Utah's Coordinated Action Plan for Water

Investing in Infrastructure

January 2022

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Released January 2022

Utah is committed to increasing the resiliency of our water supply by maintaining and improving our current water infrastructure, improving data collection, and by investigating opportunities for new water supply and storage.

Introduction

Utah's water infrastructure includes a broad spectrum of water storage reservoirs, drinking water sources, storage tanks, treatment facilities, and distribution pipelines, to wastewater treatment facilities, storm drains, catchment basins, agricultural canals and irrigation systems and man made wetlands. In Utah, all must prioritize conservation.

Understanding Utah's current water infrastructure system requires understanding its history. The foundation of this system are the natural rivers, streams, and lakes that have emerged over Utah's geologic history.

The Fremont and Ancestral Puebloans were the first Utah residents to construct canals and ditches that diverted water from these natural systems to irrigate crops and sustain their communities. Many decades later, Utah pioneers expanded this early water infrastructure network to support larger agricultural operations, expand the geographic area of settlement, and build Utah's early economy. Some of these same canals continue to deliver water to Utah's farms and today's suburban neighborhoods.

In the late 1800s, the industrial revolution allowed for water to be pumped and moved even further, which created the opportunity for Utah to urbanize. The 1900s were accompanied by significant construction of water pipelines and small reservoirs to support these growing urban centers as well as the state's earliest sewage collection systems. Many of these same pipes are still in daily use in the older parts of our cities.

The early 1900s also signaled the first major federal investments in water infrastructure in the west. Some estimates identify the extent of federal participation as constituting about

one-third of all municipal water infrastructure financed and constructed in Utah since 1903. Most of Utah's large storage reservoirs, drinking water systems, and wastewater treatment facilities were constructed between the 1930's and 1990's and continue to support the current population of our state.

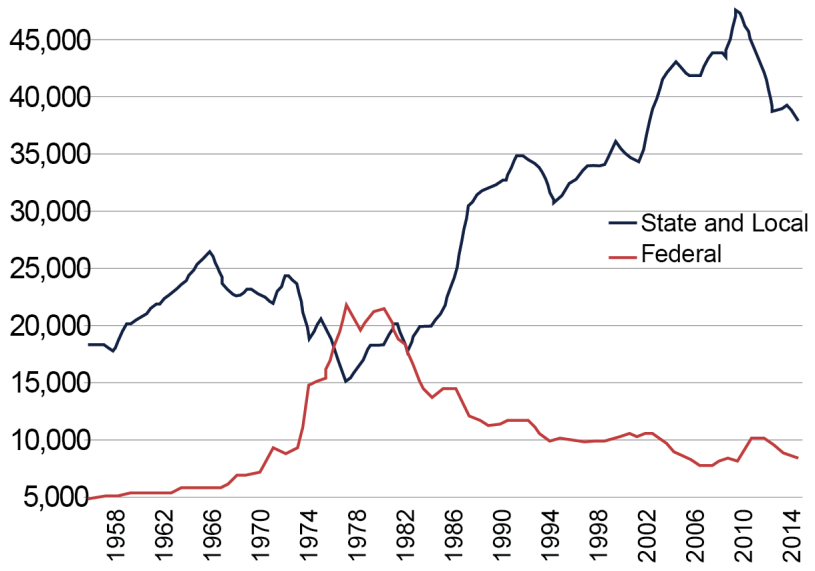
While continuous expansions and improvements have been made to water infrastructure since that time, much of the infrastructure that we rely upon is aging and nearing or past the end of its engineered life. New advances in conservation technologies should be incorporated into the state's existing infrastructure, as well as technologies that keep our wildlife populations healthy.

Our water infrastructure needs are expanding as our population continues to grow. Changes in funding approaches from the nation's capital have dramatically reduced the potential for future federal support to replace aging systems which were originally funded with federal dollars. Compounding these challenges is a changing climate that is altering Utah's precipitation patterns and levels, creating water quantity and quality challenges, and ultimately affecting the way that we meet the water needs of our state.

HISTORIC FEDERAL FUNDS

Many of Utah's large water projects such as the Central Utah Project and the Weber Basin Project were funded in part with federal dollars. However, since the 1980s, the federal government has contributed less to the development of water and wastewater capital projects, leaving states and local governments to find different ways to replace federal dollars.

State and local spending on capital projects has increased in part to offset declines in federal spending since the 1980s.



Credit: Utah Foundation
Source: Congressional Budget Office

The state is charged with ensuring public welfare, fair regulation and management of water systems, and maintaining the health of Utah's water resources. Every water infrastructure decision the state makes should work towards achieving the following outcomes:

- all Utahns have access to safe and reliable drinking water,
- Utah communities have access to the water resources necessary to meet the public health and economic needs of current and future generations,
- the state's agricultural industry is productive and resilient to drought, and
- water quality is sufficient to protect aquatic life, recreation, agricultural, municipal and industrial uses.

In order to achieve these outcomes, our state must continue to invest in water infrastructure to meet the needs of future generations. In addition to conservation efforts, the types of water infrastructure projects needed include:

- agricultural irrigation optimization projects,
- agricultural water metering, telemetry, and water measurement tools,
- dam safety projects to meet minimum dam safety standards,
- drinking water system repairs, replacements, and expansions,
- drinking water system expansion to support regionalization of small water systems,
- lead fixture and pipe remediation,
- new water development projects,
- non-point source pollution prevention projects,
- pipelines and treatment facilities to facilitate future agricultural to M&I conversion,
- redundant or replacement source water projects for drinking water systems,
- sewering of growing rural communities that currently rely on septic systems,
- stormwater infrastructure to protect water quality and for flood control,
- source and secondary water metering, telemetry, and water measurement tools,
- seismic retrofits,
- water storage expansion and maintenance,
- wastewater reuse technology,
- wastewater treatment plant upgrades and expansion, and
- watershed and riparian restoration projects.

The Role of the State

Addressing the scale and magnitude of Utah's water infrastructure system needs will require strong state leadership, effective policy decisions, and collaborative partnerships with state, regional, and local water managers. Funding the maintenance, replacement, redesign, and expansion of Utah's water infrastructure will take a collaborative approach.

The state's large water conservancy and reclamation districts, and municipalities in the state have the responsibility to plan for the current and future needs of the majority of Utah's population. Their ability to fund, collect taxes, charge rates, and issue bonds for future projects gives them the tools to maintain and expand our state's major water infrastructure. These districts will need the state's support in utilizing all the various funding mechanisms available to them as they undertake these large replacement projects.

