project & UTA Commuter Rail South Project

The DEQ assisted the Utah Department of Transportation (UDOT) during the Interstate-15 Construction Project in Utah County. DEQ provided technical assistance relating to management of soil and groundwater contamination at the Pioneer Crossing exit and assisted UDOT by issuing an Enforceable Written Assurance during the purchase of a contaminated parcel in Orem. DEQ also assisted the Utah Transit Authority during the Commuter Rail South Project by overseeing the removal of more than 2,000 cubic yards of contaminated soil, just west of the former Murray Smelter. This area will be used as a future Park and Ride Lot for railway commuters.

Waste Management

The Division of Solid and Hazardous Waste provides regulatory oversight of the management of hazardous waste generated by industries and businesses, and oversight of non-hazardous solid waste generated by individuals, businesses, and industry.

Approximately 3.9 million tons of non-hazardous solid waste was disposed in permitted landfills during 2009, the most recent reporting year for non-hazardous waste generation and management. An additional 121,000 tons was disposed in approved solid waste incinerators.

The Division continues to provide compliance assistance to small businesses which generate hazardous waste. In 2010, the Division conducted 190 compliance assistance visits at small businesses throughout the state.

Pollution Prevention

Waste Tire Program

The Waste Tire Recycling Program continues to achieve success. During fiscal year 2010, nearly 100% of all tires collected in Utah were recycled or reused, amounting to 30,000 tons, or 1.8 million tires recycled.

Recycling Successes

In 2010, the Division of Solid and Hazardous Waste continued its support for recycling of electronic waste. The Division provided technical assistance to a group of e-waste stakeholders in drafting proposed legislation for introduction in the 2011 legislative session. The purpose of the legislation is to establish an electronic waste recycling program in the state. The Division also provided funding to assist with three single-day electronic waste collection events held in Salt Lake City and Tooele County. The Division's oversight of the Mercury Switch Removal Program resulted in 35,269 mercury switches removed from automobiles & 77.65 pounds of mercury collected that might have otherwise been put in the trash and ultimately ended up in a landfill or put into the air as emissions during scrap car recycling.

Used Oil Recycling

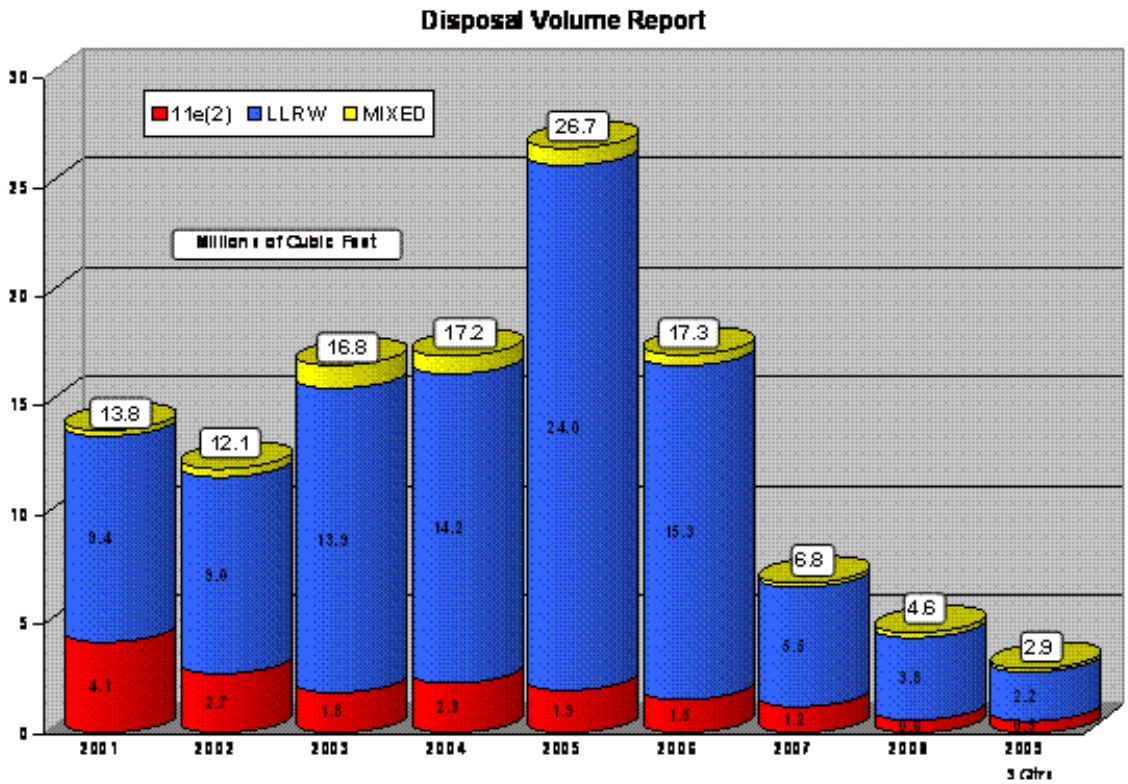
In 1993, the Utah Legislature enacted the Used Oil Management Act, which required DEQ to develop a statewide Used Oil Recycling Program. The volume of used oil recycled in 2009 from household participation was up slightly from 2008 with 492,915 gallons being recycled through the Do-It-Yourself program. The total amount of used oil recycled statewide, which includes businesses and DIYer used oil, also increased by approximately one million gallons from 11,950,227 gallons in 2008 to 12,978,532 gallons in 2009.

