The 4,200 Project Guidebook

An advocacy manual to raise the Great Salt Lake to a sustainable level for future generations of Americans

Utah Rivers Council

The 4,200 Project

Guidebook

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The Utah Rivers Council is a 501 c3 grassroots nonprofit organization dedicated to the conservation and stewardship of Utah's rivers and sustainable clean water sources for Utah's people and wildlife.

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The Great Salt Lake at higher water levels. Karri Smith photo.

Preface

Over the last 30 years, the Utah Rivers Council has run a range of water advocacy campaigns to get more water into Utah's rivers and lakes and to protect aquatic habitat across the state. Our advocacy efforts begin with robust research programs that guide our campaigns to educate and engage stakeholders and decision-makers to implement local, state, and federal water policies that benefit Utah's rivers and lakes.

For our state-level advocacy, we have written dozens of pieces of legislation and convinced Utah legislators to sponsor our bills to reduce municipal water use, protect instream flows, dedicate water to the Great Salt Lake, use water markets to encourage conservation, require water conservation planning and eliminate

destructive water projects that could further shrink the Great Salt Lake and its tributaries. Some of these measures have become law.
Much of the proposed legislation – described in detail throughout this Guidebook – was first adopted by other western states where it has led to some remarkable achievements. These policies are reasonable, effective, and often have years or decades of research behind them. In many cases, the Utah Rivers Council has partnered with legislators and run some of these tools as bills during various legislative sessions, meaning that there is already standing bill language ready to move forward and become law.

This Guidebook summarizes a range of legislative proposals available to raise the Lake to a sustainable level for the benefit of all Utahns. The measures proposed here can raise water levels for the Great Salt Lake, but only if Utah legislators vote for them.

Whether Utah legislators find the ethical courage to vote yes on these measures is largely up to you. It is not knowledge that is limiting our ability to raise Great Salt Lake water levels. It is action, or inaction, that is keeping us from succeeding.

The 4,200 Project is a campaign to restore the Great Salt Lake by advancing the measures needed to raise the Lake to the sustainable level widely agreed upon as essential for human health, migratory birds, recreational activities, and the $1.3 billion Lake economy.

Hope is not yet lost for the Great Salt Lake, but the time to act is now. Utahns and conservationists from across the country have a crucial role to play; you have the power to change the fate of the Great Salt Lake.

Executive Director's Perspective:
A Message of Hope If We Can Accept the Truth

Zachary Frankel,
Executive Director of the Utah Rivers Council

The water levels of the Great Salt Lake have been steadily declining since the late 1980's, driven largely by Northern Utah's excessive water use which is experienced by the Lake as reduced water inflows from increasing upstream water diversions. This has created a long-term water deficit in the Great Salt Lake which if left uncorrected, will drive the Lake into further crisis until it is relegated to the same status as many other saline lakes around the globe – existing only in history and memory.

Public concern over the plight of the Great Salt Lake did not erupt until the Lake set two record low water levels within a 12-month period in 2021 and 2022. The world looked to Utah and many people sought leadership and clarity about what was happening inside what we call the water sphere: the nexus of water policy and use, water development, and our aquatic ecosystems.

Americans from coast to coast – who are worried about climate change or those who love birds, or both – have been drawn to stories about the shrinking Great Salt Lake. Bird managers from across the Western Hemisphere look inside Utah and worry about the plight of the millions of migratory birds that travel from their home shores to those at the Great Salt Lake. People outside the U.S. who have seen the decline of saline lakes in their home countries look to Utah with skepticism about whether the Beehive State will succeed in raising Lake levels.

Maps of North America commonly show the Great Salt Lake in its Goldilocks Elevation Zone around 4,200 feet above sea level. The Great Salt Lake is an American treasure that has been entrusted to Utahns to steward for future generations of Americans.

In the face of this global concern, many of Utah's political leaders have failed to inspire the confidence that Utah will keep the Great Salt Lake from disappearing.

Utah's governor called on Utahns to pray for rain. Although the subsequent controversy raised questions about religion and spirituality, that entire debate completely missed the mark of where our focus should be. The governor's call for prayer isn't the problem; it is his cabinet's advancing of water diversion projects through official policy along with his failure to stand up to the special interests that are draining the Lake in the first place.

Utah's governor represents a state with America's highest per person municipal water use, and who is proposing some of the largest new water diversions in the country, one of which would take away the biggest water source to the Great Salt Lake: the Bear River. Diverting the Bear River could reduce the Great Salt Lake by two to four feet in elevation to provide water for the lawns of the Wasatch Front.

Proposed Bear River Development is a policy the Governor not only supports, but is actively planning to initiate permitting for as early as 2028. Some $60 million in sales tax funding is collected each year since the earmark went into effect in 2016, a piggybank for financing the further shrinking of the Great Salt Lake. A bill written by the Utah Rivers Council to redirect this funding toward Lake-saving activities couldn't make it out of committee in the 2023 Utah Legislative Session.

Virtually every map of the United States shows the same shape for the Great Salt Lake that schoolchildren across the globe learn in geography. This shape is based on the Great Salt Lake at the widely-accepted water elevation of 4,200 feet above sea level, the Goldilocks Zone. This is the zone considered by scientists to be the elevation range needed to sustain the $1.3 billion Lake economy.

This level is much higher than the Lake has been at over the last two decades and today's water level has a much smaller total footprint

than these maps depict. Today's troubling era of low Lake levels means spiraling troubles for increased air pollution, fewer migratory birds and disappearing recreation.

In 2023, the Utah Rivers Council partnered with a Utah state senator to propose setting an official Lake level goal, a level that is represented in the millions of maps depicting Utah. As the Great Salt Lake raced downward, Utah's governor called the new legislation to establish a minimum water level goal "a dumb thing" during his monthly press conference.[1] He later told a crowd that he "didn't need a number to tell [him] what level the Great Salt Lake should be at."[2]

We don't have to fight the giant of climate change. We don't have to stop farming. We don't have to dry up every square foot of grass on the Wasatch Front. The simple solutions outlined in The 4,200 Project are the steps needed to move forward in restoring Great Salt Lake water levels.

Utah still has no official goal defining what success looks like at the Great Salt Lake, and no plan to raise water levels to match the representation on those maps of North America. Instead, legislators passed a host of new laws and policies over the last seven years that are designed to encourage and support new water diversions upstream of the Lake. This spells further trouble for this priceless aquatic ecosystem, the largest remaining lake in the American West.

It can be hard to read these words and feel optimistic. Yet, the truth is that it's remarkably easy to solve the problems facing the Great Salt Lake. Each problem is an opportunity waiting to be solved.

We don't have to fight the giant of climate change. We don't have to stop farming. We don't have to dry up every square foot of grass on the Wasatch Front. The simple solutions outlined in The 4,200 Project are the steps needed to move forward in restoring Great Salt Lake water levels.

If we want to save the Great Salt Lake we must raise water levels back up to 4,200 feet, the level widely considered to be the healthy zone where the Lake and all those who rely on it – human or otherwise – can be cherished for our future.

Restoring the Lake means that in addition to our actions to reduce our personal water use, we must hold our elected officials accountable for implementing The 4,200 Project policy measures to save the Great Salt Lake.

If we don't hold our elected officials accountable for saving the Great Salt Lake, who will be at fault: our elected officials or ourselves?

What Can I Do to Save the Great Salt Lake?

Take The 4,200 Project Pledge

SHARE. I will share The 4,200 Project Pledge with my family, friends, neighbors, and my community to encourage others to join the fight to protect the Great Salt Lake. I will share the knowledge I have gained about this campaign via word of mouth, email, social media, or letters to the editor to help increase awareness about these real solutions to the Great Salt Lake crisis.

JOIN. I will join the community of people fighting to restore and protect the Great Salt Lake by volunteering with the Utah Rivers Council, signing up for emails, and being a part of the 4,200 Campaign Network, moving Utah forward to save the Lake. I will also consider supporting The 4,200 Project with a tax-deductible donation to help restore the Great Salt Lake.

ADVOCATE. I will advocate for the Great Salt Lake through lobbying with the Utah Rivers Council at the Utah Statehouse, writing Letters to the Editor about the need to adopt these measures to save the Great Salt Lake, or contacting my local, state and federal elected officials, to encourage them to vote for the policies that will restore and protect the Great Salt Lake as outlined in this Guidebook.

VISIT. I will visit the Great Salt Lake and the Utah Statehouse, and/or observe wasteful water uses in my own community to see for myself the crisis and opportunities to save water firsthand. I will share what I learn with my peers and work to educate decision-makers, stakeholders, and others of influence about the problems I have seen with my own eyes.

VOTE. I will register to vote and support elected officials who take action and offer more than lip service to help save the Great Salt Lake. I will support candidates that I believe are demonstrating action to save the Lake. I will vote against those who I believe are only grandstanding on the Lake's shores or are working to dry up this precious aquatic landscape.

Holding Utah's Leaders Accountable for the Crisis They Created at the Great Salt Lake

In September 2023, the Utah Rivers Council joined a coalition of conservation and community groups in a seminal lawsuit challenging the state of Utah's failure to comply with its mandatory duty to protect the Great Salt Lake—a public resource held in trust by the State.

The scientific consensus shows that the current crisis affecting the Great Salt Lake is primarily the result of upstream water diversions taking an unsustainable amount of water out of the Lake's main tributaries. Under the public trust doctrine, the State has an obligation to review and, where necessary, modify those upstream diversions to protect the health of the Great Salt Lake. Yet the state agencies tasked with this obligation have failed to do so, at great cost to the Great Salt Lake, which has hit record low levels.

This failure is especially troubling because community leaders have raised alarms about the state's inaction and urged officials to protect the lake. Over the last three decades, our organization and many others have proposed a myriad of new water policies, changes to water governance structures, and called for aquatic ecosystem protection for the Great Salt Lake. Stakeholders from across the political spectrum have proposed meaningful reforms to protect the Great Salt Lake, many of which have been implemented successfully in other states around the country.

Yet Utah officials have refused to take effective, substantive steps to protect the Great Salt Lake. Utah legislative leaders have consistently refused to even allow committee debate on these bills. Instead, they have imposed laws that dewater the tributaries of the Great Salt Lake for the benefit of special interest groups.

In the last two years, state leaders have passed a handful of water bills, but they fall far short of addressing the Lake crisis. In fact, as this Guidebook documents in subsequent pages, several of these policies actually open the door to greater harm to the Lake. Two decades into the ongoing Great Salt Lake crisis, the state of Utah still lacks a plan of action to restore the Great Salt Lake to its healthy minimum elevation.

Creating an official elevation goal for raising water levels at the Great Salt Lake is the first and most important step for us to ensure the Lake exists for future generations of people and wildlife.

We cannot ignore the scale of the crisis facing us. Decades of state-approved water diversions and policies designed to encourage water use have pushed the Great Salt Lake to the precipice of collapse. Raising the Great Salt Lake to 4,200 feet from its record low level of 4,188.5 feet would require getting roughly 8.5 million acre-feet of water into the Lake. For every year that the Lake remains below its healthy elevation, more harm accrues – more birds die, more Utahns breathe in toxic dust, and more economic activity is curtailed. We need to raise the Great Salt Lake back to its healthy elevation, and we need to do so as expeditiously as possible.

Given the recalcitrance of the State to act in the best interest of Utahns and the Great Salt Lake, we sought relief from Utah's judicial system, as is our right under the public trust doctrine.

Our court case is based on the foundational principle that the state must protect, not destroy, the natural resources that it holds in trust for the people of Utah. History and precedent have established the public trust doctrine as a fundamental limit on sovereign authority. Indeed, the public trust is grounded in the Utah Constitution. Courts around the country have found that states have a mandatory duty to maintain important ecosystems for trust uses. Mono Lake in California is perhaps the most famous such example, although there are many others.

Our litigation is an essential step forward in compelling the state of Utah to provide real and meaningful protection for the Great Salt Lake. In addition, this Guidebook contains a package of legislative solutions that both Utahns and Americans at large who care about the Great Salt Lake can use to help lift the water levels of the Lake to a sustainable level. The policy measures proposed in this Guidebook represent a solid beginning for restoring the Great Salt Lake, but more must be done to address the Lake's ongoing needs in an era of aridification, climate change, and growing water demands.

Both our litigation and the measures proposed in this Guidebook are essential ingredients in the recipe to save the Great Salt Lake. The immense challenge facing us collectively to sustain the Great Salt Lake for current and future generations will take everything we have. All three branches of government must be working towards a future where the Great Salt Lake is permanently restored. Such leadership requires courage on the part of government officials. Today we find ourselves in a situation where Utah's leaders have not demonstrated the fortitude to stand up to special interests in our statehouse. We must rectify this problem through any lawful means available to us, and we are proud to be part of the coalition seeking a solution to save the Great Salt Lake.

