



UTAH DEPARTMENT *of*
**ENVIRONMENTAL
QUALITY**

2018 INTERIM SESSION
WATER TOUR



State Revolving Funds

Utah's Clean Water SRF and Drinking Water SRF programs provide low interest rate loans to communities for water quality and drinking water infrastructure projects. Grants from the EPA with a 20% state match are invested in related infrastructure by the Water Quality Board and the Drinking Water Board.

These Boards also administer limited Hardship Grant Programs to communities with demonstrated economic hardship and otherwise would be unable to finance clean water and drinking water projects.

SRF Past project assistance

Utah's CWSRF has provided nearly \$1 Billion in support of \$1.5 Billion in wastewater related infrastructure funding. Utah DWSRF has provided \$395 Million in drinking water related infrastructure funding.

SRF future outlook

The Statewide Infrastructure Plan (SWIP) and the SRF needs surveys estimate a future wastewater infrastructure need of \$4 Billion by 2040 and \$6 Billion in drinking water infrastructure need by 2040. These investments further DEQ's mission of safeguarding and improving Utah's Water through improved facilities and technology to meet the Utah's growing water needs now and into the future.

SRF ongoing challenge

- Capitalization funding declines while new infrastructure costs are escalating dramatically.
- Important projects are delayed and emergencies are under served because of federal funding requirements, restrictions, and grant fund deficiencies.
- Communities are unprepared and underfunded to satisfy their long-term infrastructure needs.

What is needed

- Remove Water Development Security Fund (UCA 73-10c-5) funding cap on DEQ to better align growing economy with growing water infrastructure financing needs.
- Assist SRF programs to provide affordable and flexible funding.
- Provide additional money for emergency and hardship funding program.
- Support long-term financial planning by counties and cities.

August 2018

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Utah Nonpoint Source Management Plan for Abandoned Mines

Background Information

- Abandoned mines are facilities or sites where no permit was filed with the State or federal land managing agency
- Utah's Abandoned Mine Reclamation has closed approximately 6,000 of the estimated 17,000 mine openings across Utah
- Most mining-related NPS pollution results from abandoned mines. Possible negative impacts to water quality include: heavy metal contamination & leaching, soil erosion, and acid main drainage
- 15% of rivers assessed in Utah are impaired due to metals contamination (2016 303(d) List)
- Sources of metals include: mines, processing plants, waste rock disposal areas, haul roads, and tailings

Program Goals

1. Watershed reconnaissance studies
2. Protect surface & groundwater
3. Build long-term partnerships
4. Educate & inform

Program Details

- Mining Technical Advisory Committee of the Utah Nonpoint Source Task Force oversees this plan. It was updated in 2018.
- Seek solutions reliant upon technologies that are practical and cost effective
- Best Management Practices include: hydrologic controls and passive treatment technologies
- Examples of NPS funded mine projects: Little Cottonwood Creek (Columbus Rexall mine), Mineral Basin in American Fork Canyon, and Silver Creek outside of Park City

Division of Water Quality
Mission:

*Protect, maintain and enhance
the quality of Utah's surface
and underground waters for
appropriate beneficial uses*