At the municipal level, cities and towns typically build out their water infrastructure along with new development. Cities that fall within urbanized areas are generally within the service area of a major water district. These communities have the ability to purchase water on the retail market and to participate in water reclamation districts or regional wastewater treatment facilities to meet most of their infrastructure needs. New development can help pay for new infrastructure, but maintaining the existing infrastructure can be a large expense and requires careful planning and financing.

Many of Utah's small, rural communities are not served by the large districts, and instead

rely on their own wells, springs, and local water treatment and distribution facilities. Some rural communities are not sewered and rely on septic tanks for wastewater disposal, in some cases threatening the quality and beneficial uses of local water resources. Because of their dispersed geographic locations and the size of these communities, many towns do not have the resources to maintain their local water systems, sewer their communities, or implement updated technology to protect public health and waters. The state has an important role in providing technical and financial assistance to small or rural communities, as necessary improvements can be cost prohibitive for local governments. At the same time, there is an expectation that small communities do everything they can to contribute to the cost of these projects, which may include increasing rates.

Similar challenges exist for agricultural water systems. Repair and replacement costs are high and very difficult for mutual irrigation companies and irrigation districts, both of which derive their funds from users of the system. Because farmers generally operate on relatively small profit margins, most projects to restore and improve agricultural infrastructure will require funding aid.

The state of Utah has three primary roles in planning for and managing the state's water infrastructure.

1. **Preparing the state for growth.** This includes support of major statewide water conservation and development projects, and drinking water and wastewater regionalization projects.

2. **Protecting resources that are of importance to the public.** This includes protecting water quality for all of its beneficial uses which, in addition to drinking and agricultural uses, include riparian and aquatic ecosystems, recreational assets in waters of the state.
3. **Assisting in the development of projects that require the convening and facilitation power of the state.** Examples include projects in which the stakeholders have limited ability to bear the full cost of the necessary investments. Or, where there is no other entity appropriately positioned to facilitate the project, such as those requiring collaboration with other states, native nations, or federal entities.

Water conservancy districts, wastewater reclamation districts, municipal wastewater facilities, municipal water suppliers and retailers, agricultural districts, and other stakeholders must continue to play a significant role in filling gaps in the state's water infrastructure needs.

Policy Issues

Conservation and Water Infrastructure Needs

Utah is one of the driest states in the nation. The last twenty years have produced lower than average precipitation levels, and the 2020-2021 water year was one of the driest on record. The state and the large water providers were effective in messaging efforts asking Utahns to conserve water in response to the drought, and Utahns responded. According to data collected by the Utah Division of Water Resources:

- Jordan Valley Water Conservancy District's water deliveries were down nearly 31 percent in August 2021 as compared to the previous year.
- Washington County Water Conservancy District's service area reduced consumption by almost 400 million gallons of water over the 2021 summer as compared to 2020 use, and despite a 5 percent population increase.
- The city of Sandy saved over 1.3 billion gallons of water in 2021 as compared to 2020.
- Salt Lake City Public Utilities water use in the summer of 2021 (July 1 - September 30) was reduced by almost 2.3 million gallons when compared to the average of the previous three years (2018, 2019, 2020).

Conservation must be a prerequisite to all water infrastructure projects. While the need

to maintain and replace existing infrastructure persists, conservation efforts can reduce or delay the state's need to expand water infrastructure. The Bear River Water Development project was originally projected to be needed by 2015, but thanks to increases in both water conservation and efficiency, and despite our population having grown by 500,000, current projections now put the need for this project out to 2050. The total potential impact of greater water efficiency on delaying or reducing the need for new water development is unknown but could be significant. Conservation efforts can also reduce the size of needed future infrastructure projects, resulting in cost savings.

There are many opportunities to continue to decrease Utah's per capita water use through conservation efforts at the household, municipal, and regional levels. Tools to encourage conservation include education, incentives for appliance and landscape retrofits, secondary water meters, smart irrigation timers, water rates and pricing, fines and penalties for excessive water use, or restrictions to water only on specific days. Regardless of the mechanism, using less water must be a core goal for all Utahns and must be part of our state's infrastructure planning conversation.

Gov. Cox's FY 23 budget recommendations include an unprecedented $200 million investment in secondary meters, on top of $50 million already authorized, to:

- encourage greater conservation among water users,
- help water managers better understand how much water is being used, and
- implement measurement tools that can ultimately be linked to pricing or regulatory mechanisms to manage use.

Additionally, the governor is working with regional water districts to promote turf removal programs and household appliance retrofits to incentivize Utahns to voluntarily reduce their water usage. The governor has also emphasized the importance of better integrating our land use and water planning to reduce the water used by our cities and towns. The forthcoming Vibrant Communities element of this Coordinated Water Action Plan will address these topics in greater detail.

Finally, optimization of our agricultural irrigation systems creates the opportunity for conservation as well. The governor's FY 23 budget recommendations include $50 million for agricultural optimization, which is in addition to $20 million previously allocated to optimization by the legislature. This topic is addressed in greater detail in the forthcoming Robust Agriculture element of this plan.

The Relationship Between Water Pricing and Infrastructure Needs

Utah currently has among the lowest water and sewer rates in the nation because our population is located close to high quality water supplies. However, some of the full cost of water at a household or business level may be included within property tax rates, and therefore is less visible to the water user. It has been suggested that a transparent water bill that outlines the full cost of water, and makes water use data more understandable, would encourage conservation and reduce demand.

There is a large body of research that identifies a relationship between user fees and individual consumption behavior for typical commodities. Research by the Utah Foundation found that, "Comparing Utah's water providers shows that, on average, providers with 10 percenbt higher rates have 6.5 percent lower water use." Charging higher rates could delay or reduce the need for future infrastructure projects in Utah. Rates should be set based on the true cost of service, which includes maintenance, replacement, renewal, and expansion to accommodate new growth and regulations. However, discussions about increasing water rates raises concerns about equity among those at the lower end of the economic spectrum.

One possible solution is block rate pricing, or block rate pricing on a household size basis, to ensure that everyone continues to be able to afford clean water for drinking and household uses. Discussions about equity in rates should be transparent, as should any community decisions to provide subsidies.

Regardless of the mechanisms utilized, reducing water demand can delay or reduce both the cost of water service and the need for future infrastructure investment. However, extensive conservation efforts can create financial challenges for water retailers if rates are held constant. User fees typically comprise the majority of a water retailer's revenue stream–paying not only for operations and maintenance, but also for debt repayment. Water rates are tied to the volume of water used. When more water is used, the water retailer has more financial resources available to fund new projects, make expensive capital repairs, or repay debt. Conservation efforts that significantly reduce the amount of water used, and therefore the total rates paid, could cause financial strain for utilities that must still meet debt obligations. Increases to rates could minimize this concern. This is an issue that water providers will need to address, as robust conservation must be a focus for our state.