Federal Facility

The Deseret Chemical Depot, located in Tooele County, is on schedule to begin closure in 2011 after it finishes the mission of destroying 45 percent of the nation's chemical weapons stockpile. Complete closure of the facility is expected to take several years. As of September 2010, approximately 84 percent of the mustard chemical agent has been destroyed. One hundred percent of all stockpiled GB and VX nerve agents in containers and munitions, which were stored at the Depot, have been destroyed.

Low-level Radioactive Waste Disposal

On the national front, Chem-Nuclear, LLC, a subsidiary of EnergySolutions, Inc., in Barnwell, South Carolina stopped taking waste from anyone outside of the Atlantic Compact on July 1, 2008. Chem-Nuclear, LLC, receives all classes (A, B, and C) of low-level radioactive waste. The U.S. Ecology facility at Hanford, Washington, serving the Northwest Compact (Alaska, Hawaii, Oregon, Washington, Montana, Wyoming, Utah and Idaho) also receives all classes of low level radioactive waste and partners with the Rocky Mountain Compact (Colorado, New Mexico and Nevada) in receiving limited amounts of low-level radioactive waste. A new facility, Waste Control Specialists in Texas has received a license to dispose of low-level wastes from Texas and Vermont as well as a separate disposal option for federal government wastes.



Volumes of waste received for disposal at EnergySolutions continue to decline from a peak 26.7 million cubic feet in 2005 to the current year. This volume represents Class A low-level radioactive waste, uranium mill tailings, and mixed waste.

Foreign Waste

On November 9, 2010, the 10th Circuit Court of Appeals ruled that the Northwest Interstate Compact on Low-Level Radioactive Waste has authority over EnergySolutions' low-level radioactive disposal site in Clive, Utah, and therefore could block the company from importing foreign waste.

At issue in the case was whether Utah could use its veto power as a member of the Northwest Compact. In May 2009, U.S. District Judge Ted Stewart in Salt Lake City sided with EnergySolutions, which maintained the Compact had no authority to prevent it from importing up to 20,000 tons of waste from Italy.

The court's decision is a moot issue in that EnergySolutions announced on July 14 that it won't pursue plans to import foreign radioactive waste for disposal in Utah. The company said it plans to shift strategy and profit from consulting with Italy and other nations about storing their own low-level radioactive wastes within their borders. The announcement ends

a three-year controversy of plans to import up to 20,000 tons of waste from Italy that would have been processed at a facility in Tennessee before disposed of at the Clive facility.

Governor Herbert welcomed the news. In a statement, he said: "The announcement by Energy Solutions that it will no longer pursue efforts to import foreign nuclear waste for storage at its Clive facility is welcome news for all Utahns. As Governor, I have opposed, and I continue to impose, the importation of foreign nuclear waste to Utah."

In 2007, EnergySolutions applied for a license to the Nuclear Regulatory Agency (NRC) to import up to 20,000 tons of waste from Italy's nuclear program, process it in a company-owned plant licensed in Tennessee and dispose of up to 1,600 tons of process residue at its disposal site in Tooele County, Utah. The Utah Radiation Control Board and Governor Huntsman opposed the move, contending that low-level radioactive waste disposal capacity in the United States is very limited and should be reserved for domestically generated low-level waste.

Depleted Uranium

On April 14, 2010 the Radiation Control Board approved a new rule that requires EnergySolutions to conduct a performance assessment before disposing of depleted uranium. Depleted uranium became an issue when the U.S. Department of Energy (DOE) announced in early December 2009 that it plans to ship 11,000 tons of depleted uranium (DU) from the Savannah River cleanup in South Carolina to EnergySolutions' low-level radioactive waste facility in Clive, Utah. Included in a pending license condition is a requirement that EnergySolutions must remove the waste if the site safety analysis demonstrates that depleted uranium could not be safely disposed at the landfill for at least 10,000 years. Governor Gary Herbert and DOE negotiated a deal that prevented the remaining shipments from coming to Utah pending a site-safety analysis.

DU is a by-product of the uranium enrichment process that becomes more radioactive over time. EnergySolutions sought to dispose of the waste before the Nuclear Regulatory Commission (NRC) completed a new rule on disposal of significant quantities of DU in three years.

Despite pressure from some environmental groups, NRC in 2009 decided against reclassifying DU as a "hotter" waste-a move which would have changed disposal requirements. DU is classified as a low-level (or Class A) radioactive waste. It has some commercial use. However, demand is currently

much less than the amounts generated. Disposal is the only option for the rest. Under federal law, the Department of Energy is required to accept DU from an NRC licensed uranium enrichment facility. DU can also be accepted by a licensed commercial disposal site. EnergySolutions' Clive facility holds a Class A radioactive waste license and currently has DU disposed at its facility.

Blending of Low-Level Radioactive Waste

On October 13, 2010 the NRC revised its position that provides the states an opportunity to pursue rule-making that would allow large-scale blending. The NRC directed staff to develop a revised Branch Technical Position regarding the circumstances under which large scale blending is acceptable. Until such time, licensing actions received by NRC or Agreement States for large scale commercial blending facilities should be reviewed on a case-by-case basis.

On April 13, the Radiation Control Board adopted a position paper on waste blending, noting that it is opposed to waste blending when the intent is to alter the waste classification for the purposes of disposal site access.

The issue of blending higher concentrated low-level waste (Class B and C waste) with lower concentration waste (Class A) waste has come to the forefront because of lack of disposal access for 36 states for Class B and C radioactive waste. One of the problematic low-level waste streams is ion exchange resins generated at nuclear power plants throughout the United States. The Nuclear Energy Institute and the Electric Power Research Institute have conducted studies on blending during the previous two years. These resins, small beads of plastic, remove radioactive material from waters used for cooling nuclear reactors. Depending on how often the resins are changed, they can be the higher classification B and C low-level wastes. NRC estimates that power plants throughout the United States generate roughly 85,000 cubic feet of resins annually. Class A waste makes up ninety percent of the annual resin production.