How Much Water Does the Great Salt Lake Need, and When Does It Need It?

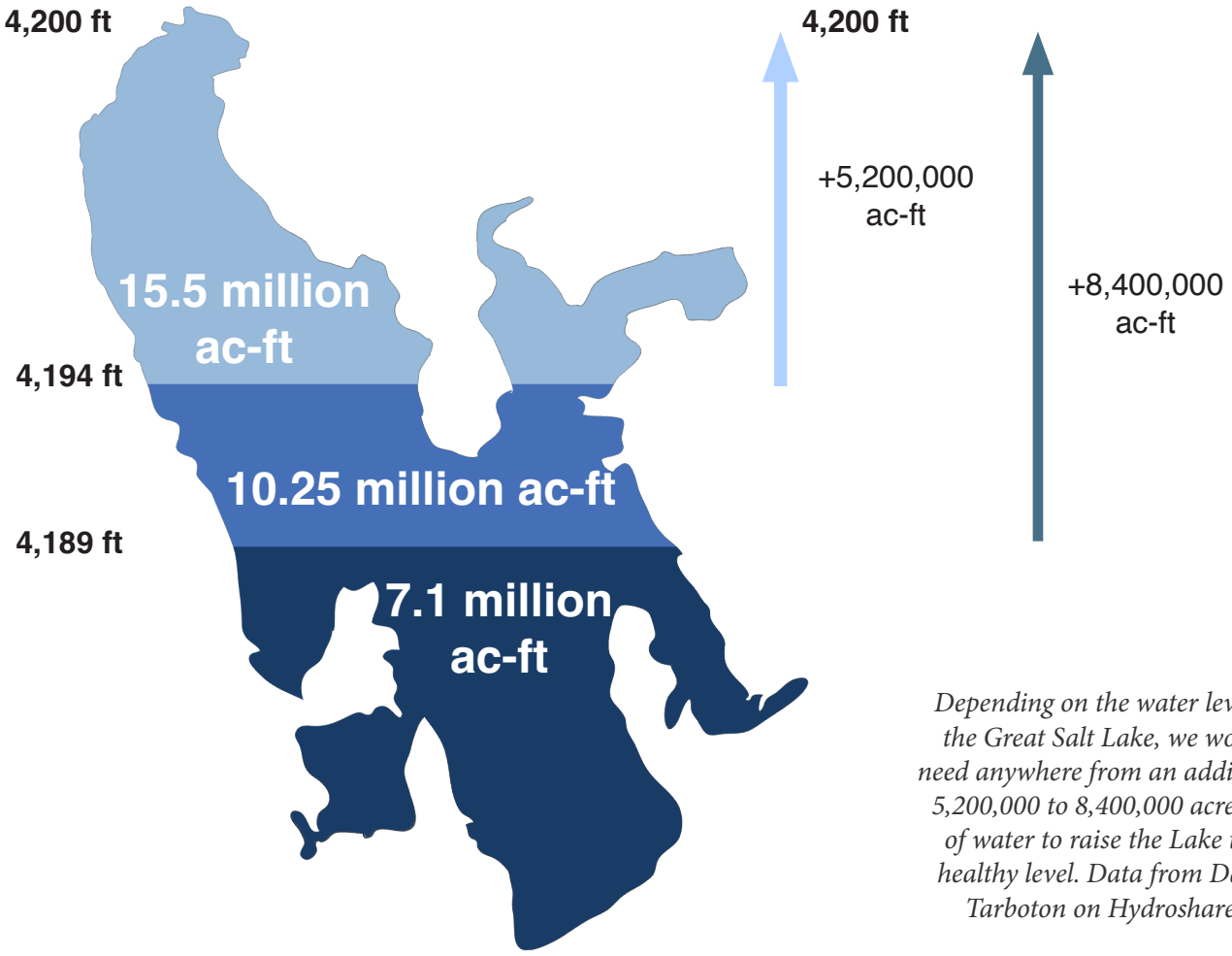
Ever since the Great Salt Lake hit its first historic low in 2021, there has been considerable and widespread public concern about the water level crisis at the Lake.[3] Many Utahns are aware that the healthy range for the Lake is at least 4,198 feet above sea level. We need to get more water to the Lake, but how much water do we need, and how do we do that?

Great Salt Lake Water Volume & Elevation Level

The Great Salt Lake is a large body of water that is one of the largest remaining saltwater lakes in the world.[4] When the Lake's surface elevation is at the top of its healthy range of 4,204 feet above sea level, it holds a little more than 20 million acre-feet of water.[5] That makes it nearly the same size as Lake Powell and Lake Mead, the two largest reservoirs in the United States.[6]

Raising Great Salt Lake water levels to a healthy range will take millions of acre-feet of water. Figure 1 shows how much additional water would be needed to raise the Great Salt Lake to 4,200 feet from its 2023 high point of 4,194 feet and 2022 low point of 4,189 feet.

Figure 1. Water Volume of the Great Salt Lake at Various Elevations



Depending on the water level of the Great Salt Lake, we would need anywhere from an additional 5,200,000 to 8,400,000 acre-feet of water to raise the Lake to a healthy level. Data from David Tarboton on Hydroshare.[7]

The latest decline of the Great Salt Lake began in the 1980's. One can think of its decline as a basic over-spending versus income scenario. For the past several decades, we have been spending more than our income, forcing us to draw from our savings. In other words, over the last few decades we took water inflows (income) through upstream diversions to such a degree that the Lake (our savings) shrank down rapidly. We are in debt, or a water deficit, because the evaporation from the Lake is greater than water inflows entering the Lake and this is why the Lake level has declined. Now we have a pile of debt we need to repay over time to reach solvency. In other words, to bring Great Salt Lake water levels back up to healthy levels we must increase the amount of water being delivered to the Lake by reducing our upstream water diversions.

The Great Salt Lake is critical because it provides a range of ecologic, cultural, economic and other priceless benefits to Utahns, Americans, and to millions of migratory birds. Bryant Olsen photo.

Fortunately, we don't need to repay all this debt in a single year. For example, most homebuyers don't pay off their loan for a house in a single year. Instead, they make a down payment and then spread out the cost of their purchase over many years, consistently putting money toward it until their debt is repaid. We must do the same with the Great Salt Lake.

Great Salt Lake inflows and outflows vary widely year to year, making it difficult to predict what future inflows or outflows will be. However, we calculated past average conditions to help create a ballpark approximation of how much additional water it will take to raise the Great Salt Lake to sustainable levels.

From 2000 to 2022 the Great Salt Lake saw average inflows of approximately 1,672,000 acre-feet per year.[8] Over that same time period, average net evaporation was roughly 2,000,000 acre-feet per year.[9] This means that, if we assume the Great Salt Lake will continue experiencing roughly average inflows and net evaporation, we can expect the Lake to lose 328,000 acre-feet per year. Figure 2 summarizes this.

Figure 2. Great Salt Lake Water Volume Loss

	Inflows	Outflows (Net Evap.)	Change in Volume
2000 – 2022 Average	1,672,000	2,000,000	-328,000

If we assume that the Great Salt Lake will continue to experience average inflows and evaporation, then we can expect it to lose approximately 328,000 acre-feet of water per year. Note, this is a ballpark approximation for illustrative purposes. Actual changes in Lake volume in any given year can vary greatly depending on snowpack, weather, and upstream diversions.

If left as is, the Great Salt Lake will continue to decline in the long run, compounding the present-day problems and exacerbating this crisis with a series of lower and lower record low water levels in coming years. We cannot leave the restoration of the Great Salt Lake up to Mother Nature alone. We need to intervene to supply more water to the Lake.

The Great Salt Lake as seen from Antelope Island. Water levels at the Great Salt Lake are so low that Antelope Island has been connected to the mainland for many years now. If we do not raise Great Salt Lake levels, the same fate could befall many of the Lake's other important islands as well.

Figure 3 shows us approximately how much additional water is needed each year to raise the Lake back to its healthy range. This approach is an updated version of the one used by the Utah Rivers Council during a 2022 presentation on the Great Salt Lake at the Salt Lake County Watershed Symposium and is similar to the approach adopted by the Great Salt Lake Strike Team in their 2023 report.[10,11]

Figure 3. Water We Need to Supply to the Lake Annually to Reach 4,200 feet

		Timeline to Reach 4,200 Feet:		
Water Year	**Starting Level**	**5 years**	**10 years**	**20 years**
2022	**4,189 ft**	1,996	1,162	745
2023	**4,194 ft**	1,370	849	589

This figure shows how much additional water we need to supply to the Great Salt Lake each year on average to raise the Lake from 4,194 feet to 4,200 feet. The analysis assumes inflows of 1,672,000 acre-feet and net evaporation of 2,000,000 acre-feet per year. Values are in thousands of acre-feet.

Where can we get the water to meet these targets?

Figure 4 shows what is referred to as depletion or consumptive use; this is different from diversion. For example, when a farmer diverts water from a river to flood irrigated crops, a portion of the water evaporates, a portion of the water is consumed by crops, a portion of the water seeps into the ground, and a portion of water returns to the river after it flows across the land. In general, the amount of water that did not return to the river is known as depletion.

Figure 4 lists the depletions for different uses of Great Salt Lake tributary water. These water depletions are the 'buckets' we can pull from to get additional water to the Great Salt Lake to meet the goals outlined above.

Figure 4. Average Water Depletions in Great Salt Lake Basin by Sector, 2016-2020

	Average Depletion
Agriculture	1,300,000
Municipal & Industrial	381,000
Mineral Extraction	163,000
TOTAL	1,844,000

The average amount of water depleted – prevented from returning to the river – by sector. By conserving water, we can free up some of this depleted water and send it to the Great Salt Lake. Data from Great Salt Lake Strike Team.[12]

What is the Water Budget for the Great Salt Lake?

Scientists have worked to create a water budget for the Great Salt Lake, which is an accounting of the movement of water in a system.[13] There are three main components to any lake's water budget: inflows to the Lake, outflows from the Lake, and the overall amount of water in the Lake itself.[14] In the Great Salt Lake Basin, these three components interact with each other according to the following simplified equation:

Change in Water Volume & Lake Level = (Bear Inflows + Weber Inflows + Jordan Inflows + Other Surface Inflows + Groundwater Inflows) – (Evaporation – Direct Precipitation)

Think of a water budget like your own household budget where you probably have some form of income (equivalent to inflows in this example), expenses (equivalent to outflows), and savings (equivalent to the amount of water in the lake).

If you make more money than you spend, your savings will grow. If you spend more money than you make, your savings will shrink. To raise Great Salt Lake levels, we need to ensure that more water enters the Lake than is leaving it through evaporation.

The Great Salt Lake with the Wasatch Mountains in the background. Mountain snow provides the majority of the water to the Great Salt Lake each year through the Bear, the Weber and the Jordan Rivers.

Great Salt Lake Water Inflows

The Great Salt Lake reached peak elevation and a historic high in the late 1980's and has been gradually declining since.[15] This is a result of many factors, one of the largest being a steady decline in inflows to the Great Salt Lake from tributary rivers because of upstream diversion projects that prevent the river water from reaching the Lake.

The three main tributary rivers that supply a majority of the water to the Great Salt Lake are the Bear, Weber, and Jordan Rivers.[16] While the total water supplied by any of these rivers into the Great Salt Lake varies year to year – a result both of upstream water diversions and normal year to year fluctuations in snowpack – they typically supply at least 60 percent of the inflows to the Great Salt Lake.[17]

These rivers have been heavily developed and now host many substantial water diversions, the main driver of declining inflows.[18,19,20] These diversions have reduced inflows approximately 39 percent, leading to an overall decline in the water volume of the Great Salt Lake of 64 percent.[21] Future water development proposals such as the Bear River Development project and other proposed new water diversions could exacerbate this problem by further reducing inflows which could lower Lake levels an additional 5 feet.[22]

The Bear River is the single largest surface water source for the Great Salt Lake. Despite the Great Salt Lake continuing to spiral into crisis, new water diversion projects that would further drop the elevation of the Lake are advancing. Thomas Okeefe photo.

Climate change also seems to have played a role in reduced inflows and increased evaporation.[23] The science on the effects of climate change in the Great Salt Lake Basin is somewhat limited, though key estimates have been made. To date, climate change is estimated to have accounted for 8 to 11 percent of the Great Salt Lake's decline,[24] and recent studies show that the effects of climate change could soon ramp up significantly in the Basin.[25] One recent paper estimated that climate change could contribute to an additional 3 foot decline in Great Salt Lake levels by 2050.[26]

While the Bear, Weber, and Jordan rivers are an essential component of inflows to the Great Salt Lake, there are other, smaller sources of inflow, such as groundwater (estimated to contribute 75,000 acre-feet per year) and other miscellaneous inflows (estimated to contribute 23,000 acre-feet per year).[27]

Figure 5 summarizes the above information and shows the amounts of water the major sources of inflows have brought to the Great Salt Lake on average this century. Note that Great Salt Lake inflows vary greatly each year, and some inflows can only be roughly estimated. The following figures should be viewed as a ballpark approximation for illustrative purposes.