The Role of Asset Management

Regular maintenance can extend the life of Utah's water infrastructure. Beyond ongoing, annual operations and maintenance needs, most infrastructure has an engineered lifespan at which time capital replacement is necessary.

Typically, municipalities and irrigation companies build into their revenue streams sufficient funding for water works operation and maintenance, but it is common for these utilities to under fund their infrastructure replacement (i.e., asset depreciation). Instead, most finance major capital projects for asset expansion and replacement over the engineered lifespan of the asset. Inevitably, financing these projects results in a need for increased revenue (a rate increase), which can be distressful in the community, particularly in smaller communities that have a limited ratepayer base and especially where rates have been kept artificially low through deferred maintenance and capital asset improvement.

One of the challenges the state faces in supporting small and rural water and wastewater systems is to incentivize them to plan long -erm investments rather than simply addressing their short-term needs. State programs that offer hardship grants must ensure that water and wastewater systems have access to the technical assistance necessary to evaluate life-cycle alternatives, consider consolidation with other systems when possible, draft asset management plans that will help to make those systems more resilient over the long term, and address infrastructure maintenance in a way that limits reliance on state resources.

Fiscally sound and sustainable management of our vital infrastructure includes full funding for the replacement of our infrastructure as it ages, preferably on an ongoing basis such as under an asset management program. Local governmental utilities may not be aware of their ability to utilize accounting practices that allow for the cost of full capital replacement to be built into annual budgeting.

This practice is currently used by the Utah Department of Transportation. According to Utah's 2020 Comprehensive Annual Financial Report,

> The state has adopted an allowable alternative to reporting depreciation for state roads and bridges (infrastructure assets) maintained by the Utah Department of Transportation (UDOT). Under this alternative method, referred to as the "modified approach," UDOT must maintain an asset management system and demonstrate that the infrastructure is being preserved at or above established condition levels.

Infrastructure assets accounted for under the modified approach are not depreciated, and maintenance and preservation costs are expensed.

The Responsibility for Maintaining Water Quality

Clean water is essential to life, and the public health, security, and welfare of the residents of Utah. It also provides the motive force that drives our economy and supports our growth. The state is responsible for protecting water quality for all of its beneficial uses under delegation from the US Environmental Protection Agency. This means protecting the headwaters that are the source of much of our drinking water, our reservoirs and streams that are critical to wildlife, livestock, and recreationists, our groundwater which supplies half of our water in the state, and the unique and fragile attributes of the Great Salt Lake.

As Utah is experiencing great growth and prosperity, we are also faced with greater demands for clean water for all of its uses amid a serious drought and supply concerns. Unlike with water supply, water conservation does not slow the production of waste by communities or pollutants from dispersed sources; waste production increases in proportion to population and its growth.

Treated wastewater also puts a demand on its receiving water, the waters of the state. This demand is attenuated (through dilution) in the receiving waters; treatment effectiveness together with instream attenuation is regulated to achieve water quality standards that protect the uses. When the receiving waters decline (less dilution), water quality standards cannot be met without additional treatment, technology and cost. The constant increase in pollutant loads coupled with declining stream flows and reservoir levels is adversely affecting water quality throughout Utah. This increasing pressure on our natural waters contributes to the current impairment, i.e., not meeting water quality standards required to protect its uses, of some 40 percent of the waters across the state.

Utah will not be able to maintain the health of our rivers and lakes with the level of treatment that has served our communities in the past. Utah must make additional improvements to wastewater treatment and stormwater management to protect and improve our water quality into the future. Investing in water quality infrastructure at the time of growth and on an ongoing basis is critical for the lasting health and well being of our communities and toward our successful stewardship of Utah's vital and miraculous natural environment.

Wastewater services and their infrastructure are generally funded by direct users (through fees and taxes) of that infrastructure. What many people do not realize is that in addition to paying to take away their waste, they are also paying to protect the natural waters, in many cases far downstream from their community. And in many cases, someone upstream did them the same valuable service. Hence, the state and the public at large are major benefactors from proper and effective wastewater treatment by each citizen, community, and water user that pays a sewer bill.

Increasing Utah's Water Supply

Finding ways to increase the amount of water available to support a growing population is a primary concern for the state. There are six ways to increase the state's water supply: conservation, agricultural water conversion, increased water storage capacity, water reuse, new water development, and weather modification. All six options require some infrastructure investment and each include elements that raise policy questions.

Conservation

As discussed above, conservation has the potential to make significant amounts of water available for other uses. Infrastructure investments to advance conservation include: secondary meters, diversion telemetry, and

agricultural optimization.

Agricultural Conversion

As our state urbanizes there will inevitably be some conversion of agricultural land to development. The water rights associated with these irrigated acres will then become available to support the new growth. An acre of developed land typically uses less water than an acre of agricultural land, which means large-scale agricultural conversion could potentially result in a substantial amount of newly available water for growing communities.

The conversion of agricultural water to municipal and industrial (M&I) uses means that the same water is no longer available to support the state's agriculture. Agriculture is a major contributor to our state's economy and is part of our heritage, landscape, and culture. As our communities grow, there will be an increased demand for food production. The agricultural lands' food production role will become increasingly important over time. Utah must strike the right balance between meeting our cities' future water needs and supporting Utah's agricultural industry.

Water distribution pipelines and treatment facilities will be needed to make agricultural quality water available for M&I consumption. The farther water is transported, the more expensive the water infrastructure needed becomes. As our state's population grows, community leaders must consider directing development to the places where the water already exists. Some of Utah's rural communities are eager to receive new growth and development, while others feel growth is a threat to their community's historic character. Again, Utahns must strive to find the correct balance.

Increased Storage

A third way to increase the availability of water to Utah's growing communities is to increase the amount of water storage capacity in the state. The water stored in Utah's reservoirs during previous wet cycles has made it possible for our communities to stay healthy and beautiful during the extreme drought conditions of 2021. Utah must be prepared to capture and store as much water (above and below ground) as possible during future wet periods. We can then draw down these reserves in dry periods, and fill them again in more favorable weather. However, given the increasing likelihood of extended droughts, many of these storage facilities may be dry for significant periods of time.