A proposal to blend ion-exchange resins from power plants at EnergySolutions Bear Creek Facility in Tennessee is under evaluation. Under this effort, Class B and C resins would be downblended to Class A waste and eventually shipped to the Clive facility.

Currently NRC only has guidance to address the blending of waste. Blending of waste typically occurs during cleanup of a site where lower and higher concentration of waste is blended

into a homogeneous final form. Blending of clean and concentrated soils for purposes of dilution to change waste classification is not allowed under the current guidance. Blended materials require disposal at a licensed low-level waste facility.

Uranium Mills

Denison Mines (USA) Corporation (formerly International Uranium Corporation), operates a mill in Blanding, Utah, where it extracts uranium from ores and alternate feed materials. The mill processed 144,434 tons of conventional Ore in 2009 and another 166 tons of alternate feed materials were processed in 2009. The Mill processed another 179,082 tons of conventional ore from January 1, through October 30, 2010 and another 281 tons of alternate feed material during the same time frame. The Facility has constructed a tailings pond in 2009 and is currently in use, and other pond is scheduled for completion towards the end of this year.

Uranium One Utah (formerly Plateau Resources) near Ticaboo, Garfield County has submitted a license amendment request to resume operations. The Division of Radiation Control is currently working through the technical issues regarding the amendment and is awaiting a response from Uranium One regarding certain technical issues. Another facility, Rio Algom in Lisbon Valley, southeast of Moab, is in the process of reclamation activities. The reclamation activities are completed and the Division of Radiation Control is waiting for the completion report to be submitted by the licensee prior to License termination.

The mill processed 44,136 tons of alternate feed material in 2007. Only 500 tons of alternate feed materials were processed in 2008 before switching to conventional ores. The Mill processed 250,746 tons of conventional ore in 2008 and 144,434 tons of conventional ore in 2009. The Mill has processed 92.17 tons of alternate feed material in 2009 up to September 30, 2009, and is expected to process a total of 119 tons of alternate feed material in 2009.

Cleaner Water

Utahns and countless visitors continue to enjoy safe drinking water and many relatively pristine waterways for numerous industrial, agricultural, and recreational purposes. Given that Utah is the second driest state in the nation, it goes without saying that water is a precious resource needed to maintain our communities and many aspects of our economy. Given its importance, water conservation efforts are critical, but so is the need to maintain the quality of water if this precious resource is to continue to meet the needs of current and future generations.

Significant strides have been made in protecting water resources since passage of the 1972 federal Clean Water Act (CWA). The vast majority of Utah's waters are of sufficient quality to meet the uses required of them, but 30 percent are partially impaired. High levels of mercury continue to be found in some fish species in waters throughout Utah. The Division of Water Quality (DWQ) continually works toward not simply identifying problems, but searching for solutions for continued improvements in waters throughout the state.

DWQ continues to make strides to better understand the Great Salt Lake—a truly unique ecosystem that has worldwide significance as a refueling stop for millions of migratory birds. In 2008, DWQ passed a water quality standard that protects GSL birds from toxic selenium concentrations. During the 2010 general session, the Utah legislature adopted legislation that created the Great Salt Lake Advisory Council. The duties of the Council are to advise the Governor, the Department of Environmental Quality and the Department of Natural Resources on the sustainable use, protection, and development of the Great Salt Lake.

In 2010, DWQ worked closely with state, local and federal agencies to monitor popular recreational waters throughout the state, testing for the bacteria E. coli, a useful and reliable indicator of fecal contamination that can cause illness. On Memorial Day, tests showed elevated levels of E. coli at Salem Pond in Utah County. DWQ worked with local officials to post swimming advisories that informed the public of the risks and is undergoing an aggressive monitoring plan to remove or reduce the risks.

Chevron Oil Spill

On or about June 12, 2010, a leak from a crude oil pipeline operated by Chevron Pipeline Company began discharging crude oil into Red Butte Creek near Red Butte Gardens adjacent to the University of Utah. Estimates now show that about 766 barrels of oil were released into the Creek. Upon discovery of the leak, various emergency responders, agencies, organizations, and citizens were involved in responding to the leak. The pipeline was successfully shut down approximately 13 hours after the leak started.

The Division of Water Quality (DWQ) immediately began conducting water quality sampling at various locations along Red Butte Creek and the Jordan River and started to assess the environmental impact the spill had on water quality and aquatic wildlife. A link on DEQ's website was created to inform the public of the results of the monitoring and other important information related to the spill. DWQ also took a major role alongside Salt Lake City, Salt Lake Valley Health Department and EPA in the Unified Command established for the incident.

DWQ has reviewed every cleanup action plan, and has been intimately involved in the process of cleaning up Red Butte Creek. A Notice of Violation was issued to Chevron by DWQ on July 15th. DWQ will continue to work with Chevron and the Unified Command to ensure through long term monitoring and restoration, the environments affected by the spill are restored as much as possible to the biological, chemical and physical conditions they were in before the spill.

Protecting, Maintaining & Restoring Utah's Waters

Nationwide, all waters are classified with numerous beneficial uses that reflect the services that each waterbody provides to society and the environment. In Utah, these uses include protection of aquatic organisms (fish and other important organisms upon which they depend), recreational uses, agricultural uses, and drinking water sources. Standards, developed with numerous scientifically rigorous studies conducted over the past 30 years, are applied to each of these uses and represent the core of Utah's efforts to ensure that healthy waters can continue to be enjoyed by all. Simply put, standards are the rules that establish pollutant concentrations that ensure protection of the beneficial uses of all waters.