*Protect the public health
through eliminating and
preventing water related health
hazards which can occur as a
result of improper disposal of
human, animal or industrial
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consideration to the economic
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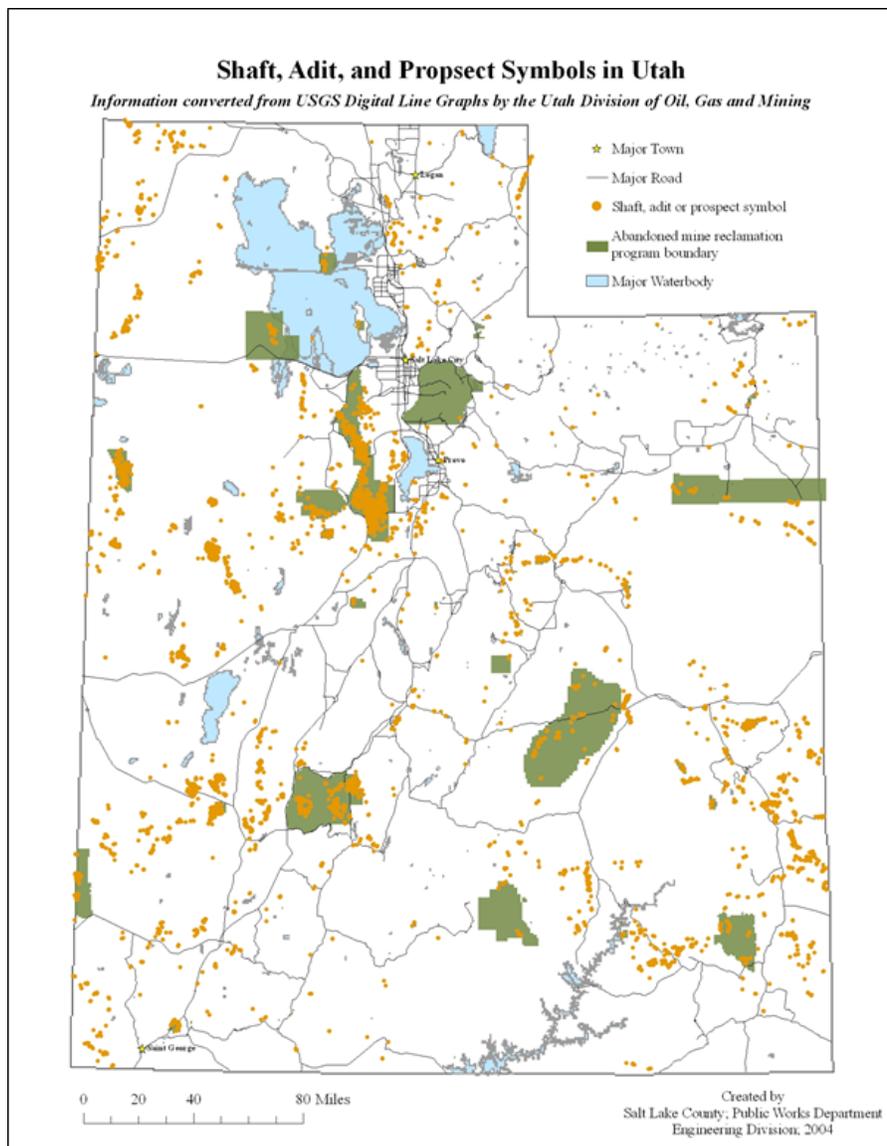
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Figure 1. Shaft, Adit, and Prospect Mines in Utah.





Utah Nonpoint Source Management Program Overview

Program Goal

Protect, restore, and enhance the waters of the State of Utah through the reduction of nonpoint source (NPS) pollution by means of voluntary implementation of best management practices.

- Nonpoint sources of water pollution include agricultural runoff, stormwater, septic systems, degradation of riparian areas, hydrologic modifications, and upland soil erosion.
- The Nonpoint Source Pollution Program receives ~\$1,700,000/yr to help address NPS pollution statewide using a voluntary, incentive based approach, working with private landowners and other state, federal, and local agencies to implement best management practices.
- Since 1990 the NPS program has assisted over 540 projects totaling more than \$39.1 Million in NPS grants. This is made up of \$28.1 million in federal funding and \$11 million in State funding.
- For every \$1 of NPS funding invested, \$4 of additional funding or match is generated to implement these projects.
- 44% of NPS grants are used to restore riparian areas throughout the state on private and public property. An additional 12% is used to assist agricultural producers decrease NPS pollution originating from their operations. The remaining funding is used to fund a wide variety of other types of water quality projects including educational efforts.

Example: Wallsburg Watershed

- The Main Creek watershed contributes 8% of water flow to Deer Creek Reservoir yet accounts for a disproportionate 17% of the Total Phosphorous (TP) load.
- In 2010, Main Creek's uses were identified as impaired due to elevated levels of *E. coli* (recreation) and water temperature (cold water fishery).
- UDWQ partnered with stakeholders, including the Wasatch Conservation District, to develop a watershed plan to address these water quality concerns (Wallsburg Coordinated Resource Management Plan, 2012).
- Since 2013, over 16 agencies and stakeholder groups contributed over \$2.5 million to restore water quality within the watershed. UDWQ has contributed over \$700,000 (2013 – 2017) through the NPS program.
- Recent monitoring data shows over a 50% decrease in both *E. coli* and TP pollutant loading since project work commenced. In 2014, Main Creek's temperature impairment was removed on 303(d) List due to a decrease in water temperature.

Division of Water Quality
Mission:

Protect, maintain and enhance the quality of Utah's surface and underground waters for appropriate beneficial uses

Protect the public health through eliminating and preventing water related health hazards which can occur as a result of improper disposal of human, animal or industrial wastes while giving reasonable consideration to the economic impact

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Drinking Water Source Protection and Extraterritorial Jurisdiction

Drinking Water Source Protection

Protecting wells, springs, and surface water intakes from contamination is vitally important in a state as arid as Utah. The Source Protection program requires Public Water Systems (PWSs) to:

- Delineate source protection zones for their sources
- Identify potential sources of contamination
- Plan strategies to protect sources from contamination

Extraterritorial Jurisdiction

Section 10-8-15 currently grants all cities, regardless of class, the authority to protect their surface and groundwater sources, within or without the city limits, from injury and pollution, for a distance of 300 feet on each side of the source and 15 miles upstream.