It is possible to expand the storage capacity of many existing reservoirs by increasing the height of the dams or by dredging sediment that has accumulated over time. Opportunities to expand capacity should be considered along with the repair and maintenance of large dams as their useful life spans expire. As these reservoirs have already been set aside for water storage, their expansion may enjoy more public acceptance than proposals for new reservoirs. Expanding existing storage facilities may have additional benefits over new sites, such as a potential for reduced regulatory permitting, being located in proven locations, and expanding existing recreational destinations. Any expanded storage will require associated water rights.

There is the potential for new subsurface and surface water storage on Utah's public lands. Any projects on federal lands or funded with federal dollars will require environmental analysis that can span years. These projects would also result in changes to the landscape and ecosystems and should be considered thoughtfully. Implementation of any new storage projects should align with water conservation efforts and expansion of current storage facilities. Given the uncertainty of Utah water resources and the need to support a growing population, Utah will continue to explore these opportunities to create additional water infrastructure on public lands.

Aquifer storage and recovery (ASR) projects are another opportunity available. In these projects water is seeped or pumped into naturally porous geologic layers underground to be stored until

it is needed in the future. An advantage of this approach is that there is no loss of water to evaporation. These projects are likely to result in less public opposition due to less surface disturbance, and may require less in infrastructure investments. Maintaining the quality of water in our aquifers is critical, however, and these projects too must proceed with caution.

Water Reuse

A fourth option to expand the supply of water available in Utah is to increase water reuse practices. Most large water sewer systems already meet the water quality requirements for some irrigation and industrial uses, but the infrastructure to deliver this treated water to a future economic use does not currently exist. Treatment of sewer system effluent could be further increased to a level at which water could be safely reused for higher purposes, including drinking water uses. Infrastructure investments to implement this concept would include investments in water treatment technology and a delivery system to transport the recycled water to its next use.

An important concern in northern Utah is that reusing wastewater will result in less water being returned to Utah's natural water bodies. This example comes up most frequently in the context of Utah Lake, the Jordan River, and the Great Salt Lake, as much of the water in these water bodies is treated sewer effluent. Reusing this water would change the current flow of water. However, the reuse of treated water would also reduce the need to divert fresh water from our rivers and streams upstream. Diverting less water from the natural system would potentially leave more water to flow naturally throughout the system. More research is needed to determine the actual impacts of such a water reuse project. Additionally, the state water agencies should coordinate on updates to policies and regulations governing water reuse.

Weather Modification

Finally, technologies to modify the weather, such as cloud seeding, can tap into atmospheric water "reservoirs." In 1973, the Utah Legislature passed the Modification of Weather Act, authorizing the Division of Water Resources to manage a cloud seeding program. In 2015, the Division completed a study that indicated an increase of 3-17 percent Snow Water Equivalent in cloud seeding areas. This resulted in an average annual increase in runoff of nearly 186,700 acre-feet at a cost of $2.20 per acre-foot, making this a valuable and economical tool. In the recently published Water Resources Plan, the Division of Water Resources listed a goal to, "Identify areas that would benefit from water modification (cloud seeding) enhancement." However, weather modification at a large scale may spur interstate discussions and environmental analyses of the impact of modifying atmospheric conditions.

New Water Development

The legislature has directed the state agencies through state code (Utah Code §73-28-101/105; 201/203; 301/302; 401/405 and §73-26-102/107; 201/203; 301/302; 01/404; 01/507) to continue to explore opportunities to further develop and transport water to growing population centers. Again, conservation must be a prerequisite to any new water infrastructure project as reducing water demand has the ability to delay the need for these projects.

Utah's Water Infrastructure Need

The scale of Utah's needs for water infrastructure maintenance, replacement, redesign, and expansion may take generations to address. Large water projects can require as much as 30-year lead times from identification of need to delivery of water. Utah must ensure that infrastructure investments simultaneously realize both water and financial efficiencies and utilize the most cost-effective approaches for the benefits produced. Fortunately, we are in a time when Utah has potential to access significant, yet one-time, federal resources, which Utah can use to leverage our own resources and maximize impact.

A number of studies and publications have been produced attempting to estimate the cost of outstanding water infrastructure needs. These include:

- Utah Department of Agriculture, *2021 Annual Report: Utah Agricultural Water Optimization Task Force,*
- Utah Division of Water Resources, *2021 Dam Safety and Repair List,*
- Utah Division of Drinking Water, *2021 Drinking Water Infrastructure Survey,*
- Utah Seismic Safety Commission, *Improving Resilience in Utah's Lifeline Infrastructure,*
- Prepare 60 Partnership, *2021 State Water Infrastructure Plan*, and
- Reclaim 60 Partnership, *2019 State Wastewater Infrastructure Plan.*

These publications have estimated many billions in repair and replacement and new infrastructure needs over the next 50 years.

Funding Water Infrastructure

Funding Mechanisms

Water infrastructure projects are funded through several mechanisms including municipal bonding, user rates, impact fees, property taxes, and state and federal loans and grants. Most large municipalities and water districts pay for their needs with a combination of user rates and municipal bonds. Small towns and districts often require state supported, low-interest loans and grants.

Identifying the best mechanism for funding water infrastructure projects is project dependent and often involves a combination of different funding tools, each with their own benefits and limitations. Available tools include:

- **Federal Grants -** Federal funding is useful for large scale projects. These funds come with federal restrictions such as National Environmental Policy Act analyses, Buy America requirements, etc., which can all increase project costs.

- **State Revolving Loans -** Projects funded with state revolving loans will be repaid to the state by local governments, allowing those dollars to be reinvested again and again. However, this tool requires local governments to have a revenue stream to be able to repay the loan.

- **State Grants -** Grants to local governments are useful in supporting small projects when the local government does not have the ability to repay a loan. Because these are grants, the funding is one-time, limited, and unavailable to revolve over time.