Federal law requires states to carefully revisit their water quality standards every three years. In 2008, DWQ undertook this "triennial review" and proposed numerous changes to our water quality standards based on the recommendations of a stakeholder workgroup representing the interests of the environment, industry, and agriculture. EPA approved most of the proposed changes, but some provisions were rejected in response to a Federal Court ruling in Kentucky. DWQ is in the process of working with stakeholders to make immediate changes to the rule to comply with the ruling, and to develop a detailed implementation strategy for elements with the potential to place unreasonable regulatory burdens on industry.

Measuring Current Conditions

The federal CWA requires that Utah monitor current conditions and water quality trends for all 14,250 miles of rivers and streams and nearly 3000 lakes and reservoirs. To accomplish this task, DWQ implemented a Probabilistic Survey in the fall of 2009, incorporating a random site selection and biological indicators to better and more efficiently assess all waters of the state. To increase its capacity and network of monitoring locations, DWQ intends to expand partnerships with other state and federal agencies, broadening its cooperative monitoring to include other groups such as citizen monitors with the formation of a Statewide Monitoring Council. DWQ also received over $170,000 in federal funds to assist with monitoring efforts, which continues to become a growing need as Utah's population expands. To qualify for these funds on a yearly basis, DWQ developed a 10-year strategic monitoring plan in 2009 and began implementing the strategy in the fall of 2009.

The monitoring information is included in a biennial report to Congress that evaluates whether water quality is sufficient to maintain their uses. Development of this report, required under section 303(d) and 305(b) of the Clean Water Act, involves analysis and interpretation of thousands of data points, which must be placed in context of local beneficial uses and water quality standards. This process allows DWQ to identify "impaired" waters that are in need of improvement. Trends in water quality are also evaluated in this report, which measures the progress made in protecting Utah's waters. DWQ recently completed a draft of this *Integrated Report*, which will be available for public comment in early 2010. New in 2009 are mathematical models that allow DWQ to more efficiently and effectively evaluate the overall condition of these waters.

Proper Medication Disposal Success

In 2010, the Division of Water Quality (DWQ) collected over 2100 pounds of unused medications through 15 "Clean Out Your Medicine Cabinet" medication take-back events co-sponsored by various agencies and businesses throughout the state that offer Utahns a chance to discard their unwanted drugs safely. Additionally, DWQ assisted the federal Drug Enforcement Administration with their first ever National Prescription Drug Take Back Day which resulted in the collection of an additional 3,000 pounds of unused medications.

DWQ's Proper Medication Disposal Grant program provided $1,000 grants to law enforcement agencies to establish a "Drug Collection for Proper Disposal" program that has resulted in 55 locations throughout Utah where highly secured collection bins are placed in the lobbies of law enforcement stations where consumers bring unwanted medications and drop them in the box. The materials are then incinerated at a DEQ permitted facility. Grant funding was depleted in 2010, however, Congress passed the "Secure and Responsible Drug Disposal Act of 2010" offering hope that proper medication disposal options will increase.

The reason it's so important to properly dispose of medications is that flushing medicines down the toilet or sink enter the water because wastewater treatment plants are not designed to remove them. Evidence of the medication's harmful effects has surfaced in our waterways.

Putting medicines in the garbage or keeping them in an unlocked medicine cabinet create an invitation for abuse. Studies show that one in five teens report intentionally misusing someone else's prescription drugs to get high. Many of these are obtained by raiding a medicine cabinet or obtaining them from a friend. Local health departments welcome the idea of collection bins. Because of the strict laws governing the handling of prescription drugs, the take-back collection programs must be administered by law enforcement agencies. Otherwise, the options of disposal of drugs are limited to the trash, if it is mixed with kitty litter or coffee grounds and put in a sealed container before throwing them away. View the Medication Disposal Web page for more information.

Improving Utah's Waters

Once impaired waters are identified, the next challenge is to determine the sources of impairment and how to limit and control them to restore all of the water's beneficial uses. This is accomplished through a water quality study required by the Clean Water Act called a "Total Maximum Daily Load" (TMDL). A TMDL study calculates the maximum amount of pollution a body of water can receive and still meet water quality standards.

DWQ partners with many other agencies, organizations and stakeholders such as the Division of Wildlife Resources, Utah Department of Agriculture and Food, and Conservation Districts to combine resources in implementing the watershed protection program. An example of that effort is the Utah Nonpoint Source Pollution Management Program, which helps landowners obtain financial assistance to implement water quality improvement projects on private lands.

Several watershed studies were completed in 2010 that outline the causes and sources of impairments as well as actions needed to restore water quality. Studies were completed for Cutler Reservoir in Cache Valley, Pariette Draw in the Uintah Basin and East Canyon Creek and Reservoir in Summit and Morgan Counties in cooperation with local, state and federal stakeholders.

Also in 2010, DWQ completed several intensive investigations on streams and lakes with high E. coli concentrations, a type of bacteria that indicates fecal contamination. Streams and lakes were screened for sampling based on their level of recreational use. Popular swimming areas have a greater risk of E. coli contamination and potential illness. Two waterbodies in particular, Salem Pond and the North Fork of the Virgin River, were identified as at risk and posted accordingly to inform the public of the potential heath risks. Investigations on the sources of contamination and plans for addressing them are ongoing in coordination with the local health department and land management agency respectively.