- Cities of the first-class (population > 100,000) have the added authority to protect their entire watershed(s).
- Over 90 municipalities have enacted drinking water source protection ordinances using this authority.

Next Step: A working group of subject matter experts has been appointed to study the issue during the 2018 interim session and will provide recommendations to the Executive Director of DNR and to the Natural Resources, Agriculture, and Environment Interim Committee by mid-September 2018.

Division of Drinking Water Mission:

*To protect public health by
ensuring the quality and
quantity of Utah's drinking
water supply*

*To ensure the continued
protection of drinking water
sources in Utah*

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Septic Systems in Ground Water Recharge Areas

Increasing growth in sensitive areas

- Valley benches and high mountain valleys, where many culinary sources are recharged, are increasingly desirable for development.
- Rapid growth is occurring across the state in areas without public sewers and where septic systems are required (see Table 1).
- Aging septic systems, like any other aging infrastructure, have higher costs and risks of failure, contributing to pollution of aquifers.

Impact on water quality and drinking water sources

- By design, septic systems introduce biological and chemical contaminants to the subsurface for treatment and disposal.
- Septic systems rely on natural processes to safely treat these pollutants; high wastewater volumes and concentrated development can undermine this treatment.
- Keeping source waters free from contamination is vital for protection of current and future uses including drinking water.
- Growth and development have increased pressure on public water systems to protect their culinary sources.
- More than 90 municipalities and 16 counties have passed land use ordinances prohibiting certain activities, including septic systems, within drinking water source protection zones.
- Necessity to protect drinking water sources often clashes with citizens' rights to develop or build on their property.

Potential solutions

- Incentives for counties and water districts to evaluate regional septic system densities protective of water supplies, plan for quality growth, protect and manage important recharge areas and source waters for a prosperous and healthy Utah.
- Support public management of septic systems in recharge areas with adoption of septic tank density studies.

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Typical Septic System



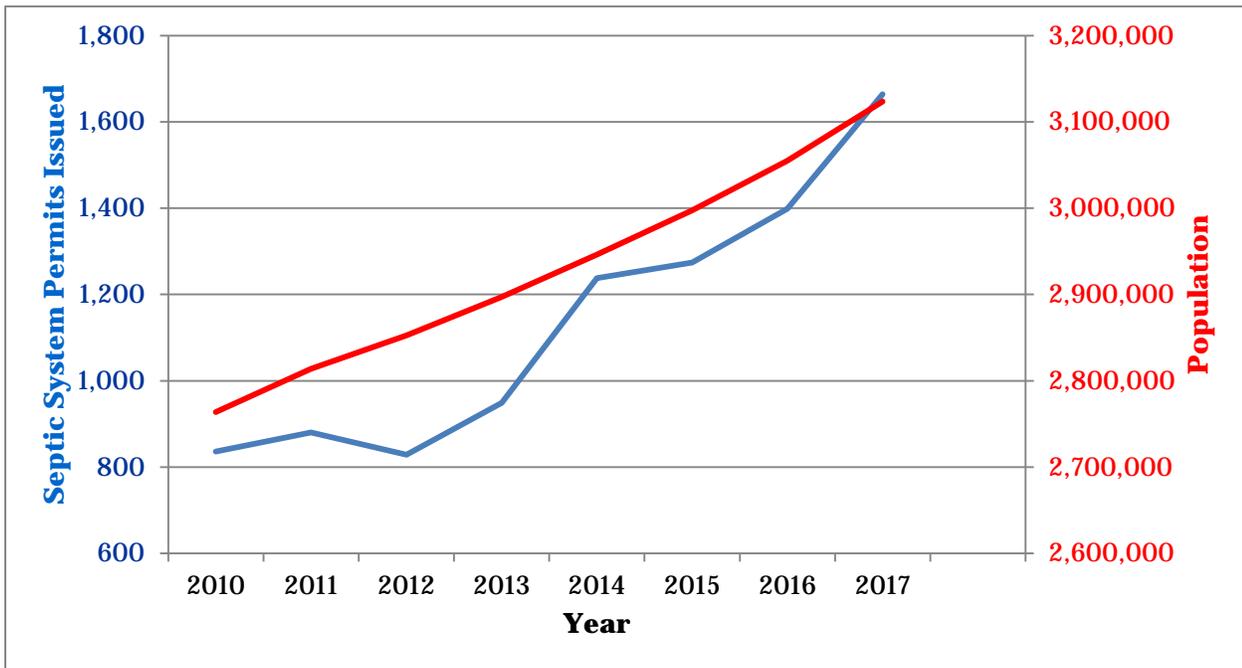
- Encourage Alternative technology and clustered alternative septic systems that are adaptable to future community development needs

Table 1: Total number of septic systems approved in Utah, 2010-2017

Year	2010	2011	2012	2013	2014	2015	2016	2017
Number of Septic Systems Permitted	836	880	829	949	1,238	1,274	1,399	1,664