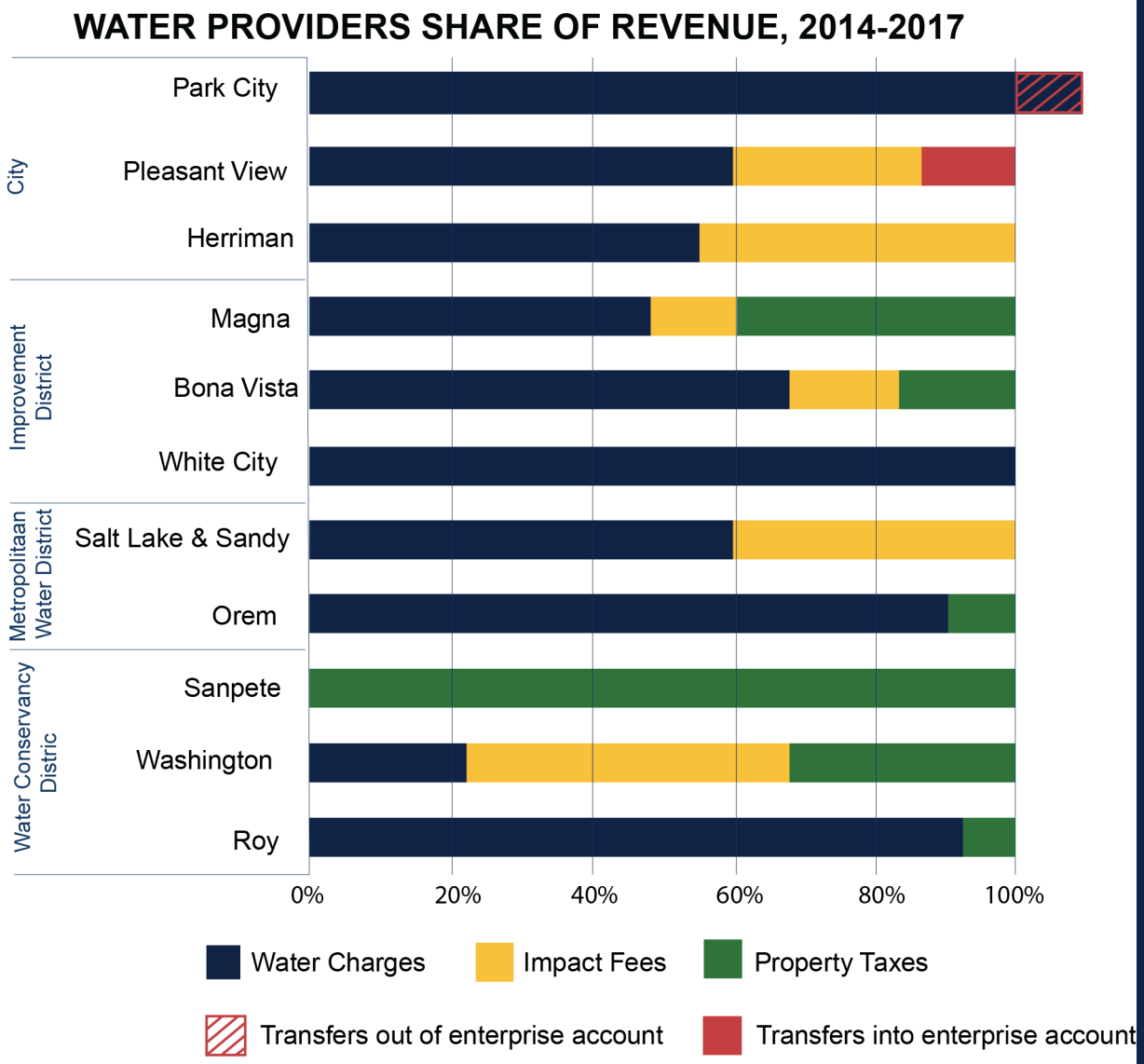
- **Impact Fees –** An impact fee is a one-time charge that local governments can impose to mitigate the impact on local infrastructure that new development causes. Charging impact fees to new developments can help fund public facility expansions or enlargements to maintain the same level and quality of public services for current and future residents. This is an important tool for local governments to fund necessary expansions and new capacity. However, impact fees are not available to maintain existing infrastructure. Additionally, there can be questions of fairness and proportionality associated with impact fees, both in how they are charged and how they are used. The Impact Fees Act provides uniformity and predictability to the process.

- **Water and Sewer User Fees -** Water providers can charge water users fees in the form of rates to cover the cost of water or sewer service. Culinary water providers are required by state law to have a tiered rate structure, in which rates increase with volume used. Many cities have incorporated the graduated rate approach into their sewer rates as well, but the majority of sewer rates use a flat rate structure. Rates typically cover only ongoing operations and maintenance of the water system and are not used

to fund new infrastructure. However, rates can be used to support ongoing renewal (replacement) of existing infrastructure and capacity.

- **Bonding -** Local governments and water providers with sufficient credit can issue bonds, backed by either property tax or water rates, to finance larger water infrastructure projects. Revenue bonds, or bonds backed by current revenue streams, can be issued by the bonding entity at their discretion. General Obligation bonds, or bonds backed by new revenue streams (i.e., a new tax), must be approved by voters. Bonding is considered a pay-as-you-go strategy.

- **Property and Sales Tax -** Many water providers utilize property taxes as a source of revenue to fund water service operations and maintenance. Property taxes can also be used to back revenue bonds. Sales tax revenue can be used similarly.



Credit: Utah Foundation
Source: Utah Foundation calculations based on water district financial reports posted on the Utah State Auditor's website, 2014-2017

Addressing the scale of Utah's infrastructure needs will require a multi-pronged approach with participation at all levels of government. In general, the state of Utah's approach is to:

- maintain its strong bond rating to ensure access to financing tools,
- revolve state funds sustainably to ensure access to low cost financing,
- maximize the use and leveraging of federal funds,
- assist local governments in planning for and fully funding renewal and replacement of existing and aging infrastructure, e.g., life cycle and consolidation analyses, and asset management planning,
- provide state grants to projects meeting judicious prioritization and sequencing criteria,
- help local governments achieve and maintain high bond ratings,
- support regional and municipal water managers in implementing bonding and rate increases, and
- support local governments in charging impact fees.

Existing State and Federal Funding

Current, ongoing state funding for water infrastructure programs is largely derived from revenues from a one-eighth percent sales tax. These revenues vary based on tax receipts and in Fiscal Year 2021 (FY 21) contributed $82 million in available funding for revolving loans and limited grants. Due to the revolving nature of these funds, loan repayments and interest return to these funds and become available for future investments. Additionally, the Permanent Community Impact Fund Board (CIB) has contributed significant funding for water infrastructure to communities that are impacted by mineral resource development on federal lands. While the CIB does not have a specific amount allocated to water projects, the Board has allocated an average of $23 million a year over the past ten years.

Federal funding through the Environmental Protection Agency also provides approximately $11 million in federal drinking water revolving grant and loan funds and $8.4 million in wastewater revolving grant and loan funds each year. In addition to these annual amounts, Utah is receiving historic one-time funding through the American Rescue Plan Act (ARPA) Coronavirus State Fiscal Recovery Fund and the Investing in Infrastructure and Jobs Act (IIJA). Based on current estimates and the governor's proposed use of these funds (detailed below), approximately $1 billion from these sources could be invested in water-related uses over the next five years.