Figure 5. Major Inflows to the Great Salt Lake, acre-feet/year

	Bear River	Weber River	Jordan River	Misc. Surface Inflows	Groundwater	TOTAL
2000-2022 Average	955,000	226,000	393,000	23,000	75,000	1,672,000

Estimates of major inflows to the Great Salt Lake. Data from David Tarboton on Hydroshare,[28] and Waddel and Fields.[29]

Great Salt Lake Water Outflows

As a terminal lake, the Great Salt Lake has no rivers drawing water out of it.[30] The only source of outflow from the Great Salt Lake is evaporation.[31] Since the Great Salt Lake is wide, shallow, and resides in an arid environment, this evaporation can produce large outflows.

The Great Salt Lake naturally is an environment already prone to evaporation because of its shallow depth and salinity, but as the Lake continues to drop in elevation, evaporation of the remaining surface water will continue, further depleting the Lake.

Evaporation from the Great Salt Lake is difficult to measure and even more difficult to predict. Factors such as salinity, surface area, air temperature, wind, and direct precipitation to the Lake all combine to produce differing rates of evaporation.[32] Scientists have been able to reconstruct previous years' evaporation amounts and estimate that evaporation from the Lake ranges from approximately 2,000,000 to 4,000,000 acre-feet per year.[33,34,35,36] To simplify, we used the years 2000 to 2020 and their rough average annual net evaporation from the Great Salt Lake – that is, evaporation minus direct precipitation – to land at a rate of 2,000,000 acre-feet.[37]

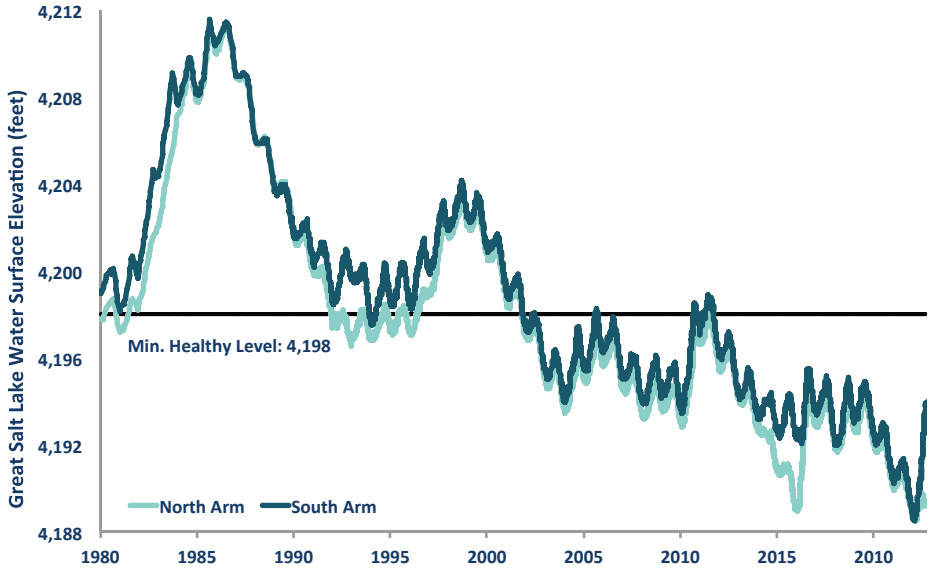
Why Do We Need to Raise Great Salt Lake Water Levels?

The Great Salt Lake is critically important because it provides many economic, ecologic, cultural, and other priceless benefits to Utahns, Americans, and to the millions of migratory birds traveling across the Western Hemisphere who stop at the Lake each year.[38] It's likely that you or somebody you know has spent time bird watching in the Lake's wetlands, hiking on Antelope Island, sailing or rowing on the Lake, fishing for brine shrimp eggs, hunting waterfowl that call the Lake home, breathing fresh air, or otherwise benefitting from one of the other many ecosystem services the Lake provides.

These benefits can only be realized if Great Salt Lake water levels are high enough to maintain this habitat and the economic and recreational activities that have become a part of Utah. A collection of scientific studies has found that when water levels in the Great Salt Lake are below 4,198 feet in elevation, resources suffer from a double blow of lack of water and increased salinity levels. These studies have concluded that a healthy Great Salt Lake is in the 'Goldilocks Zone' between 4,198 and 4,204 feet in elevation. Since these studies' publication in the early 2010's, numerous other papers, reports, and scientific studies uphold these findings.[39,40,41,42]

Unfortunately, as shown by Figure 6, the Great Salt Lake has been far from this healthy range for some time now.

Figure 6. Great Salt Lake Water Levels, 1980-2023



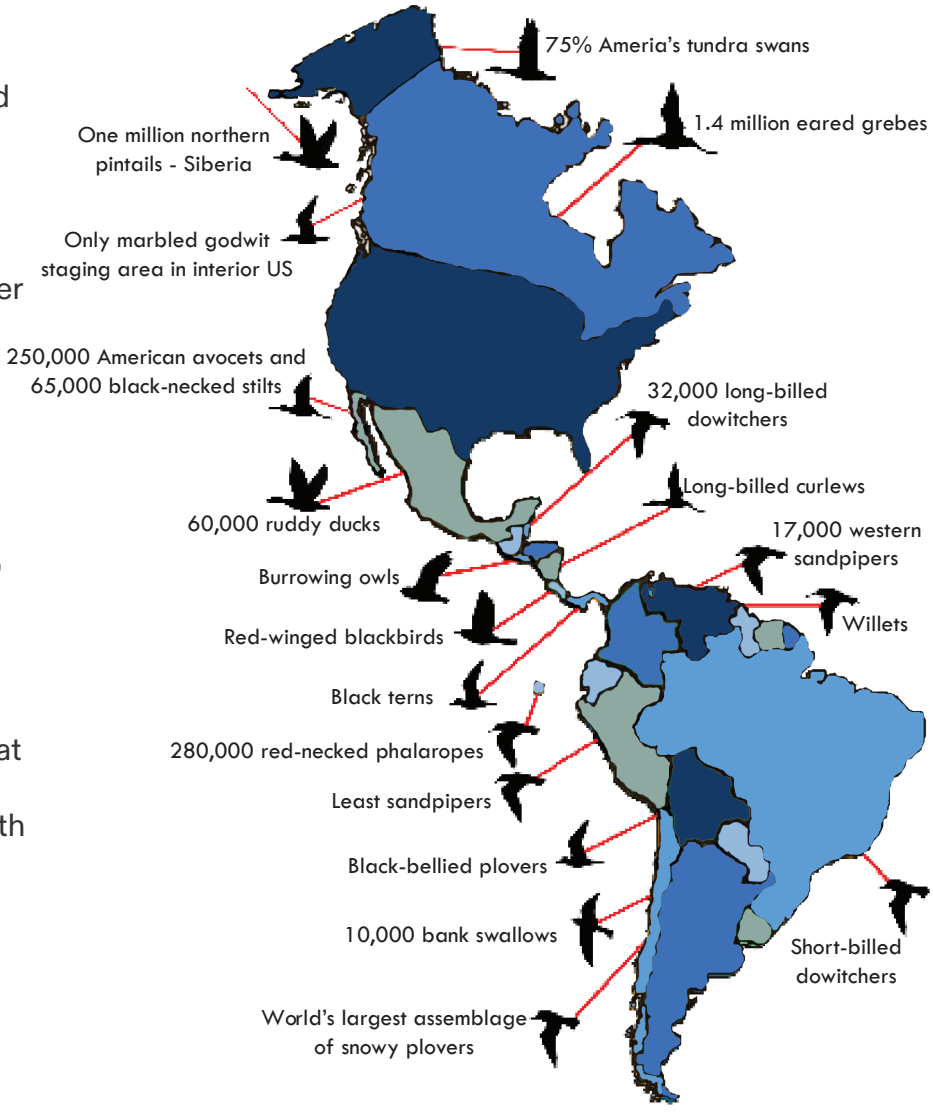
Both the North and South Arms of the Great Salt Lake – which are divided by a railroad causeway — have been in decline since the late 1980's and have mostly been below the 4,198-foot minimum healthy level since the start of the 21st century. Data from USGS.[43,44]

This body of science makes clear that low Great Salt Lake levels seriously impede the functioning of ecosystem services and impose a myriad of deleterious impacts to the resources we care about as Utahns in Northern Utah.

Wetlands

Within the boundary of the Great Salt Lake (also known as the meander line), an estimated 360,000 acres of wetlands account for approximately 75 percent of the total wetland[45] acreage in the state.[46] These wetlands fulfill a number of critical ecosystem services, including but not limited to providing nesting and hunting habitat for millions of migratory birds,[47,48] supporting numerous species of native plants,[49] improving water quality by removing pollutants and sediments,[50] sequestering carbon,[51] and providing important food sources for a range of animal species.[52] It is not an exaggeration to say that the Great Salt Lake's wetlands are some of the most important ecosystems in Utah.

There are two main types of wetlands in the Great Salt Lake: fringe and impounded. Impounded wetlands' water flow is controlled by dams, dikes, berms, canals, and other conveyance methods. A prime example is the Bear River Migratory Bird Refuge, where water from the Bear River is diverted into man-made canals to spread it out and artificially replicate the natural branching that occurs at undisturbed deltas.[53] Although the Refuge had extensive natural wetlands when it was established, the U.S. Fish and Wildlife Service sought to increase the acreages of wetlands over time. Fringe wetlands, on the other hand, are the 'naturally forming' wetlands that occur on the shores of the Great Salt Lake, especially near the mouth of tributary rivers.[54]



Millions of migratory birds rely on a healthy Great Salt Lake for their journey across the Western Hemisphere. At low Lake levels, the health of these crucial wetland ecosystems greatly declines.

At low Great Salt Lake levels, many of the wetlands (with the exception of a few impounded wetlands), are left high and dry, which can lead to desiccation.[55] This results in a loss of critical habitat for many migratory birds and a loss of open water/mudflat interface, which is critical habitat for shorebirds.[56]

Low Great Salt Lake levels also make it easier for the invasive Phragmites species to take hold. If left unchecked, these invasive species can quickly overrun native species and diminish the biodiversity of wetlands, thereby inhibiting the function of many of the aforementioned ecosystem services.[57]

Air Quality

The Great Salt Lake is a wide, shallow lake, meaning that even relatively small declines in the water surface elevation of the Lake can expose huge tracts of lakebed (sometimes also referred to as playa). The exposed lakebed of the Great Salt Lake contains many fine grains of dust, heavy metals, and other harmful compounds such as arsenic and mercury.[58,59,60]

When winds blow across the exposed lakebed, it picks up these dust particles – some of which include heavy metals and other harmful compounds – and transports the molecules toward Utah's population centers between the Great Salt Lake and the Wasatch and Oquirrh mountain ranges. These dust emissions from the Lake greatly reduce the air quality in urban areas near the Lake, and they have been shown to lead to a number of negative health impacts, including asthma, respiratory infections, and lung cancer.[61]

Dust storms approaching Salt Lake City from the Great Salt Lake lakebed, 2018.

As Great Salt Lake levels shrink, more lakebed is exposed, which increases the frequency and magnitude of these dust events.[62] The longer the lakebed is exposed the more likely firm portions of the surface will erode and break into smaller and finer pieces.[63] These fine pieces could potentially be picked up and carried via wind toward Utah's population centers. This means that air quality impacts from the Great Salt Lake will continue to worsen until the water level of the Lake rises to 4,200 feet. At that elevation, approximately 80 percent of the dust hotspots are covered.[64]

Islands Exposed to Predators

Depending on Great Salt Lake levels, the Lake can be home to up to eleven islands. These islands are naturally-protected landscapes and are out of reach of predators. For this reason, these islands provide important nesting habitat and resting locations for migratory birds. But at low Great Salt Lake levels, many of these islands become connected to the mainland via land bridges, making them accessible to predators. This ruins the safe haven these islands previously provided migratory bird species, and lowering water levels can have huge impacts on specific bird populations.[65]

Gunnison Island was home to one of the largest breeding colonies of American White Pelicans in North America, hosting approximately 10,000 nests.[66] But declining water levels have connected the island to the mainland, allowing predators like coyotes access to the island where they prey on juveniles that cannot yet fly. This predation led to a drop in the number of American white pelicans since the nesting sites were no longer safe for juveniles.[67] A 2019 survey identified just over 3,400 nesting sites, a decline of roughly 66 percent.[68]

Brine Shrimp and Brine Flies

The Great Salt Lake ecosystem is well-known for two important animals: brine shrimp and brine flies. These two invertebrates play a key role in the Great Salt Lake ecosystem,[69] serving to keep the primary producer in the Great Salt Lake ecosystem, phytoplankton, in check. These animals are also a critical food source for many species in the Great Salt Lake ecosystem, most notably millions of migratory birds.[70] A decline in either of these animals' populations would have serious impacts to the Great Salt Lake ecosystem.