Permitting Surface Water Discharges

Another way DWQ protects the quality of our waters is by issuing permits to all entities that discharge pollutants to surface waters, including: discharges of domestic and industrial wastewater, and more diffuse sources like storm water. These permits establish allowable concentrations of pollutants and monitoring requirements to ensure that industry can continue to operate without degrading the uses of Utah's waters. DWQ utilizes an inspection program coupled with review of water quality data from each discharger to ensure that the terms of these permits are followed. Also, a careful review of each permit is conducted every five years to accommodate growth or respond to unforeseen environmental consequences of these discharges.

Numerous studies have identified storm water as one of the most significant threats to water quality in suburban and urban areas. Federal law requires that some industrial facilities and construction projects develop plans to minimize stormwater problems and apply for a permit from DWQ who ensures compliance. Currently there are approximately 1,108 active construction storm water permits and 570 presently active industrial storm water permits. Storm water permits are also required for municipal separate storm sewer systems that serve communities with more than 10,000 people and a population density of at least 1000 people per square mile. These permits require that DWQ works with communities to develop a comprehensive storm water management program that evaluates potential sources of stormwater pollution, and then establishes ordinances and public outreach efforts to minimize potential water quality problems. Currently 78 communities in Utah have stormwater permits that have been completed.

DWQ currently oversees 127 domestic and industrial entities that have individual permits to discharge treated industrial or domestic wastewater in Utah's waters. These include industries or cities and towns which have treatment facilities that discharge effluents to surface waters. Another 160 specialty permits have been issued, which cover discharges from activities such as coal mines, construction de-watering and pipeline hydro testing projects, fish hatcheries, drinking water plants, ground water remediation projects, biosolids (sewage sludge) processing projects, and industrial pre-treatment facilities. In addition there are 56 permits for "Concentrated Animal Feeding Operations (CAFO)," which will be discussed in a separate section of this report.

Permits typically define a sampling schedule that allows DWQ to ensure that the discharge does not impair the beneficial uses of the receiving water. On average, there was a 94 percent compliance rate for all the regulated domestic and industrial facilities in 2009.

New Dishwashing Detergent Law Goes Into Effect

The dishwashing detergent you buy will no longer contain high levels of phosphorus as a result of a new law that took effect July1.

The 2009 Utah Legislature passed House Bill 303 to help prevent phosphorus from being discharged into Utah's rivers, lakes, and streams through publicly-owned wastewater treatment plants and individual septic tank systems. Random inspections will be performed at retail outlets which sell dish detergent in order to determine compliance. Retailers who have not removed these detergents will be notified and can ultimately face fines if they fail to meet the legal intent.

The law, which has the support of the Utah Food Industry Association and Utah Association of Special Service Districts, is part of a nationwide effort to reduce phosphorus levels in our nation's waters. Utah joins 16 other states which have enacted similar laws.

Before

After

Phosphorus helps spur the growth of algae which clogs waterways and depletes the oxygen needed for fish to survive. Unsightly algae blooms also reduce the appeal of Utah's recreational waters and raise the cost of treating drinking water.

"The reduction in phosphorus entering the waterways is a huge benefit. It's good for Utahns and Utah's environment" said Walt Baker, director of the Division of Water Quality. For more information about the law, visit:

http://www.waterquality.utah.gov/phosphorus/index.htm

Groundwater Protection

The Groundwater Protection Section in the Division of Water Quality administers two primary programs to protect the quality of Utah's groundwater resources:

- the federal Underground Injection Control (UIC) Program; and,
- the State Ground Water Discharge Permit Program.

The UIC Program protects underground sources of drinking water by reviewing and approving numerous small-scale injection activities such as storm water dry wells, ground water remediation wells, and domestic underground drain fields. A major effort is underway to identify and close motor vehicle waste disposal wells that have been banned by EPA. The UIC Program also issues permits for aquifer storage and recovery operations to allow municipal water districts to capture spring runoff water and store it in drinking water aquifers for future use. The UIC Program Coordinator recently assembled a diverse work group to develop rules for the capture, transportation, and geologic storage of carbon dioxide into deep saline aquifers in response to 2008 legislation. The recommended rules will be presented to the legislature by January 2011. A UIC permit will be issued to Magnum Solutions in late 2010 for the construction of four new Class III solution mining injection wells in Millard County near Delta. The injection wells will be used to create four natural gas storage caverns in a bedded salt deposit with each cavern having a gas storage space of 9.8 million barrels. Each storage cavern will take approximately two years to complete. Regulatory oversight of the natural gas storage operation will be transferred to the Division of Oil, Gas and Mining after completion of the storage caverns.

The Ground Water Discharge Permit Program protects ground water quality by issuing permits to agricultural and industrial facilities that have the potential to discharge pollutants into ground water. Agricultural facilities include large concentrated animal feeding operations such as dairies and swine, and industrial facilities include fossil fuel power plants, mining and processing operations for copper, gold, phosphates, tar sands, and uranium.

The two primary elements of ground water discharge permits are:

- best available technology to minimize subsurface discharge; and,
- groundwater quality monitoring.

Currently there are 36 active groundwater discharge permits regulating about 90 facilities. This program also reviews aquifer classification petitions for approval by the Water Quality Board, which may used as a planning tool by local governmental agencies. The Board has approved 11 aquifer classifications throughout the state including the recent Salt Lake Valley classification.

Utah's Wastewater Project Assistance Program

The Utah Wastewater Project Assistance program provides funding for high-quality water and wastewater projects through the State Revolving Fund (SRF), Utah Wastewater Loan Fund, and Hardship Grant Fund. To date, this program has provided over $510 million in loans and $42 million in grants to communities to plan, develop, and construct wastewater treatment, pumping and conveyance facilities. Recently, this program expanded to provide grants for nonpoint source projects, providing 30 grants to individuals and agencies for nonpoint source projects in 2010 alone.