ARPA COVID-19 Local Assistance Matching Grant Program (2021 Awards):

$34 million - Water and sewer projects ($50 million was appropriated for various ARPA eligible categories. Water and sewer projects comprised approximately 68 percent of the funded projects.)

Additionally, Gov. Cox has recommended an additional $100 million for the COVID-19 Local Assistance Matching Grant Program which could fund additional water projects if appropriated by the Legislature.

ARPA First Tranche May 2021 Appropriation:

$50 million - Secondary Metering
$25 million - Drinking Water
$20 million - Agricultural Optimization
$5 million - Great Salt Lake
TOTAL: $100 million

Gov. Cox FY 22/23 Recommendations for ARPA:

$200 million - Secondary Metering
$75 million - Drinking Water
$50 million - Agricultural Optimization
$45 million - Great Salt Lake
$25 million - Utah Lake
$5 million - Southern Utah Water Recycle and Reuse
TOTAL: $400 million

IIJA (Estimated FY23-FY28):

$50 million - Completion of the Central Utah Project
$93 million - Clean Water State Revolving Fund
$305 million - Drinking Water State Revolving Fund
TOTAL: $448 million

Additional federal funding has been allocated to water infrastructure projects and wildfire mitigation and post-disaster recovery across the nation, but has yet to be distributed to the states. Some of these funds may be direct contributions to states, while others may be allocated through competitive processes.

Following is a summary of state and federal water infrastructure funding programs and their past utilization levels.

SUMMARY OF UTAH'S WATER FINANCIAL ASSISTANCE FUNDS

Fund (Authorizing Body)	Eligibility		Loan Terms					Financials		Notes	Year of Inception	# Recipients since Inception	Total Assistance since Inception
	Project Type	Applicants	Interest Rate	Criteria Considered	Affordability Consideration	Loan Conditions	Water Conservation	Current Funding Capacity	Annual Funding Sources				
Clean Water State Revolving Fund (Water Quality Board, DEQ)	Wastewater and storm water infrastructure with a water quality nexus. Non-Point Source Projects	Municipalities and Water Districts	Varies (0-2.5%) + grant in cases of hardship	Public health, water quality impact, affordability, applicant contribution	Economic hardship (sewer rate > 1.4% of local MAGI); poverty level; unemployment; trends	Asset management plan; Water Conservation Plan	Water Conservation Plan; interest rate reductions for "green" projects interest rate reductions for "green" projects	$5 million/year through 2023	Federal grant: ~$8 million/year State sales tax: $3.6 million/year; Loan Repayments; Interest	Governed by title 19-5-104 and 11-8-2 NPS also governed by 73-10c-4.5	1972	670	$ 1,442,000,000
Drinking Water State Revolving Fund (Drinking Water Board, DEQ)	Drinking water infrastructure and associated engineering/ planning	Public water systems (Municipalities, Special Service Districts and private water companies)	Varies (0% -2.3%), Reduction of market rate based on affordability and other financial considerations	Public health, affordability, regionalization, cost effectiveness and applicant contribution	Monthly water rate > 1.75% of local MAGI or a local MAGI < 80% of statewide MAGI	A plan to address documented deficiencies on the Improvement Priority System (IPS) report	An approved Water Conservation Plan as required by DWRe must be completed	$15 million	Federal grant: ~$9 million/year; State sales tax: $3.6 million/year; Loan repayments; interest		1984	662	$501,126,000
Water Resources Revolving Construction Fund, Conservation and Development Fund and Cities Water Loan Fund (Water Resources Board, DNR)	Water development, conservation, and irrigation	Irrigation companies, water companies, municipalities, water districts, special service districts and Indian tribes	Private water company projects < $1M at 0%; Ag Projects > $1M at 1%; Municipal projects at 0% -3 +%	Public health & safety, benefit-cost ratio, affordability	Municipalities with monthly water cost > 1.4% of of local MAGI. If local MAGI < 80% of statewide MAGI, eligible for lower interest rate	Agricultural projects, Water Conservation Plan;, Municipal projects, Water Conservation Plan, watering ordinance, tiered water rate structure	An approved Water Conservation Plan	~$89 million	$7.175 million + ~38% of 1/16% of state sales tax; Loan Repayments	Governed by Title 73-10	1947	1,501	$920,000,000
Water Infrastructure Restricted Account	Bear River and Colorado River Water Development; Repair/replacement of federal water projects	Water Districts	TBD	As established by the Utah Legislature	NA	TBD	NA	$121 million	1/16% of state sales tax	Governed by Title 73-10g-Part 1	2015		
FY 2022 Permanent Community Impact Fund Board	Planning, construction and maintenance of public facilities, and provision of public services including water and wastewater in impacted communities.	Counties and municipalities impacted by mineral resource development on federal lands	An established funding tool provides funding scenarios. Outside the Scenario, exemptions are required. Interest rates (0-2.5%) and Grants .	Project need; Funding options; Producing counties; Area impacted by mineral resource development; Public benefit	Base affordability for water and sewer projects DWQ and DDW criteria. Annual Budget, Location	Planning, study or design requests require a 50% local cash contribution. Plan review by state agencies	N/A	Amount varies by year and is not all limited to water projects	Mineral lease payments; Resource development payments; Loan repayments.	Governed by Statute: 35A-8-3 UAC R990-8	1979		
											1976	3,224	
											2017	Multiple	$389,000,000
											2020		$438,915,680
USDA Rural Development Water & Wastewater	Funds may be used to finance the acquisition, construction or improvement of drinking water, sewer, solid waste, and storm water	Communities <10, 000 population	Standard: 2.125% Intermediate: 1.750%; Poverty: 1.25%		Yes	Public purpose; Financially sustainable; Legal authority to operate the utility	NA	$13 million; Local allocation	Federal Grant	7 CFR, Part 1780 and 1782, Section 306 of Consolidated Farm and Rural Development Act			