Gunnison Island is home to one of the largest American White Pelican rookeries in North America. Low Great Salt Lake levels allow predators to reach the island, which has devastating effects on the breeding Pelicans.

Despite their name, brine flies cannot survive in water that is too salty. This is a problem because as Great Salt Lake levels drop, there is less water to dilute salt, making Great Salt Lake waters more saline. This has a negative effect on brine fly populations, whose breeding, life cycle, and food sources are affected.[71] In 2022, for example, brine fly populations crashed as a result of low water levels and hyper-saline waters.[72]

Brine shrimp are also highly sensitive to temperature and cannot survive if the water is warmer than 85°F and colder than 40°F.[73] Low Great Salt Lake levels make water temperatures more susceptible to rapid change, as it takes less energy to heat and cool smaller volumes of water. This could push temperatures out of the habitable, or at least comfortable, range for brine shrimp. Coupled with increases in salinity, this puts negative pressures on brine shrimp populations, which in turn affects phytoplankton and bird (especially eared grebe) populations.[74]

Recreation

The Great Salt Lake is home to many types of motorized and non-motorized recreation, nearly all of which is adversely impacted by low Lake levels. Below 4,194 most of the Great Salt Lake boat launches become difficult to use. At 4,192, the launches become unusable entirely.[75] In 2022, low water levels at the Great Salt Lake forced members of the Great Salt Lake Yacht Club to remove their boats from the water via a costly process of lifting them by crane, for the second time in 10 years.[76] Similarly, the Great Salt Lake Rowing Club – which has rowed on the Lake without interruption for 20 years – was forced to stop rowing in the Lake due to low Lake levels.[77]

At low Great Salt Lake levels, duck populations may also suffer and access to key duck hunting grounds via small boat may be limited or impossible.[78] Additionally, at low Great Salt Lake levels, the water line retreats – sometimes quite far – from existing beaches, trails, and lookouts, leaving behind dusty and visually uninteresting playa. This can adversely impact the visual resources of the Lake,[79] as well as more casual forms of recreation like hiking and swimming.

Sailboats were removed from Great Salt Lake because of dropping water levels at the Great Salt Lake Marina.

How Utah's Water Policies Are Made

If we want to save the Great Salt Lake, we need to understand how proposed policy changes get implemented in Utah and who most strongly influences that process.

Most water policies are written at the Utah Legislature, where many water lobbyists write new legislation to benefit their industry's clients. An idea for a water policy is written into a proposed bill, which a legislator must then sponsor.[80] The sponsor then guides that bill through several votes in both committee meetings and on the floor of the House of Representatives and on the floor of the Senate.[81] If a bill receives a 'yes' vote from a majority of the members present in both committees and on each chamber floor, the bill passes. The governor can then opt to sign the bill, which officially makes it a law.[82]

The Utah legislative session lasts just 45 days and the process is often highly charged and may include subterfuge. It is common for legislators to introduce a combined total of more than 1,000 bills during the session, making it a nearly impossible feat for any legislator to read every bill, much less understand the often-complicated context of each one. This is where lobbyists come in.

The Utah Statehouse. Many forces are at play in this building that influence water policy, including water lobbyists who work for the water conservancy districts which wield immense influence in thie legislature and in the Utah media. Photo by Andrew Smith via Wikimedia Commons.

Legislators rely heavily on subject matter experts – or at least those who proclaim to be subject matter experts – to help them form opinions and stances on legislation.[83] As you may imagine, this process is heavily influenced by clout and personal relationships.[84, 85] If a lobbyist is well connected and respected, it's likely they'll be able to influence more legislators to vote in a way that supports their agenda. That is partly why lobbyists seek to build relationships with legislators outside the legislature through events, meals, and recreation activities like golf.

Water Districts as a Special Interest

In Utah water policy spheres, there is one special interest group that dominates this lobbying process to push their legislative agenda: Utah's water districts.

Many Utah residents are likely familiar with their retail water suppliers – the city that appears at the top of their water bill. But few know what a water district is, or the immense lobbying power this water agency has. A water district is a quasi-governmental agency that may control infrastructure that physically diverts water from a river and which typically wholesales water to city water suppliers (aka "retailer water suppliers").[86] These water districts sit at the top of the food chain, with significant amounts of power and very few regulatory or democratic controls, allowing them to have significant influence over state spending and legislation, including environmental policies on rivers and lakes, and whether or not a Utah river has water in it.

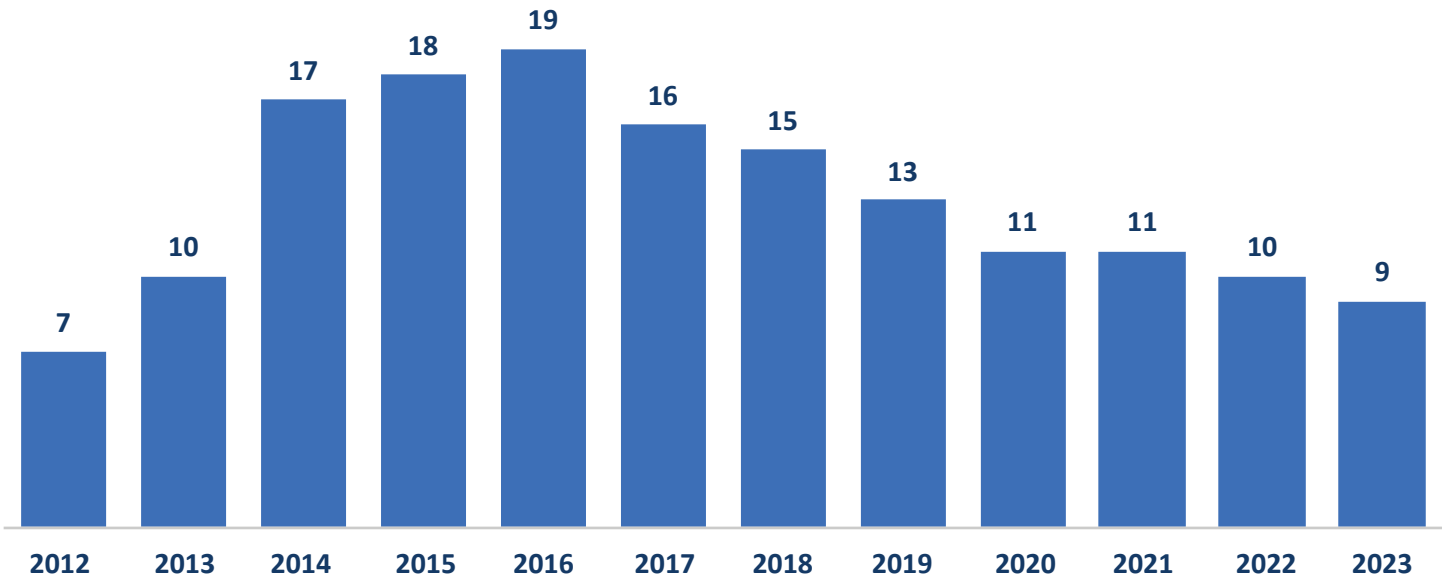
These water districts are incredibly well funded, often pulling in revenues in the high tens of millions of dollars, about a quarter of which comes from property taxes – that is taxes on housing, businesses and automobiles.[87] Some water districts receive the majority of their revenues from this property tax, and because their boards are appointed into office, they are largely insulated from public scrutiny and democratic controls.

Lobbyists comingle with members of the public in front of the House of Representatives at the Utah Legislature

Utah's water districts are so wealthy the Salt Lake Tribune recently published an article titled, "Report: Utah's water districts are swimming in tax revenues."[88] And, the Washington County Water District – one of the largest wholesale water suppliers in the state – is currently being sued by a collection of homebuilders and residential developers for over collecting and hoarding the revenues from impact fees.[89] The general managers of these water districts are also some of the most highly-paid public officials in Utah, receiving salaries larger than those of the governor and the attorney general.[90]

This vast wealth network allows these water districts to employ an army of lobbyists to influence water policies at the Utah Legislature. Figure 7 shows the number of registered lobbyists employed by these water districts each year from 2012 to 2023.

Figure 7. Lobbyists Employed by Utah Water Districts, 2012-2023



Utah's four big water districts – the Central Utah, Weber Basin, Washington County, and Jordan Valley water districts – have employed a figurative army of lobbyists over the past decade to advance their agenda at the Utah Legislature. Data from the Lt. Governor's lobbying website.[91] Water district staff may also lobby at the Utah Legislature but are exempt from having to register as lobbyists, making this list of lobbyists only a starting point.

The lobbyists employed by these water districts are powerful and have great influence at the Utah Legislature. Of the nearly two dozen lobbyists employed by these water districts, four are former members of the Utah House of Representatives. This list includes a former Speaker of the House and former House Majority Leader, a former member of the Utah Senate, and a former Chief of Staff for a Speaker of the House, plus a former Executive Director of the Utah Republican Party.[92]

Unsurprisingly, these high-powered lobbyists are not cheap, and Utah's water districts have paid many millions of dollars for their services, in addition to the huge salaries of the districts' staff leaders who frequently lobby legislators inside and outside the statehouse. When staff of water districts lobby Utah legislators, they are exempt from having to register as lobbyists. Figure 8 shows how much money Utah's four largest water districts have spent on a single lobbying firm, Finlinson & Finlinson, since 2014.

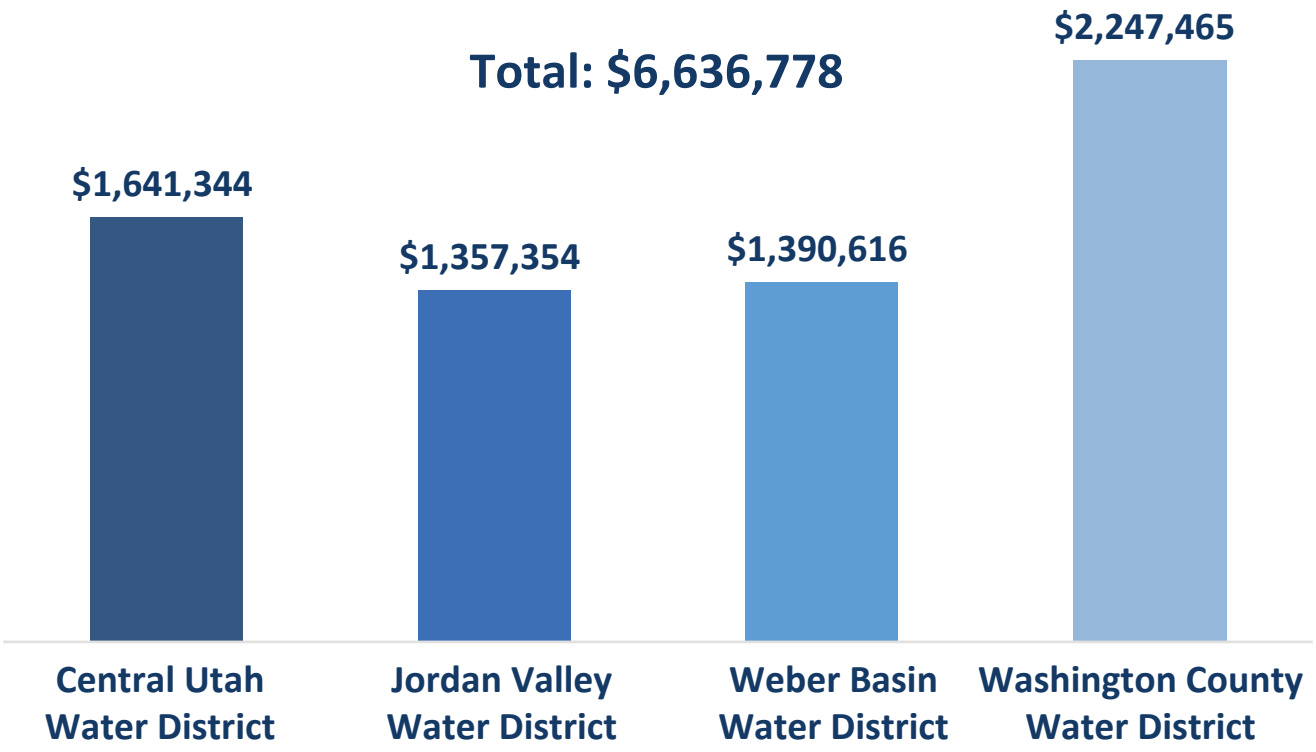
Utah's water districts have a clear agenda when it comes to water policy. For decades, these water districts have been proposing and advancing large and expensive new water diversions of Utah's rivers and opposing substantive water conservation bills.[94,95] The largest water project these agencies have been advancing is a massive and destructive water proposal called Bear River Development.[96]

This $2.9 billion project would include three to four new dams on the Bear River to divert water for lawns and gardens along the Wasatch Front.[97] Because the Bear River is the single largest source of surface water to the Great Salt Lake, it has been estimated that removing more water from this key tributary could further reduce the water level of the Great Salt Lake two to three feet in elevation.[98,99]

Projects like these are potential financial boons for Utah's water districts, and these districts work hard to ensure the Utah Legislature only advances policies that are friendly to the development of dams and pipelines.