The Water Quality Board received almost $20 million in stimulus funding through the American Recovery and Reinvestment Act of 2009 (ARRA). To date, over $15 million of this amount has been spent constructing worthwhile wastewater projects.

Great Salt Lake

The Great Salt Lake (GSL) is a critical resource to our economy, supporting multimillion dollar commercial/industrial uses such as brine shrimp harvesting and mineral extraction. Further uses that have significant economic impacts include waterfowl hunting, tourism and other recreational practices. The lake is also important to the environment, providing critical habitat to millions of birds. Overall, the lake is a truly unique resource to Utah.

However, the lake's unique characteristics also make it difficult to apply water quality practices employed elsewhere to ensure that the many benefits the lake provides can continue to be enjoyed by future generations. Developing programs to protect the lake continues to be a DWQ priority.

The high salinity of GSL prohibits application of water quality standards applied elsewhere. In 2008, the culmination of a four-year-long process was completed to develop a selenium standard based on bird egg tissue concentrations. This effort was overseen by a committee, composed of diverse stakeholders, who in turn oversaw a science panel of international experts of selenium toxicity. The standard was adopted by the Water Quality Board. Both the standard itself and the open collaborative process used to generate the rule have received national attention.

The selenium standard, while a good start, only represents the first step in developing a water quality program for the GSL. DWQ worked with EPA and others to develop a framework that identifies methods to assess the overall condition of the GSL ecosystem. Also, DWQ is currently involved in a multi-agency collaboration that is attempting to better understand the overall effects of mercury in the lake; this study also hopes to quantify mercury sources and estimate the potential for rehabilitation in areas where mercury levels are high. In addition, DWQ is in the final phases of recommending an assessment method for the impounded wetlands surrounding the GSL, which will allow DWQ to measure the overall health of these critical nesting habitats.

While all of these studies are ongoing, many of the results are already becoming available. 2010 promises to be a landmark year in taking significant strides forward with GSL water quality programs. For more information, visit the Water Quality Management Web page.

Great Salt Lake Advisory Council

During the 2010 general session, the Utah legislature adopted House Bill 343 that created the Great Salt Lake Advisory Council. The duties of the Council are to advise the Governor, the Department of Environmental Quality and the Department of Natural Resources on the sustainable use, protection, and development of the Great Salt Lake. The Council is composed of 11 members representing industry, conservation, publicly owned treatment works, municipal and county interests. For more information, visit the GSL Advisory Council Web site.