SUMMARY OF UTAH'S WATER FINANCIAL ASSISTANCE FUNDS

Fund (Authorizing Body)	Eligibility		Loan Terms						Financials		Notes	Year of Inception	# Recipients since Inception	Total Assistance since Inception
	Project Type	Applicants	Interest Rate	Criteria Considered	Affordability Consideration	Loan Conditions	Water Conservation	Current Funding Capacity	Annual Funding Sources					
Agricultural Resource Development Loan Fund (Utah Conservation Commission)	Agricultural Products including irrigation	Farmers, Ranchers, Small Agricultural Business and Irrigation Companies	2.5%-3% depending on loan amount	Projects that conserve soil, water, product protection, New technology, Emergency Disasters	Base on credit analysis and other loan criteria	Plans approved with technical assistance planners from UDAF and NRCS or expert designers; NRCS Guidelines for approved conservation practices	All water conservation plans are designed to conserve water or mange water usage by technical planners	$6.153 million	$525,000 of state sales tax; Loan repayments		Governed by Title 4-18-106 Rule 64-1-8			
Agricultural Optimization ProgramLegislative Appropriations to Utah Department of Agriculture and Food (UDAF)*	Water Optimization Grant	Agriculture producers, irrigation companies, water conservancy districts (funding only for agriculture, no secondary water projects)	NA	Water savings, water quality benefit, cost, metering, etc.	NA	NA	10% water savings, measured on both CFS or acre feet bases	2 funding cycles of $3 million (2019, 2022)	Legislative Appropriations		2022: 81 applications totaling $10,666,142 in requests; $3,200,000 available for projects;	2018		
Water Infrastructure Finance and Innovation Act	Wastewater, drinking water projects >$20 million		US Treasury Rate					$6 billion nationwide	Fedreag Grant (Leveraged)			2014		

*Future funding availability subject to legislative appropriations.

Funding Gap

Utah is fortunate to have a generational opportunity for consequential, one-time investments from the federal government through the Infrastructure Investment and Jobs Act (IIJA) and the American Rescue Plan Act (ARPA). However, the current backlog of projects, aging infrastructure, a changing climate, and a growing population will necessitate further investments in the state's existing water infrastructure. With the potential for many billions in water infrastructure needs over the next 40 years, the millions of dollars being invested today fall short—even with significant conservation efforts.

The financial responsibility to address these water infrastructure needs falls to many stakeholders. Water conservancy districts, wastewater reclamation districts, municipal water suppliers and retailers, and individual water users must all continue to play a significant role in filling gaps in the state's water infrastructure needs. The state must also work with the federal government to ensure that it continues to provide ongoing funding and does not de-invest in water infrastructure funding in the future.

The state's contributions to local water, sewer, and agricultural optimization projects typically fund only a portion of the total cost of a project, with significant matching contributions coming from local or private sources. Historically, the Division of Water Quality has typically funded between 25-33 percent of the total value of wastewater infrastructure projects in the state using revolving loans or grants. Every dollar contributed by Utah Department of Agriculture and Food's agriculture water optimization program in the 2019 funding cycle, has been leveraged into $5.77 in matching contributions.

Over the past five years the Drinking Water Board, through the Drinking Water State Revolving Fund financial assistance program, has provided over $157 million to the state's drinking water systems for infrastructure construction and improvement projects.

The 2021 Drinking Water Infrastructure Survey identified an additional $1.8 billion in infrastructure needs over the next few years.

Action Plan

Previous water planning efforts have identified over 200 unique recommendations to better secure Utah's water future. The intent of this report is to identify specific actions that Utah's executive branch can undertake immediately to help move some of these many recommendations forward.

The state has identified five key priority actions, and associated implementation steps, to address Utah's water infrastructure needs.

ACTION 1 **Create a framework to assist local governments and agricultural water providers in data collection and analysis, prioritization of needs, access to funding, and asset management planning.**

ACTION 2 **Develop a series of needs assessments for local-scale water systems across the state, including both municipal and agricultural systems.**

ACTION 3 **Continue to be a matching partner in funding the state's water infrastructure needs as the state grows, and assess the evaluation criteria to ensure these state grant and loan programs are advancing the state's priorities, including conservation.**

ACTION 4 **Streamline project approvals, rules, and regulations to encourage innovation in Utah's water management such as aquifer storage and recovery (ASR), water reuse, desalinization, green infrastructure, new storage, and public-private partnerships.**

ACTION 5 **Invest in research, data collection, and operator training to ensure the state's water infrastructure benefits from the most accurate information and best practices.**

ACTION 1 Create a framework to assist local governments and agricultural water providers in data collection and analysis, prioritization of needs, access to funding, and asset management planning.

TASK Identify the resources available within state agencies to assist local governments and agricultural water providers

Champion: State Planning Coordinator (GOPB)
Participants: DWRi, DWRe, DWR, DDW, DWQ, PLPCO, UDAF, Utah Conservation Commission, Water Development Coordinating Council
Timeline: Spring 2023
Resources needed: Dedicated staff time
Performance metric: Comprehensive inventory of existing resources completed

TASK Compile available technical assistance and data resources in a format that is comprehensive and easy for both state agencies and local stakeholders to access

Champion: State Planning Coordinator (GOPB)
Participants: DWRi, DWRe, DWR, DDW, DWQ, PLPCO, UDAF, Utah Conservation Commission, Water Development Coordinating Council
Timeline: Fall 2023
Resources needed: Dedicated staff time, software, and printing
Performance metric: Published resource website, database, or document

TASK Promote the availability of these resources to stakeholders through regional watershed councils, task force/advisory council meetings, water user associations, conferences, etc.

Champion: State Planning Coordinator (GOPB)
Participants: DWRi, DWRe, DWR, DDW, DWQ, PLPCO, UDAF, Utah Conservation Commission, Water Development Coordinating Council
Timeline: Winter 2023
Resources needed: Dedicated staff time, printing, travel costs
Performance metric: Documented list of outreach activities

ACTION 2 Develop a series of needs assessments for local-scale water systems across the state, including both municipal and agricultural systems.

TASK Identify communities or agricultural water systems that could benefit from a needs assessment

Champion: DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DWRi, DWRe, DDW, DWQ, UDAF
Timeline: Summer 2023
Resources needed: Dedicated staff time, travel costs
Performance metric: Inventory of systems

TASK Develop a process and template for conducting needs assessments, and compile existing system master planning information

Needs assessment should estimate the needed investment from state/federal resources and what can be financed locally.

Champion: DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DWRi, DWRe, DDW, DWQ, UDAF
Timeline: Summer 2023
Resources needed: Dedicated staff time
Performance metric: Project proposal to support budgeting process and agreed-upon process and template to ensure consistency in assessments and the ability to make fair comparisons of needs across the state

TASK Develop budget request for statewide water infrastructure needs assessment

Champion: DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DWRi, DWRe, DDW, DWQ, UDAF, GOPB
Timeline: Fall 2023
Resources needed: Dedicated staff time
Performance metric: Budget request submitted to GOPB

TASK Legislative budgeting process

Champion: GOPB Executive Director, DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DWRi, DWRe, DDW, DWQ, UDAF
Timeline: Spring 2024
Resources needed: Dedicated staff time
Performance metric: Approved budget for project

TASK Complete the decennial Clean Water Needs Survey, prepare for the next federal Drinking Water Needs Assessment, and undertake individual needs assessments for agricultural systems.