One of the most consequential Great Salt Lake related bills was Senate Bill 281, which passed in the 2015 legislative session.[100] This bill was sponsored by Senate President Stuart Adams, one of the most powerful legislators at the statehouse. The measure created a new restricted account and directed a percentage of Utah's sales tax revenues into the account each year. The account was established exclusively to fund proposed Bear River Development and the Lake Powell Pipeline.[101] Since the bill passed, the account has collected approximately $179 million as of 2023.[102]

Figure 8. Water District Payments to Finlinson & Finlinson Lobbying Firm, 2014-2023



Since 2014, four water districts in Utah have paid a single lobbying firm nearly $7,000,000 to advance their agenda at the Utah Legislature. Data from Transparent Utah.[93]

10 Reasons Northern Utah Cities Don't Need

1. Utah has some of the highest municipal water use (per person) in the nation and very weak water conservation goals.[103,104] Reducing water use to that of other western communities would free up substantial amounts of water.

2. Proponents of Bear River Development have long used bogus water demand forecasts to inflate future water needs to create a false justification for the project. These forecasts have been proven to be vacuous and false.[105]

3. Municipal water use accounts for just 10 percent of the total water depletions in the Great Salt Lake Basin,[106] with most of this water used to overwater grass landscapes in the summer. Separating water needs from water uses is really important, since we could reduce our outdoor municipal water use significantly, simply through efficiency and conservation measures.

4. Our municipal water supply is growing as we pave irrigated farmland.[107]

5. Water demand forecasts for Bear River Development are over a decade old and assume that virtually all farmland in Northern Utah will be replaced by urban development.[108] Such a change would create a massive surplus of water since agriculture uses the vast majority of Utah's total water.

Fall at the Bear River Migratory Bird Refuge.

Water from Bear River Development

6. Utah has some of America's cheapest municipal water rates because the state incentivizes water waste through property tax collections on housing, businesses and automobiles to lower the price of water. The water districts that receive these taxes lobby hard to keep them in place instead of embracing basic market economics.[109]

7. Utah has a uniquely high amount of secondary water use, which is extremely wasteful because of old and inefficient infrastructure used to convey this water (e.g. unlined dirt canals), the large-scale lack of meters, and the dirt-cheap price of secondary water.

8. Utah's water agencies have actively blocked water conservation at the Utah Legislature for decades, dismantling meaningful measures in place of highly visible but rather ineffective efforts.[110]

9. Water demand forecasts ignore how much less water will be used in the future as the price of water rises with population growth.[111,112] The correlation between increasing water price and decreasing water use have been embraced across the globe, yet Utah lags in using water bills as an incentive to reduce water use.

10. Proposed Bear River Development would substantially lower the Great Salt Lake, creating dust storms in nearby communities with serious health consequences to populations downwind.[113] The project is prohibitively expensive and would impose massive debt burdens on communities that lack the ability to pay for the project.[114] Such costs would necessitate substantial water rate increases that would significantly reduce water use, contributing to the project's uselessness.

One of some 250,000 American avocets that stop at the Great Salt Lake in their migrations across the planet.

The 4,200 Project Policy Proposals

The 4,200 Project Policy Categories

The Bear River in its headwaters on the north slope of the Uinta Mountains. The Bear River is critical to the future and health of the Great Salt Lake.

1. Set 4,200 Feet as the Great Salt Lake Water Level Restoration Goal

"If you don't know where you are going, any road will get you there."

Creating an official elevation goal for raising water levels at the Great Salt Lake is the first and most important step for us to ensure the Lake exists for future generations of people and wildlife.

To understand why this is the case, let's look again at the scenario of a prospective homebuyer seeking to borrow money to purchase a house. Since buying a house is an expensive endeavor, most homebuyers take decades to pay for this costly possession. Prospective homebuyers must compare their income to the amount of debt payments they must make each month for the next 30 years.

Now imagine a prospective homebuyer who puts aside just a smattering of pennies each month for their mortgage payment while they continue to overspend with extravagant credit card purchases. Over time that person's debt drowns them, and their pile of pennies isn't big enough to pay off tens of thousands of dollars in credit card debt, much less take out a loan for a home.

That metaphor perfectly fits Utah's failure to set an elevation goal to raise water levels at the Great Salt Lake. There cannot be an effective plan to restore the Great Salt Lake if there is no water level goal to aim for and to guide us in delivering enough water to the Lake. The State of Utah owes millions and millions of acre-feet of water debt to the Great Salt Lake and the debt is continuing to grow. Instead of devising a plan to pay this debt, Utah is effectively throwing pennies in a coffee can by celebrating the delivery of relatively small amounts of water that won't raise water levels.

The volume of water needed to raise the Great Salt Lake is so massive, it will take us many years to deliver enough water to reach 4,200 feet. In the fall of 2022, when the Lake was at its low of 4,189 feet, we would have needed to supply an additional 8,400,000 acre-feet of water to raise the Lake to 4,200 feet.[115]

We cannot physically deliver the extra water the Lake needs in a single year. If every man, woman and child on every farm and in every city in the Great Salt Lake Basin stopped using water, at that elevation it would take more than four years to raise Lake levels to 4,200 feet.[116] That is, of course, not going to happen. We need to spread out water deliveries to the Great Salt Lake over many years, just as one spends years paying off the loan to purchase a house.

American avocet in the shallow waters of the Great Salt Lake. Photo by Alan Vernon.

Utah's large and unsustainable water diversions upstream of the Great Salt Lake (our spending) is leading to the rapid decline in the lake's elevation (our increasing debt).[117] Much of the public recognizes that Utah is effectively in Mother Nature's bankruptcy court with the Great Salt Lake, but the state refuses to establish a savings goal, and therefore, has no plan to get us out of water debt.

The Utah Rivers Council helped draft Senator Nate Blouin's nonbinding resolution in the 2023 General Session to set 4,198 feet as the official minimum water surface elevation goal for the Great Salt Lake.[118] This elevation goal was selected because the best available science indicates that below 4,198 feet, the habitat, recreation, and economic activities at the Lake are heavily degraded and become adversely affected. [119,120] The Utah Rivers Council has since raised the minimum water surface elevation goal to 4,200 feet to create a buffer to ensure Utah sets a water-savings goal large enough to restore the Lake.

It's important to note that any goal established via a nonbinding resolution would only serve as a guidepost toward which we can collectively direct our actions. In other words, a resolution has no regulatory impact to ensure that the Great Salt Lake receives enough water to sustain migratory birds, recreation interests, economic development or protect public health. Yet this is an important first step as it officially acknowledges the scientific consensus around maintaining a healthy lake level.

A range of scientists, a chorus of businesses and academic institutions, and members of the public all expressed their support for this legislation.[121,122,123] Yet the Utah Legislature refused to let this bill out of committee during the 2023 General Session.[124] When asked about the bill during his monthly press conference, Utah Governor Spencer Cox ridiculed the measure, calling it "a dumb thing."[125]

Establishing an official state goal is critical to raising Great Salt Lake water levels because the task itself is immensely difficult and requires large volumes of water to flow from both farms and cities and to the Lake over many years.

Figure 9 provides ballpark estimates of the amount of water it may take to raise the Great Salt Lake to certain elevation thresholds in set periods of time. The analysis shown in the table assumes that the Great Salt Lake will continue to experience roughly the same average conditions that it did during the 2000 to 2022 period when inflows were 1,672,000 acre-feet and net evaporation was 2,000,000 acre-feet per year.

Figure 9. Additional Water We Need to Supply to the Great Salt Lake Annually to Reach Elevation Goals

		Timeline to Reach 4,200 Feet:		
Water Year	**Starting Level**	**5 years**	**10 years**	**20 years**
2022	**4,189 ft**	1,996	1,162	745
2023	**4,194 ft**	1,370	849	589

This figure shows how much additional water we need to supply to the Great Salt Lake each year on average to raise the Lake from 4,194 or 4,189 feet to 4,200 feet in a specified time period. The analysis assumes inflows of 1,672,000 acre-feet and net evaporation of 2,000,000 acre-feet per year. Values are in thousands of acre-feet.

There are good proposals to increase water volumes to the Great Salt Lake, as this Guidebook documents. But there is resistance to implementing these new measures in many quarters of Utah, and the water lobbyists from various special interests have convinced Utah legislators and the Utah governor not to support a Lake elevation goal because it will require increased amounts of water to flow naturally into the Lake. This refusal to allow substantial amounts of water to flow into the Great Salt Lake is the reason Utah has not set a water elevation goal for the Lake.

Because the Utah Governor and the Utah Legislature refuse to set a savings goal for the Great Salt Lake, no substantive measures are required to be implemented to raise Lake levels. Put more simply, because Utah has failed to plan, it is effectively planning to fail.

Establishing 4,200 feet as the official goal for the water level of the Great Salt Lake is vital because it enables residents, businesses, institutions, and all water suppliers to work together for the common purpose of providing enough water to this critical ecosystem to lift water levels to a healthy range. Setting an elevation goal means transparency and a necessary, common objective our state is working to implement.

The Utah Legislature needs to adopt 4,200 feet as the official goal for the water level of the Great Salt Lake to ensure the Lake does not disappear.

Not having a Great Salt Lake water level goal means that any amount of water sent to the Lake can be falsely called a success, which is exactly what is happening today. Delivering small amounts of water to the Lake and calling it a success is creating confusion among the public over whether our collective efforts to lift Lake levels are enough. It is just like trying to save up to purchase a mansion by throwing loose change into a coffee can. Some in the media are eager to report feel-good stories about the Lake and have published stories that fail to recognize the magnitude of water needed to lift Lake levels. This action does not hold elected officials and state government accountable, which is one of the functions of an independent media.

In this way, the muddy messages actually hamper efforts to get large amounts of water to the Lake and represent a distraction. While many people are unaware of how much water is needed to lift Lake levels, the message being presented is that very small water deliveries to the Lake are very big successes. Members of the public should be especially careful about cheering on water volumes described in gallons, instead of acre-feet.

Sailboat cruising the glassy waters of the Great Salt Lake near sunset. Zachary Frankel photograph.

Problem and Solution Summarized

Problem: Utah has not officially set a minimum goal for the water surface elevation of the Great Salt Lake, and therefore has no plan to deliver the minimum necessary water volumes to raise the Lake to sustainable levels, or even keep it from shrinking dramatically.

Solution: Pass SCR6 from the 2023 General Session, which officially sets an elevation goal for the Great Salt Lake. This will allow us to begin saving water for the Lake in large enough volumes to raise Lake levels over time.

325,851 Gallons of Water to the Lake – Is That a Lot?

The standard unit of measurement in water is the acre-foot – an amount of water that covers one acre of land one foot deep. In many southwestern communities, an acre-foot of water is equivalent to the amount of water two to four households use in a year.[126] An acre-foot of water is a large amount of water, and when converted into gallons, it sounds even larger.

Some Utah media have lauded elected officials or water suppliers for delivering what sounds like many gallons of water to the Lake, including one story last year that heralded the delivery of 325,851 gallons of water to the Lake, or exactly one acre-foot.[127] At the time of this story's publication, the Great Salt Lake needed more than 8 million acre-feet of water to reach the elevation of 4,200 feet. That means the story was reporting on the water delivery of 1/8,000,000, or one-eight millionth of the water volume needed at the time to raise the Lake up to 4,200 feet.[128]

Other stories have celebrated reductions in water demand by describing the progress of water suppliers in gallons. The conservation savings sound much better when they are expressed in gallons, instead of being expressed as a percentage of water use, such as a reduction of 5% or 10% in water demand.[129] Even just a 1% reduction in water demand – what could be a very lazy achievement – can sound impressive when it is expressed in millions of gallons of water saved.

The public should immediately question claims of water conservation or water delivery successes to the Lake that are expressed in gallons. These red flag claims fail to account for the percentage reduction in water demand or the percentage of total water delivery needed to raise the Lake to sustainable levels. If you read, see, or hear a media story that fails to account for the consideration of water needed, or the percent reduction in total water use, contact the editor of the outlet and request that their reporting hold public officials accountable for what we as Utahns seek to achieve at the Great Salt Lake.