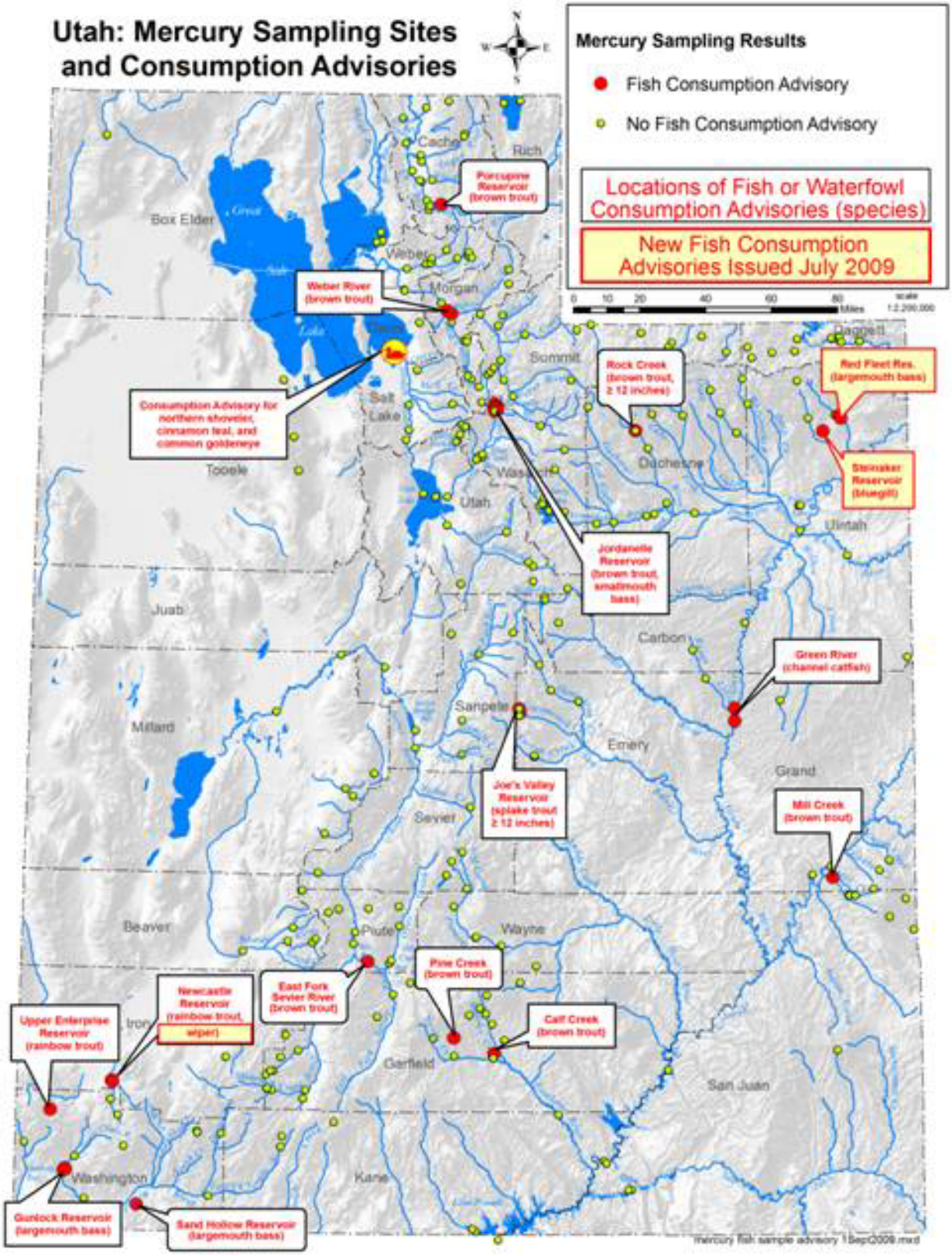
Mercury in Fish

Since 2000, the Division of Water Quality has tested fish for mercury contamination in more than 300 bodies of water in Utah. Fish in 16 of those waterways tested (only 5 percent of waters tested) have elevated levels of mercury. Annually, new and revised fish consumption advisories are issued if warranted. When mercury is deposited in waterways, bacteria convert it to methylmercury, which can build up in the tissue of fish and other wildlife, which may be eaten by wildlife and people. Exposure to mercury occurs most frequently through eating contaminated fish.

The most recent fish consumption advisories issued in 2009 recommend that pregnant woman and children should not eat Largemeouth Bass from Red Fleet Reservoir or Bluegill from Steinaker Reservoir. Adults should limit their consumption of these fish to two 8-ounce servings per month and no one should eat Wiper from Newcastle Reservoir. For a complete list, visit the Fish Advisory Website.

Fish tissue testing will continue in 2010. The Division of Water Quality worked closely with the Division of Wildlife Resources to develop a sampling plan that will target Blue Ribbon Fisheries and regions with very little mercury data, as well as refine existing advisories.

Fish have been collected and analyzed in the south portion of Lake Powell and DWQ is attempting to leverage the funds to collect and process samples from the northern portion. In the GSL, research to analyze water, sediment, waterfowl and organisms in their food chain is near completion. The Division of Air Quality has purchased and operates a mercury wet deposition monitor, a mercury ambient air concentration


Utah: Mercury Sampling Sites and Consumption Advisories
Mercury Sampling Results
Fish Consumption Advisory
No Fish Consumption Advisory
Locations of Fish or Waterfowl Consumption Advisories (species)
New Fish Consumption Advisories Issued July 2009
Porcupine Reservoir (brown trout)
Weber River (brown trout)
Consumption Advisory for northern shoveler, cinnamon teal, and common goldeneye
Rock Creek (brown trout, ≥ 12 inches)
Red Fleet Res. (largemouth bass)
Steinaker Reservoir (bluegill)
Jordanelle Reservoir (brown trout, smallmouth bass)
Green River (channel catfish)
Joe's Valley Reservoir (splake trout ≥ 12 inches)
Mill Creek (brown trout)
East Fork Sevier River (brown trout)
Pine Creek (brown trout)
Calf Creek (brown trout)
Newcastle Reservoir (rainbow trout, wiper)
Upper Enterprise Reservoir (rainbow trout)
Gunlock Reservoir (largemouth bass)
Sand Hollow Reservoir (largemouth bass)
Box Elder
Cache
Rich
Weber
Morgan
Summit
Daggett
Salt Lake
Tooele
Wasatch
Duchesne
Utah
Uintah
Juab
Carbon
Sanpete
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monitor, and a particulate mercury monitor at the Air Monitoring Center in Midvale, UT. Data has been collected for the last 2 years. In addition, the Department of Environmental Quality has contributed funds to a pilot mercury research effort that has resulted in a $200,000 grant award by EPA Region 8. This research is a collaboration between the University of Utah, United States Geological Survey and EPA. The research is aimed at identifying and quantifying mercury sources in and around the Great Salt Lake. These GSL studies were prompted by U.S. Geological Survey studies that found some of the highest levels of water column mercury in the country and subsequent investigations that found high concentrations in some duck species.

DWQ is facilitating the Statewide Mercury Work Group to coordinate and collaborate mercury studies and investigations ongoing in Utah. Stakeholders from a broad base of State, federal, and non-profit agencies, industries, and the public, participate to maximize the group's effectiveness. There is collaboration with the Great Basin Regional Mercury Work Group to solve these important issues that affect our waters.

Animal Feeding Operations & Concentrated Animal Feeding Operations

The Animal Feeding Operations (AFOs) Committee is a partnership of the Division of Water Quality, Utah Department of Agriculture and Food, Utah Farm Bureau, Utah Association of Conservation Districts, Utah State University (USU) Extension, United States Department of Agriculture Natural Resources Conservation Service, United States Environmental Protection Agency (Region 8), and Utah's animal producer groups.

In 2001, the AFO/CAFO Committee developed the Utah Strategy which is a compliance assistance agreement to help animal feeding operations with compliance to environmental regulations to improve water quality. AFOs are animal production facilities where animals are confined, such as dairies and feedlots.

On Dec. 31, 2008, the Utah Strategy expired; a draft strategy has been prepared to continue the Utah Strategy work. In addition, DWQ has entered into two agreements to provide funding to Utah Farm Bureau and the Utah Association of Conservation Districts to continue compliance assistance. Also, DWQ entered into a contract with Utah State University Extension to provide educational outreach to AFOs in the state.