Champion: DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DWRi, DWRe, DDW, DWQ, UDAF
Timeline: 2022 Clean Water Needs Survey, 2025 Drinking Water Needs Assessment, Summer 2022 Agricultural Assessments
Resources needed: May need $10,000 - $450,000 per assessment depending on size, complexity, and location, dedicated staff time, contracted assistance
Performance metric: Individual needs assessments completed, 90 percent of communities or utilities respond to surveys, survey results (needs as $ and service capacity) are publicly available statewide infrastructure planning and analysis

TASK Utilize needs assessment to drive future investments, technical assistance efforts, and state decision making

Champion: DNR Executive Director, DEQ Executive Director, UDAF Commissioner

Participants: DWRi, DWRe, DDW, DWQ, UDAF, Water Resources Board, Water Quality Board, Drinking Water Board, Utah Conservation Commission
Timeline: Ongoing
Resources needed: Dedicated staff time, existing state grant and loan programs
Performance metric: Projects identified in needs assessment are prioritized for implementation and eligibility for state grants/loans

ACTION 3 Continue to be a matching partner in funding the state's water infrastructure needs as the state grows, and assess the evaluation criteria to ensure these state grant and loan programs are advancing the state's priorities, including conservation.

TASK Review state program evaluation criteria to determine if the programs are adequately advancing the state's priorities

Champion: DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DWRi, DWRe, DDW, DWQ, UDAF, Water Resources Board, Water Quality Board, Drinking Water Board, Utah Conservation Commission, GOPB
Timeline: Fall 2023
Resources needed: Dedicated staff time
Performance metric: Assessment of evaluation criteria and recommendations for updates as needed

TASK Update state program evaluation criteria to better reflect current priorities, if determined to be needed

Champion: DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DNR Executive Director, DEQ Executive Director, UDAF Commissioner
DWRi, DWRe, DDW, DWQ, UDAF, Water Resources Board, Water Quality Board, Drinking Water Board, Utah Conservation Commission, GOPB
Timeline: Winter 2023
Resources needed: Dedicated staff time
Performance metric: Approved, updated evaluation criteria

TASK As needed and dependent upon available resources, develop budget requests for state grant and loan programs to maintain strong state support in water infrastructure development

Champion: GOPB Executive Director, DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DWRi, DWRe, DDW, DWQ, UDAF, Water Resources Board, Water Quality Board, Drinking Water Board, Utah Conservation Commission, GOPB
Timeline: Review annually as part of budget cycle
Resources needed: Dedicated staff time
Performance metric: Budget request submitted to GOPB

TASK Legislative budgeting process: Present to Legislative Water Development Commission; the Natural Resource, Agriculture, and Environment Appropriations Committee; and the Executive Appropriations Committee, Utah Water Task Force

Champion: DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DWRi, DWRe, DDW, DWQ, UDAF, Water Resources Board, Water Quality Board, Drinking Water Board, Utah Conservation Commission, GOPB
Timeline: Annually as part of legislative process
Resources needed: Dedicated staff time
Performance metric: Approved budget for project, if applicable

ACTION 4 Streamline project approvals, rules, and regulations to encourage innovation in Utah's water management such as aquifer storage and recovery (ASR), water reuse, desalinization, green infrastructure, new storage, and public-private partnerships.

TASK Assess the state's current rules and regulations guiding the above areas of water infrastructure and innovation

Champion: State Planning Coordinator (GOPB), DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DWRi, DWRe, DDW, DWQ, UDAF
Timeline: Summer 2023
Resources needed: Dedicated staff time
Performance metric: Literature review of current rules and regulations

TASK Identify opportunities for streamlining
Champion: State Planning Coordinator (GOPB), DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DWRi, DWRe, DDW, DWQ, UDAF
Timeline: Summer 2023
Resources needed: Dedicated staff time
Performance metric: Preliminary list of opportunities for revision

TASK Convene stakeholder working groups by topic to draft new regulation proposals and develop solutions to barriers

Champion: DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DWRi, DWRe, DDW, DWQ, UDAF, Water Task Force, key stakeholders, Watershed Councils
Timeline: Fall 2023
Resources needed: Dedicated staff time
Performance metric: Working groups meeting and producing draft solutions

TASK Propose new regulatory framework to state government leadership

Champion: DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DWRi, DWRe, DDW, DWQ, UDAF, Working group chair(s)
Timeline: Winter 2023
Resources needed: Dedicated staff time
Performance metric: Draft regulatory framework presented to Water Task Force, Drinking Water Board, Water Quality Board, Utah Conservation Commission

TASK Adoption of revised statute or rules

Champion: DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DWRi, DWRe, DDW, DWQ, UDAF, State Legislature, Water Quality Board, Drinking Water Board, Water Task Force
Timeline: Spring 2024
Resources needed: Dedicated staff time
Performance metric: New rules or statute in effect

ACTION 5 Invest in research, data collection, and operator training to ensure the state's water infrastructure benefits from the most accurate information and best practices.

TASK Develop a prioritized list of data collection, research, and training needs within each agency.

Champion: DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DWRi, DWRe, DDW, DWQ, UDAF, PLPCO
Timeline: Summer 2023
Resources needed: Dedicated staff time
Performance metric: A prioritized list of research, data and training needs developed

TASK Develop budget request(s) for specific research, education, and training projects.

Champion: DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DWRi, DWRe, DDW, DWQ, UDAF, PLPCO
Timeline: Fall 2023
Resources needed: Dedicated staff time
Performance metric: Budget request submitted to GOPB

TASK Legislative budgeting process: Present to Legislative Water Development Commission; the Natural Resource, Agriculture, and Environment Appropriations Committee; and the Executive Appropriations Committee

Champion: DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DWRi, DWRe, DDW, DWQ, UDAF, PLPCO
Timeline: Spring 2024
Resources needed: Dedicated staff time
Performance metric: Approved budget for project, if applicable

TASK Conduct the data collection, research or training efforts.

Champion: DNR Executive Director, DEQ Executive Director, UDAF Commissioner
Participants: DWRi, DWRe, DDW, DWQ, UDAF, PLPCO
Timeline: Ongoing
Resources needed: Dedicated staff time
Performance metric: Research projects initiated, data collected, training implemented