2. Give Permanent Legal Protection to the Great Salt Lake

The most obvious evidence that Utah has failed to protect the Great Salt Lake is the state's refusal to allow individual water rights holders to legally dedicate their water to the Lake in perpetuity, i.e. permanently. This concept is referred to in water law as an instream flow.

States across the American West have grappled with the question of how to ensure legal protection for water flows for aquatic ecosystems and have devised solid instream flow laws to ensure their aquatic landscapes exist for future generations. Most instream flow laws can be grouped into two categories: individual water rights and minimum flow requirements.

With Individual Water Rights

Many states in the American West allow individual water right holders to either appropriate a new water right for instream flow purposes or convert their existing water rights to an instream flow right.[130] This is typically done by expanding the definition of beneficial use,[131] or the test used to determine whether a water right is being put to a productive (i.e. legal) use or is being wasted and should be subject to forfeiture.[132]

The traditional definition of beneficial use included agriculture, municipal, industrial, and hydropower production and the definition excluded fish, wildlife and recreational purposes.[133] Under the old definition, a water right holder could lose their water right if they let their water remain in a stream to benefit the environment.[134]

Since the mid-1960s, states have been expanding their definition of beneficial use to include instream flows.[135] In Arizona and Nevada, courts have interpreted the state's definitions of beneficial use to include instream flows, thereby allowing anybody eligible to hold a water right the ability to legally keep water in rivers.[136] Washington has a similar system, but one that is explicitly stated in statute rather than interpreted by courts.[137] Washington's 1971 Water Resources Act expanded the state's definition of beneficial use, allowing anybody to hold a water right for instream flow purposes and who can similarly transfer existing rights for instream flows as well.[138]

California and Texas also allow private individuals to hold instream flow rights, with one unique innovation: stacking. In these states, water right holders can "stack" their water rights; one right can be used for multiple purposes.[139] Under this system, farmers could decide to use 70 percent of their water right for irrigation and 30 percent for instream flows one year, then the next year use 50 percent for irrigation and 50 percent for instream flows, all without having to go through the often lengthy, expensive, and paperwork-intensive change application process.

With Minimum Flow Requirements

States that are serious about protecting the health of their aquatic ecosystems have developed an additional system that often runs in tandem with individual rights, known as minimum flow requirements. Under this approach, some designated authority (typically a state agency or the state

legislature itself) establishes minimum amounts of water that need to flow in rivers or lakes to ensure some baseline health for that ecosystem. States then ensure these minimum flows are maintained for the designated aquatic features.

Alaska has one of the most expansive minimum flow systems,[140] as anyone is allowed to reserve a water right for environmental purposes as long as some basic requirements are met.[141] The Alaska Department of Natural Resources reviews and makes determinations on applications, and reviews approved reservations every 10 years to ensure they are still meeting their intended purpose. [142]

Idaho, Kansas, Washington, Oregon, and Montana all have similar minimum flow systems.[143] These states have a designated state agency that holds any minimum flow rights in trust for the citizens of that state. Typically, other state agencies, private individuals, or federal agencies can request that the designated agency establish a minimum flow for a yet-unprotected aquatic feature.

In Washington, the Department of Ecology creates rules to establish minimum flows in all the state's watersheds.[144] Once rules are established, they are assigned a priority date, and the Department of Ecology is tasked with ensuring that new appropriations do not deplete flows in a river below the minimum flow established by the rule.[145] Oregon and Montana's minimum flow system roughly follows along these lines as well.[146]

Not all states leave minimum flow determinations to a single agency. In Kansas and Idaho, approval of the proposed minimum flow requirements for each watershed is left to the state legislature.[147] Enforcement of these requirements typically looks similar to the other aforementioned states in that the minimum flow rule is given a priority date and new appropriations are prohibited if they would violate the minimum flow rule.[148] Kansas also explicitly grants their State Engineer the power to curtail junior water right holders if they violate the minimum flow rule.[149]

Utah law allows only three state agencies to permanently dedicate water rights to the Great Salt Lake, but they could be forced to strip their water rights for development under political pressure at a moment's notice. If an individual wanted to permanently donate a water right to a land trust or a conservation organization, they cannot make that donation on a permanent basis.

Photo of the cracked and dry lakebed. Lakebed dust contains harmful chemicals and compounds that detrimentally affect human health when inhaled during wind storms. We can only truly control these dust emissions by raising the Great Salt Lake to healthy water levels.

Efforts In Utah

In the year 2000, the Utah Rivers Council helped form a coalition of nonprofits to draft legislation to give Utah's rivers legal protection to exist by allowing the use of water rights in a stream as a legitimate use of this private property. But water lobbyists and Utah legislators refused to give water rights holders the liberty to use their water rights instream for the purpose of propagating fish and wildlife species on a permanent basis. Legislators ladled a suite of restrictions and conditions on the bill, against the will of many nonprofit organizations who drafted the original bill. In the end, the bill that passed only recognized instream flows as a possibility in a handful of headwater streams where native trout reside, and only on a temporary basis.

Landowners who had sought to use their water rights to protect streams flowing across their farms now were precluded from doing so. The vast majority of Utah's rivers and streams have no legal right to exist since individual water rights holders are not allowed to permanently dedicate their water for instream flows.[150]

Legislation passed in the 2022 session expanded the legal definition of instream flows by finally allowing individuals and institutions to hold instream flows, but only on a temporary basis.[151] The entire concept of ecosystem protection is based on permanence, and protections that are designed to be temporary do not provide a sustainable solution. Individuals in Utah are not allowed to permanently dedicate their water rights to the Great Salt Lake, which means this flawed measure does not create true legal protection for the Lake.[152] This preclusion strategy likely helps avoid threats to existing or new water diversions, such as the proposed Bear River Development, slated for 2028.

The Utah Statehouse refuses to recognize the personal liberty of water rights holders to permanently use their water rights either in the Great Salt Lake or in a Utah river. There is no permanent, legal instream flows recognized by Utah law for individuals or nonprofit conservation organizations on either rivers or lakes because of this preclusion. This fact has been contested by some politicians who wish to portray themselves as saving the Lake, but the Utah Legislature intentionally avoided creating a legal tool to permanently dedicate water to the Great Salt Lake.

Under current Utah law, only three select state agencies are allowed to permanently or temporarily convert existing water rights to instream flow rights.[153] These agencies are the Division of Forestry, Fire, and State Lands (DFFSL), the Division of Wildlife Resources, and the Division of State Parks. Gifting permanent instream flow rights to state agencies raises concerns about whether those agencies will always enforce or utilize their instream flow rights. As two scholars from the University of Oregon Law School put it, "when the state, rather than an individual, holds all instream flow rights, this gives the state the discretionary authority to waive enforcement of that right, essentially subordinating the instream right to more junior diversionary uses of water."[154]

Gifting all the permanent instream flow rights to the government requires placing significant faith in those with administrative control over these agencies – the Utah Legislature and the governor. There are times when the whims of either the statehouse or the governor are subject to special interest pressure and do not align with the best interest of the Great Salt Lake. Allowing only three state agencies to hold permanent instream flow rights relegates all others to temporary instream flow rights, thereby hurting our chances of securing adequate water flows for the Great Salt Lake.

Any plan to save the Great Salt Lake must ensure that Utah law recognizes the ability of individuals and private institutions to permanently designate water for rivers and the Lake. Without legal protection for water for the Great Salt Lake, efforts to raise Lake levels may be a wishful act because such water can be diverted away by the few state agencies that can hold instream flows, and therefore will not permanently protect the Great Salt Lake.

What about the Great Salt Lake Water Trust?

The Great Salt Lake Watershed Enhancement Trust, a private trust organization, was created by the Utah Legislature in 2022, and granted $40 million to acquire water for the Great Salt Lake, its wetlands, and important upstream habitats.[155]

Since Utah law prohibits all but three state agencies from holding permanent instream flow rights,[156] this means any instream flow rights acquired by the trust can only go to the Lake for a maximum of 10 years.[157] The Trust could potentially donate their acquired water rights to one of the three aforementioned state agencies, who could turn those rights into instream flows. Since these three agencies can extinguish their instream flow rights should they be forced to by political forces, this entire effort does not offer the permanence the Great Salt Lake needs.

The cumulative population of nonprofit conservation organizations and philanthropists across the country could raise hundreds of millions of dollars over time to dedicate water to the Great Salt Lake, if only Utah legislators would allow water rights holders to permanently designate their water rights in a stream or lake. Instream flows enable "win-win" transactions between a willing water right seller and a willing buyer for conservation purposes.

The Utah Legislature should amend Utah's instream flow statute (Utah Code § 73-3-30) to allow private individuals to hold permanent instream flow rights for the benefit of rivers and lakes.

Problem and Solutions Summarized

Problem: Utah needs to create an effective system of laws that ensures sufficient quantities of water can legally stay in the Great Salt Lake.

Solution 1: Amend Utah's existing instream flow law to allow anybody entitled to hold water rights the ability to hold instream flow rights permanently. If desired, the state can add regulations like those that exist in Montana and Alaska that require periodic review of permanent instream flow rights.

Solution 2: Adopt a version of a minimum flow requirement system for the Great Salt Lake Basin. Without some such system, it may prove prohibitively difficult and costly for private transactions to acquire the hundreds of thousands of acre-feet of additional water needed each year to restore the Great Salt Lake to its minimum healthy level.

Utah Law currently states that only three state agencies can permanently dedicate water rights to the Great Salt Lake, meaning if an individual wanted to permanently donate a water right they owned to the Lake, they would not be able to.

3. Deliver Surplus Agricultural Water to the Great Salt Lake

One aspect of Northern Utah that is generally unique to America's metropolitan corridors is the presence of Utah's remaining agricultural water delivery system from our yesteryear of farming. One hundred years ago, roughly 1 in 4 Utahns were either farmers or lived on farms.[158, 159] With a much smaller population, farming formed a critical component of much of Americans' daily lives.

From 2001 to 2016, Utah lost 123,000 acres of farmland, an average of 21 acres a day.[160] Every Utahn knows that our state population is growing, but few understand how it impacts our farmland and our water supply.

As public interest in the Great Salt Lake has grown, much of the public has realized that the majority of Utah's total water use is from our agricultural sector. In the Great Salt Lake Basin, agriculture accounts for an estimated 70 percent of total water depletions, compared to about 10 percent for municipal depletions.[161]

Yet few realize how this water use is shifting. Because Utah's agriculture uses the overwhelming majority of our water each year, our collective paving of this farmland actually creates a surplus of water. This was documented in the 2015 Legislative Audit of the Utah Division of Water Resources in Chapter 4, *The Growth in Utah's Water Supply Should be Reported to Policy Makers.*[162]

As farmlands are converted to strip malls, parking lots, streets, sidewalks and subdivisions, the old canals are typically untouched by these new construction activities. Although this fact comes as a surprise to many, the Salt Lake Valley has scores of canals and ditches that remain from the area's former agricultural history.[163] The agricultural lands of the Salt Lake Valley are mostly long gone, but the diversion canals, ditches and other infrastructure still remain as a crisscrossing network; some water users still retain their agricultural water rights because they were passed down or purchased from previous generations.

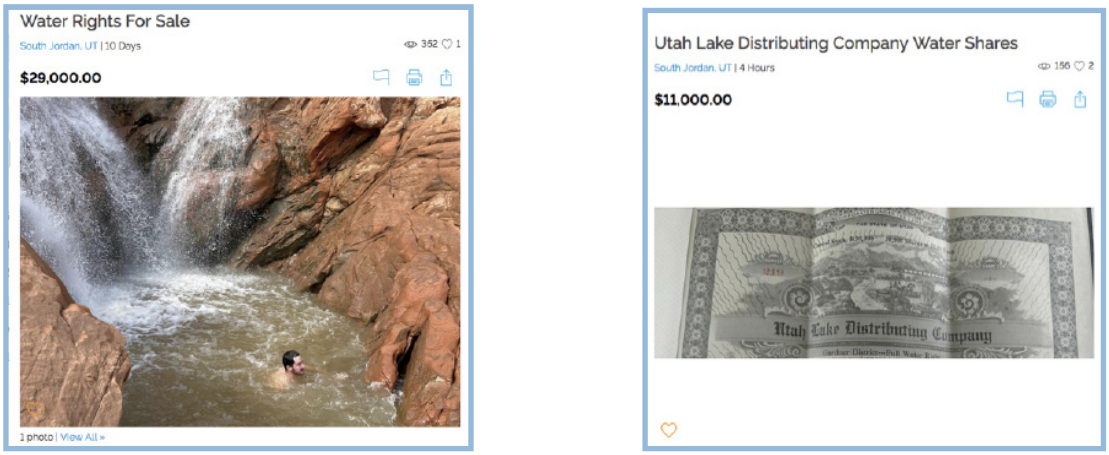
The Salt Lake Valley in the 1887, looking at Mt. Olympus. Most of the valley has since been converted to municipal development, which has freed up huge quantities of water, some of which still flows through canals in the Great Salt Lake Basin today. Photo courtesy Utah State Historical Society.