Data obtained from local health department annual reports to the Utah Department of Environmental Quality

Table 2: Septic system permits issued compared to population growth in Utah, 2010-2017



Data obtained from:

Utah's Long-term Demographic and Economic Projections (2017. University of Utah Kem C. Gardner Policy Institute.) Retrieved Thursday, August 9, 2018 from the Web site: <http://gardner.utah.edu/wp-content/uploads/Kem-C.-Gardner-County-Detail-Document.pdf>

2010 Census (2010. U.S. Census Bureau.) Retrieved Thursday, August 9, 2018 from the Web site: <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>

Utah's Population (2014. Office of Legislative Research and General Counsel.) Retrieved Thursday, August 9, 2018 from the Web site: <https://le.utah.gov/lrgc/briefings/PopulationBriefing2014.pdf>



Determining Public Drinking Water System Boundaries

Safe Drinking water is an expectation.

Utah residents and visitors have the expectation and right to safe drinking water from every tap throughout the state. Especially, when the water is provided by a public water system:

- No matter the size of the system
- Whether they live in a single family home, condo or apartment complex
- Whether they are in their home, their place of work or recreating at one of our recreation sites served by a public water system.

What is a public water system?

Any water served through a piped conveyance to 25 people for 60 days or greater is public.

Identifying GAPS in public health protection

Ensure safe drinking water is provided where the public consumes or uses the water to avoid exposure to waterborne illness.

- Boundaries of the public water system (terminus) have legally been established as the **meter** or **property line**. Situations behind large bulk meters that cause public health issues and compromise the public's expectation of safe drinking water include:
 - Treatment of water other than in an individual home
 - Large developments (larger than a city block) with distribution pipes not maintained by public water system
 - Large Storage vessels other than those dedicated to fire protection.
- Proliferation of small-scale developments for which there are no infrastructure requirements.

Strategies to minimize public health GAPS

- Engaged in stakeholder workgroup to address this issue through a collaborative regulation process.
- Establish clear public water system boundaries (terminus).
- Work with local health and planning departments to prevent creation of new bulk metered connections, establish clear ownership, and ongoing responsible party at time of build out.

Next Step: Present rule language changes to the Drinking Water Board and set implementation schedule.

Division of Drinking Water
Mission:

To protect public health by ensuring the quality and quantity of Utah's drinking water supply

To provide construction standards for a safe and reliable drinking water infrastructure

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Lead in Schools

EPA Guidance and Oversight of lead in schools

2017 letter to state superintendent:

- Asks schools to sample for lead in drinking water
- Communicate results to parents, teachers, and staff
- Remediate in the event of a high result

2018 EPA lead action plan requests states to account for what we have done to protect children from exposure to lead in the drinking water at their schools.

Utah' Response to EPA request

- DDW worked with schools to conduct 2017 pilot study
 - 1,699 samples collected
 - 75% of schools participated
 - 92% had detectible levels of lead
 - 2% Over the EPA Action Level of 15 ppb
(Approximately 13,000 children)
 - 40% between 1 ppb and 15 ppb
- Data published at lead in schools website: leadinwater.utah.gov
- DDW assisted and advised remediation efforts
- Creation of a partnership for lead-free schools
- Distribution of lead in schools flier for 2018-2019 school year
- Published webinar for administrators and superintendents on lead in schools

Goals for Lead in Schools

- Create buy-in for flushing and sampling programs
- Develop a recommendation for schools to test for lead in water ongoing
- Determine who has authority to oversee ongoing program

Division of Drinking Water Mission:

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quantity of Utah's drinking
water supply*

*To ensure the health and
safety of Utah children
through establishing
measures to protect their
drinking water*

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Drinking Water Storage Requirement

Drinking Water Storage and Protecting Public Health

A public water system needs to operate properly and maintain adequate water pressure and supply even when its water source capacity cannot meet the peak demands placed on the water system.

- Providing adequate storage volume for drinking water is critical in protecting public health, especially in existing water systems with aging infrastructure that are susceptible to contamination.
- Providing adequate storage volume should be included in planning and design of future subdivisions or developments.

Drinking Water Storage

Utah's water systems are required to provide water storage for Equalization, Fire Suppression, and Emergencies:

- **Minimum Equalization Storage:** this volume provides storage needed to compensate for the difference between the source capacity and the peak demand of a water system
- **Fire Suppression Storage:** the required volume is determined by the local fire code official
- **Emergency Storage:** this volume is determined by an individual water system and is optional

Regulatory criteria for minimum storage vary from state to state. Utah sets the minimum equalization storage requirement at a value equivalent to an average day demand. However, each water system must evaluate its system demand pattern, source capacity and reliability, system configuration, and unique operation needs. In some cases, a water system's actual storage need may exceed the minimum volume required by the state.

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