Working through the Utah Strategy and the new contracts, experts of the AFO Committee partnership provide assistance to AFOs through compliance and technical assistance. The agricultural partners conduct on-farm assessments, prepare nutrient management plans, help design and fund new waste containment structures, and assist in the implementation of proper management practices at AFOs.

The partners assist producers in obtaining cost-share and loan funding to address manure management problems.

As of December 31, 2009, nearly 3,000 facilities have been assessed. Of those, 393 are AFOs with compliance problems. Since 2001, 98 percent of the problem AFOs have had management plans prepared and 92 percent are in full compliance. More work needs to done, but the Utah Strategy, AFO Committee, and the agricultural partnership have been very successful in improving water quality in Utah by reducing water quality impacts by AFOs and CAFOs. This success is a result of the cooperation and expertise of the AFO Committee organizations and producer groups.

In 2010 and 2011, DWQ will amend Utah Administrative Code and will issue a new Utah Pollutant Discharge Elimination System CAFO General permit to reflect federal CAFO Rule changes. Compliance assistance and educational outreach will be provided by DWQ and the agricultural partners. This will include compliance worksheets for producers, educational workshops throughout the state, and information on the USU Producer's Web site.

Drinking Water

The vast majority—99.91 percent—of Utahns drink water from approved public water systems, while a small number of individuals and businesses get their drinking water from private wells. Most public drinking water systems get their water from groundwater sources. DWQ helps protect groundwater sources from being contaminated by pollution (see below), whereas Utah's Division of Drinking Water (DDW) helps ensure that all of our citizens can enjoy clean and healthy drinking water by assisting with testing treatment and delivery systems, conducting inspections of water systems, and by enforcing the Drinking Water Source Protection program. These programs are a success as 91.42 percent of the community public water systems meet all health-based standards of the Safe Drinking Water Act.

DDW's programs are intended and designed to protect people's health to help ensure that Utah's citizen's are drinking safe water. Through a grant from the Utah Department of Homeland Security, DDW assists water systems in developing Emergency Response plans and Vulnerability Assessments. The training includes protecting sensitive information, protecting computer systems, how to develop tabletop exercises, NIMS certification, website awareness, and Water Agencies Response Network (WARN) membership.

Over 2,400 water distribution and water treatment certificates have been issued through testing by the DDW. Once an operator successfully passes an exam the operator is required to receive continuing education in order to maintain and renew their certification. As a result of the professionalism of the water operators in the state, water systems have fewer compliance problems, and the number of approved systems has increased.

Division of Drinking Water has a plan review and operating permit process to ensure proper design and construction of public drinking water facilities such as water treatment plants, wells, springs, storage tanks, and pumps. In Fiscal Year 2010, the Division of Drinking Water staff conducted engineering reviews of public drinking water projects, and issued 290 plan approvals, 214 operating permits, and 95 exception-to-rule letters.

Public Drinking Water Systems

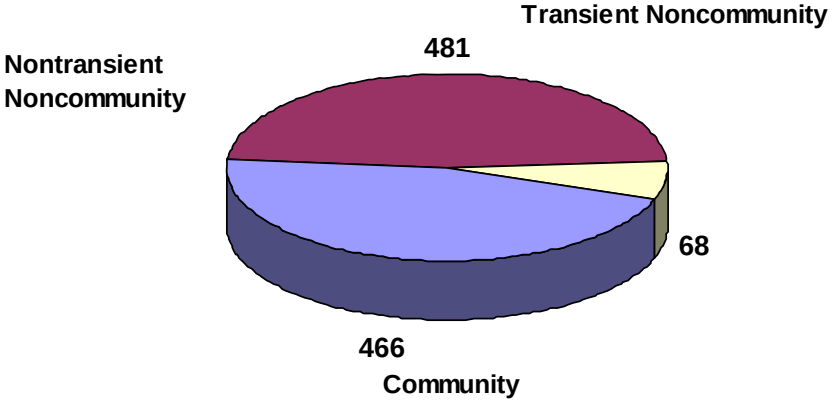
Utah has 1015 water supply systems. A public water system is defined as any water system, either publicly or privately owed, which provides drinking water for 15 or more connections, or 25 or more people, at least 60 days of the year. These include community systems serving people year round; non-transient non-community water systems that serve workers at a factory, and transient non-community water systems such as seasonal campgrounds or highway rest stops.

Utah's Water Loan Programs

In 2010, the Drinking Water Board funded 37 projects, totaling $38.4 million through the State Revolving Fund. These loans are being used to help construct new water treatment plants, replace aging water pipes and storage tanks, develop new sources of drinking water (wells and springs), and perform planning studies to determine the community needs and best alternatives to correct system problems. Since 1983, 356 projects have been funded at a cost of $245.1 million.

Out of the 37 projects funded in Fiscal Year 2010, 14 projects totaling over $18 million are a direct result of the stimulus funding passed by Congress earlier this year, called the American Reinvestment and Recovery Act of 2009 (ARRA).

Active Public Water Systems in Utah



Beaver City Water Improvement Project

Beaver City received funding from the American Recovery and Reinvestment Act to replace approximately 62,500 feet of deteriorating 2-inch and 4-inch, 60-yr old galvanized steel and cast iron waterlines. These old pipes caused a significant amount of water loss—174,514,607 gallons of water per year were unaccounted for. Beaver City estimated that approximately 80% of the unaccounted water would be saved annually by replacing the identified leaking waterlines. Based on the water and energy savings that would result from this project, it was determined to be a green infrastructure project. Upon completion of the project, cost savings from the reduction in pumping and waterline breaks, along with increased revenue from replacing worn service meters will save a total of $134, 759 per year.