The American Farmland Trust has estimated that by 2040, Utah will lose an additional 200,000 acres of farmland under business-as-usual conditions.[164] If we assume that all this farmland uses between 3 and 4 acre-feet of water per acre – the average duty value for Northern Utah – then we can estimate that roughly 600,000 to 800,000 acre-feet of agricultural water diversions will be freed up or converted to other uses by 2040.[165]

These agricultural water rights may get converted to flood irrigate urban lawns, called secondary water. Secondary refers to the additional system; our primary system of municipal water is treated, culinary water inside and outside our homes, businesses and government institutions. Although secondary water is used for a municipal purpose, it is still agricultural water – untreated, typically unmeasured, and not valued the same as municipal water rates. Secondary water is very inexpensive, resembling agricultural water rates, which are often a tiny fraction of the price of treated municipal (culinary) water.

But in many instances, the water in these canals and ditches is not widely used and individual water users in the canal or ditch may try to sell their water to the highest bidder, if they can find one. Because the agricultural lands have been swallowed up by urban landscapes and because municipal residents already have treated culinary systems, there are few buyers seeking to flood irrigate their yards with untreated ditch water. Transferring individual water rights out of a canal or ditch may also conflict with the operating agreement of the canal or ditch company's corporate documents, which further complicates water sales.

Although this may sound odd, hard to believe or theoretical, it is the cold truth. These water rights are available on the online classified site of KSL, where one can purchase surplus, unused water for sale, even during the crisis facing the Great Salt Lake.



Two examples of water rights for sale on KSL classifieds in the Great Salt Lake Basin. Both listings were actively for sale as of September 2023.

It is very difficult to estimate the total number of unused surplus agricultural water rights in the Great Salt Lake Basin today. However, given the scale of farmland conversion that has occurred in the state since the start of the 21st century, it is likely the figure is large. Much of this water is likely still flowing through unlined canals and ditches, where seepage and evaporation can add up to water losses as large as 30 to 50 percent.[166]

This is a highly inefficient system that needs a two-prong fix. If we want to save the Great Salt Lake, we need to increase the efficiency of our water delivery systems to reduce loss (i.e. line or pipe canals to reduce water losses from seepage and evaporation), and maximize our use of already-diverted water to prevent new diversions from further draining the Lake. Prior to building any new water diversions, we should put any unused surplus agricultural water to good use, or, if there is no real need for greater water use in our cities, we should get the surplus agricultural water to the Great Salt Lake itself.

Problem and Solution Summarized

Problem: Utah's farms are rapidly disappearing due to urban sprawl and population growth. As this occurs, water that was used on farms is freed up, creating surplus water. This water is often left in original ditches that now cross new subdivisions where the water is not put to good use and conveyed in unlined canals where seepage and evaporation can create losses of 30 to 50 percent.

Solution: Inventory Utah's unused, surplus agricultural water and put it to good use by sending it directly to the Great Salt Lake.

4. Fix Utah's Agricultural Water Optimization Program

It would be difficult to create a reasonable and effective plan to save the Great Salt Lake without addressing the largest user of water: Utah agriculture. Agriculture collectively uses approximately 70 percent of the water in the Great Salt Lake Basin each year,[167] about 1,300,000 acre-feet. A significant portion of this high water use stems from the archaic agricultural water infrastructure, some of which dates back to the 19th century.

New irrigation equipment is expensive, and farmers often operate with very narrow profit margins.[168] As a result, many farmers still rely on old infrastructure such as unlined dirt canals among other inefficient irrigation methods.[169] Flood irrigation is another water-waster, while more advanced methods such as sprinklers and drip irrigation are less commonly used.

Figure 10 shows the acreage of farmland in the Great Salt Lake Basin by type of crop and irrigation technology.

Figure 10. Acreage of Crops and Irrigation Methods in the Great Salt Lake Basin, 2022

	Field Crops/ Grain/ Seeds	Garden	Hay/Turf	Orchard/ Small Fruit	Pasture Land	Total (acres)	Total (%)
Drip	10	19	-	1,572	-	1,599	0.3%
Dry Crop	45,312	16	38,579	64	33,703	117,673	19.5%
Flood	47,404	1,106	150,793	1,218	52,316	252,837	41.9%
Sprinkler	31,802	2,109	116,701	4,266	12,319	167,197	27.7%
Sub-irrigated	-	-	10,421	-	54,409	64,831	10.7%
Total (acres)	***124,528***	***3,249***	***316,494***	***7,119***	***152,747***	***604,137***	

Most of the agricultural land in the Great Salt Lake Basin is planted with water-intensive crops (like hay and turf) and uses inefficient irrigation methods. Substantial amounts of water could be saved by upgrading irrigation methods and planting less water-intensive crops. Data from the Division of Water Resources' Water Related Land Use records.[170]

Some members of the public have criticized agricultural producers, calling for programs to "buy and dry" farmland – pay farmers to not plant crops and send their water to the Great Salt Lake.[171] There is immense political opposition to this proposal. Doing so could have detrimental impacts on farmers and the rural communities that depend on them, including people who sell goods and services to farmers, and those wanting open space and local agriculture.[172] Fortunately, there is a better way to free up water supplies from farms and keep farmers in business: improve water efficiency.

New technologies can greatly reduce water use on farms while increasing crop yields.[173] For example, studies have found that unlined dirt canals in Utah lose 30 to 50 percent of the water they transport to seepage and evaporation,[174,175] and that lining or piping canals can reduce these water losses by as much as 86 percent.[176] Similarly, replacing or updating irrigation technologies has been shown to reduce total water use by as much as 15 percent.[177]

Transferring water from farms to the tributaries of the Great Salt Lake should be a required component of any agricultural efficiency program in Northern Utah.

Some states have developed innovative programs that help agricultural producers reduce their water use by offsetting the cost of upgrades with grants. In return, agricultural producers convert some of their saved water into instream flows to benefit the public whose tax dollars funded the grant program.

In 1987, the Oregon Legislature passed a bill establishing the state's Allocation of Conserved Water Program.[178] Under this program, agricultural producers receive grants to implement irrigation efficiency or other similar water conservation projects. These projects reduce the water a producer needs, thereby creating a block of "conserved water" that can be put toward other purposes. Both the conserved water and the non-conserved water keep the priority date of the original water right.[179]

In exchange for giving away tax dollars, the state receives a portion of the conserved water that was freed up by the project – a portion proportional to the percentage of the total project cost that state funds covered.[180] In most cases, the state covers 25 percent of the total project costs, meaning the state receives 25 percent of the conserved water and the producer keeps the other 75 percent of the conserved water. The state could receive more water – up to 75 percent – if state funds made up a larger share of the total project cost.[181] The state uses the water it receives from this program for instream flow purposes.

In 2001, the Washington Legislature created a similar program called the Irrigation Efficiency Grant Program.[182] State funds are granted to producers to help reduce water use, and the state receives a portion of the conserved water proportional to the percentage of the total project cost that state funds covered.[183] State funds can cover up to 85 percent of the total project cost, meaning the state could receive up to 85 percent of the conserved water.[184] The state's share of conserved water is used to create instream flows to benefit Endangered Species Act listed fish species.[185]

Utah's Program, Problems, and Needed Improvements

In 2019, the Utah Legislature created the Agricultural Water Optimization program,[186] which was overhauled in the 2023 legislative session.[187] The objective is to provide tax-funded grants to farmers to implement projects that reduce overall water. The grants are allowed to cover up to 50 percent of a project's total cost.[188] Water freed up by the project can be split into a separate water right and can then be used for purposes separate from agriculture.[189]

However, Utah's program does not provide any portion of the saved water to the public in return for their investment of tax dollars.[190] The public receives no direct benefit in return for their significant investment of hundreds of millions of dollars, making Utah's program effectively a giant subsidy from taxpayers to farmers.

To date, state and federal taxpayers have put $276 million into Utah's program,[191] but agricultural producers accrue all the benefits of this program. They get free tax dollars to upgrade their infrastructure, which may improve their crop yields, and they get to keep any water saved through those upgrades to sell, farm more land with, or sit on for up to seven years with a simple non-use application filing.

White-faced ibis and other shorebirds feeding at the Great Salt Lake.

Utah's crisis at the Great Salt Lake could be ameliorated by getting saved water delivered to the Lake. But none of the water saved through publicly-funded infrastructure upgrades is guaranteed to make it there. This fact was confirmed during a meeting of the Senate Natural Resources, Agricultural, and Environment Committee by Senator Scott Sandall, the cosponsor of the 2023 bill that overhauled the Agricultural Optimization Program.[192]

Senator Blouin asked Senator Sandall:

> *Can you talk about where this water might end up? ... Is it the Great Salt Lake? Is it reservoirs? What are we aiming at here?*[193]

To which Senator Sandall responded:

> *I think that we are going to see an open market situation. I don't think this legislation predicts where that water will end up... In other words, water flows to money. Whatever the highest value of that water is as it's saved, that is where that water will begin to go.*[194]

In order to get any of the saved water created through this program to the Great Salt Lake, individuals or organizations will have to compete with better funded developers, water districts, and possibly even large Wall Street Firms that have already begun buying up water rights in neighboring states such as Colorado and Arizona.[195]

This competition will create high demand for these saved water rights and will drive up the prices of those water rights. This means that large, wealthy organizations (like Wall Street Firms) will be best positioned to acquire the most water, while smaller, less well-funded organizations (like water trusts) will have their purchasing power diluted, acquiring even less water for the Great Salt Lake than they otherwise might have.

The state could attempt to overcome these barriers by appropriating more money to acquire water rights for the Great Salt Lake (e.g. by giving more tax dollars to the Great Salt Lake Watershed Enhancement Trust), but this would be highly inefficient. The state already has appropriated significant tax dollars (almost $300 million) into the Agricultural Optimization Program.

The state simply needs to implement a provision like every other state with some similar agricultural water efficiency program where the state receives a portion of the saved water proportional to the percentage of the total project cost covered by state funds.

If this change was implemented, producers who got taxpayer-funded grants covering 50 percent of the cost of their infrastructure upgrade would keep 50 percent of the saved water. The other 50 percent of the saved water would go to some agency or entity (like the Great Salt Lake Watershed Enhancement Trust, the DFFSL, etc.) for instream flow use to benefit the Great Salt Lake.

Under such a system, agricultural producers would still greatly benefit, the public would see a worthwhile return on their significant tax dollar investment, and the state would successfully secure water for the Great Salt Lake. It would be a win for all parties involved in the program.

To date, the state has spent $76 million on the agricultural optimization program,[196] which has freed up an estimated 173,000 acre-feet of water.[197] Another $200 million was appropriated during the 2023 legislative session, most of which has yet to be lent out to farms, and which we expect will free up more water.[198]

We should not squander the water savings created by this program. Utah needs to update its laws around the Agricultural Water Optimization Program to ensure that a fair portion of the water saved – a portion proportional to the share of the total project costs that state funds covered – is dedicated to the Great Salt Lake.

With this change and continued investment in the Agricultural Water Optimization Program, it's likely that we could direct hundreds of thousands of acre-feet of water to the Great Salt Lake, which would go a long way toward raising the Lake to its healthy minimum level.

Photo of the sun setting on the waters of the Great Salt Lake. We can restore this aquatic treasure to a healthy state by reforming Utah's Agricultural Water Optimization Program to get water to the Lake.

Problem and Solution Summarized

Problem: Utah's Agricultural Water Optimization Program gives taxpayer-funded grants to agricultural producers to improve water use efficiency on their property but does not guarantee that any water saved through the program will go to the Great Salt Lake or any other publically beneficial purpose. All water saved through the program goes to the agricultural producer, who is free to use it for additional farming, sell it to developers, or file a nonuse application and sit on it for up to seven years.

Solution: Amend the laws governing Utah's Agricultural Water Optimization Program to add a provision – common among other states with similar programs – that a portion of the water saved through the Optimization Program be held by the state or some similar trust entity permanently for instream flows. The percent of the saved water that is used for instream flows should match the percent of the total project costs that is covered by taxpayer-funded grants. For example, if 30, 40, or 50 percent of a project's cost is covered by taxpayer-funded grants, then 30, 40, or 50 percent of the water saved from the project should be used for instream flows.

Not a Solution: Importing Water

The decline of the Great Salt Lake has spurred some fringe ideas, including proposals to mine deep saline aquifers or build a pipeline from the overallocated Green River to the Lake.[199,200] Perhaps the most outrageously bad idea is to import large quantities of water from the Pacific Ocean via a massive pipeline.[201]

These far out proposals are technically and financially infeasible.[202,203,204] More to the point, wasting precious time and resources studying these outlandish proposals is a distraction that wastes taxpayer funds and delays implementing the many real solutions available to us right now.

Since water diversions are the primary driver behind the Lake's decline, it's clear the most effective way to save the Lake is to reduce our upstream water use and diversions.[205] We cannot save the Great Salt Lake without changing the way we use water along the Wasatch Front. After all, our business-as-usual water practices are what landed us in this crisis in the first place. We need to find smart ways to reduce our water use and save taxpayers money in the process, which exorbitant mega-pipelines do not do.

There are multiple tools available to us to accomplish this, yet the more time we spend entertaining propositions to import water, the harder it will be to successfully implement any of these tools. We need to finally abandon these foolish proposals and focus our efforts instead on realistic policies, like water conservation programs, that hold the key to saving the Lake.

Fanciful promises about far-fetched ideas to import water from outside the Great Salt Lake Basin might make a handful of consultants and business leaders rich. But these distractions undermine water conservation efforts that will benefit the general public rather than the self-interest of a select group. These alternatives have been proven to be effective in other parts of the country and planet.

5. Eliminate Secondary Water Waste

A significant portion of outdoor municipal water use in the Great Salt Lake Basin comes from secondary water systems – connected series of canals and pipes that were converted from agricultural landscapes to municipal use when sprawl took over farmland, and now supply untreated water to municipal residents for lawn and garden use.[206]

The Great Salt Lake Basin is home to one of the largest secondary water systems in the nation.[207] According to the Division of Water Rights, there are over a hundred separate secondary water suppliers in the Great Salt Lake Basin, which collectively supply water on over 69,000 acres of municipal lawns and gardens.[208,209] Together, these secondary systems divert roughly 200,000 to 275,000 acre-feet of water annually in the Great Salt Lake Basin alone.[210,211,212] These diversion quantities could underestimate the total volume of Great Salt Lake tributary water being diverted to irrigate grass landscapes.

The Wasteful Nature of Secondary Water Systems

The high amount of secondary water use in the Great Salt Lake Basin is problematic because secondary water systems are wasteful in almost every regard. Many secondary water systems use unlined, dirt canals to transport water to an end user or to a pipe for end user distribution.[213] These unlined canals can be highly inefficient, resulting in seepage and evaporation losses of between 30 and 50 percent.[214]

Additionally, of the approximately 260,000 secondary connections in the state, just 15 percent are metered.[215] This means that the vast majority of secondary water users have little idea of how much water they are actually using, leading to huge amounts of waste.[216]

Old agricultural water, like that shown here in a Salt Lake City gutter, is often converted to secondary water. Customers are then able to flood irrigate with a virtually unlimited amount of water for a low flat fee, leading to high amounts of waste.

Furthermore, most secondary users pay very low, fixed rates for huge quantities of water. It is analogous to the fee one pays to enter an all-you-can-eat buffet. Secondary water customers in Hyrum City, for example, pay for their water based on the size of their lot, not based on how much water they use.[217] Residents with a 0.51 to 1 acre lot pay $13.58 per month, regardless of their water use.[218] To convert this fee structure to a traditional price per 1,000 gallons, assume that secondary systems on a 1-acre lot use 0.16 acre-feet per month (or ~52,000 gallons).[219] This yields a flat price of roughly $0.26 per 1,000 gallons. By comparison, outside of Utah, municipal water rates for starting tiers of outdoor water use pricing typically range from $2.50 to $15.00 per 1,000 gallons of water.

Hyrum City is not an anomaly. Many other secondary water suppliers charge similarly low, flat prices not connected to water use, not because they want to encourage water waste, but because their systems are unmetered and incapable of charging per-volume prices for their water.

These very cheap, flat water rates do not send effective price signals to consumers. The marginal price of water in these systems – or the price per additional unit consumed is zero. The lack of a strong price signal means that users frequently overuse because they are not incentivized to do otherwise.[220]

Once secondary connections are metered, per-volume charges that do send price signals to consumers can be implemented. The Wolf Creek Water and Sewer Improvement District – which serves a small community just north of Pineview Reservoir – provides a good example.[221] Secondary water users supplied by this provider typically pay between $1.75 and $3.00 per 1,000 gallons consumed, with prices increasing as consumption increases. While these rates are still not ideal, they do represent an improvement in secondary water pricing over the traditional low, flat rate structures.

How to Eliminate Waste in Secondary Systems

The State of Utah took a step recently that addresses this wasteful water use by mandating that all secondary connections be metered by 2030.[222] This policy will free up an estimated 54,000 acre-feet of water, which could become available for trust organizations and individuals to buy or donate to the Great Salt Lake.[223]

While this is a step in the right direction, it's just one of three main problems, the other two being inherent system water loss and poor pricing structures. This first step only begins to address one of the core problems of secondary water waste, without addressing the others. Tackling these core problems of secondary water use will make secondary systems more efficient and free up more water for the Great Salt Lake.

Unlined canals like this one near the South Towne Mall in Sandy City, are often used to transport secondary water that would otherwise enter the Great Salt Lake. These canals have high seepage and evaporation rates, leading to substantial amounts of water loss. Zachary Frankel photograph.

To truly eliminate secondary water waste, and get the saved water to the Great Salt Lake, the state should require that secondary water users be charged realistic water rates for their secondary water use. Bringing secondary water rates up to $3 or $4 per thousand gallons would incentivize people to be more conscious of their outdoor water use and use less water overall. It would also bring these systems in line with nearly every other water supplier along the Wasatch Front, who charge higher prices for outdoor water use in an effort to prevent unnecessary waste of water on lawns and gardens. Any saved water that comes from this change should be sent to the Great Salt Lake.

Even with the pricing change, however, there still will be secondary water systems that are inherently wasteful due to seepage losses common to dirt canals and other poor infrastructure. Given the scale of infrastructure upgrades that would be needed to eliminate waste in these systems (e.g. lining or piping canals, installing secondary meters, etc.), upgrading these systems may prove to be prohibitively expensive.

The state should survey the secondary water systems in the Great Salt Lake Basin to identify systems that could be purchased by Utah taxpayers for water delivery to the Great Salt Lake. This would likely end up being a more beneficial and cost-effective use of the water overall.

Problem and Solution Summarized

Problem: There is a high amount of secondary water use in the Great Salt Lake Basin. Since most secondary systems use old infrastructure, are unmetered, and charge very low flat prices, they produce a large amount of water waste.

Solution 1: As more secondary meters are installed, more secondary water suppliers will gain the ability to charge effective per-unit rates for their water. Secondary water rates should be set sufficiently high to ensure that they send price signals to secondary water consumers. This would reduce water waste and generate additional water for the Great Salt Lake.

Solution 2: Some secondary systems are so inherently wasteful that it may prove cost prohibitive to invest in the infrastructure upgrades needed to make these systems efficient. The state should survey the secondary water systems in the Great Salt Lake Basin to identify any such systems. In instances where these systems are found, the state should consider purchasing the secondary water system outright and converting the water to instream flows to benefit the Great Salt Lake.

6. Protect Great Salt Lake Tributaries from New Water Diversions

The collective effort to raise Great Salt Lake water levels is a waste of time and energy if the Utah Division of Water Resources is allowed to build a new water diversion on the Bear River – the largest tributary to the Great Salt Lake, and which provides some 60 percent of the surface water to the Lake.[224] The agency's proposed diversion of the Bear River will devastate the Lake and relegate it to the history books of what used to exist in the American West. It is a looming disaster that is moving forward each day, although the agency and its lobbying partners are trying to cloak their activities to advance this project so as to not upset the public.

Three to four new dams and a 90-mile long pipeline upstream of the Great Salt Lake are part of the proposed $2.9 billion Bear River Development.[225] Utah has partnered with Idaho to divert a total of 400,000 acre-feet of Bear River water; that's nearly half the river's annual water flow to the Great Salt Lake.[226,227] Diverting the Bear River is expected to further lower the Great Salt Lake by an estimated two to three feet in elevation, although this estimate was based on a much smaller water volume diversion. [228,229] This is particularly disturbing given that Utah is proposing to divert the Bear River for use primarily on lawns along the Wasatch Front, the biggest user of water in Utah's cities.[230]

The Bear River Development Act – the state law that authorizes the project – was passed by the Utah Legislature in 1991, and the state has been advancing the project ever since.[231]

While the Great Salt Lake declines in elevation, Bear River Development is quietly being advanced, a water project that would drop the Lake an additional several feet. Utah legislators refuse to stop funding for the destructive water project, through the powerful influence of water conservancy district lobbyists. Tim Kelly photograph.

Five Reasons Why Bear River Development is Moving Forward Right Now

Proponents of Bear River Development have attempted to placate public concern about the project and its potentially devastating impacts on the Lake by stating that they hope to "push off the need for [the project]..."[232] However, actions by these proponents tell a different story. Proponents of Bear River Development have steadily and quietly taken steps to advance the project for many years, and continue to do so today.

The following are a few examples that show that proponents are actively advancing this project.

1) Division of Water Resources Director Candice Hasenyager testified to the Infrastructure and General Government Appropriations Subcommittee on October 19th, 2021 that the proposed Bear River Development project is slated to finish permitting by the late 2020's or early 2030's.[233]

2) Each year, approximately $60+ million from sales tax revenues are directed into the Water Infrastructure Restricted Account – an account established by the legislature in 2015 for the sole purpose of advancing the Bear River Development and Lake Powell Pipeline projects.[234] As of January 2023, the account had collected a balance of just under $180 million.[235]

3) Another fund collecting money for Bear River Development is the Water Resources Conservation and Development Fund. It collects tens of millions of dollars each year from sales tax revenues and squirrels it away to help pay for pre-construction costs for Bear River Development, among other purposes.[236] In 2022 alone, the fund received $34 million.[237]

4) For the past several years, the Division of Water Resources has been steadily acquiring property to clear the right of way for the proposed Bear River Development project. Government record access requests filed by the Utah Rivers Council revealed that, as of 2019, the Division of Water Resources, the Jordan Valley Water District, and the Weber Basin Water District had spent just shy of $30 million acquiring property and conducting other studies to advance Bear River Development.[238,239,240]

5) In 2018, the Utah Division of Water Resources and the Idaho Water Resources Board jointly submitted an application to the Utah State Engineer to divert 400,000 acre-feet of water from the Bear River system.[241] The application is still under review by the State Engineer. If it is approved, it could represent a significant step forward for the Bear River Development project.

Proponents of Bear River Development have long claimed this project is essential, referring to their water demand forecasts to make their point.[242] However, water managers have long used unsophisticated techniques to forecast demand,[243] often producing forecasts that end up being wildly inaccurate or based on data which does not exist.[244]

Utah is no exception. When the Bear River Development Act passed in 1991, phony water demand forecasts showed that the state would "need" water from the project by 2015.[245] We are well past 2015, and the Wasatch Front still has no need for more water from the Bear River.

To produce any water demand forecast whatsoever requires good data on water use and careful consideration of the impact that water pricing and economics play in dictating water demand. Cheerleaders of Bear River Development – the Division of Water Resources and its lobbying partners in the water districts – have consistently shunned the role that water prices play in determining water demand, as if economics is just a fad.

In 2015, the Utah Rivers Council successfully initiated a Legislative Audit of the Division of Water Resource's data collection practices. The audit found numerous problems with the Division's data, ultimately leading it to conclude that "the Division does not have reliable local water use data," and that the Division's baseline water use study – which was used to demonstrate a "need" for Bear River Development – was questionable at best.[246]

Utah has no need for the proposed Bear River Development project. Towns and cities across the Wasatch Front have ample supplies of water. We just need the right policies to make sure that this water is used efficiently.

This Guidebook and our *Alternatives to Bear River Development* report layout the numerous options Utah has available to reduce water use, preserve the Great Salt Lake, and meet the water needs of growing cities.[247]

Utah needs a healthy Great Salt Lake to keep our air breathable, home values stable, and snowpacks fluffy and abundant. The Utah Legislature should repeal the Bear River Development Act and prohibit future diversions of the Lake's major tributaries to ensure that the Great Salt Lake can continue to provide Utahns with a livable environment for decades to come.

Problem and Solution Summarized

Problem: Large water diversion projects – especially the proposed Bear River Development project – threaten to lower the level of the Great Salt Lake substantially, thereby undoing the efforts to raise water levels of the Great Salt Lake.

Solution: The Utah Legislature should repeal the Bear River Development Act and permanently ban any similar future water diversion proposals of Lake water. This is the only way to ensure the Lake exists in the future.

Proposed Bear River Development would include at least three new reservoirs, including this damsite on the Temple Fork River, a tributary of the Logan River and the Bear River. This destructive water project would stop water from entering the Great Salt Lake Basin to provide lawn water for the Wasatch Front.

7. Fix Utah's Tax System that Encourages Water Waste

Raising the water level of the Great Salt Lake to 4,200 feet in elevation will require reducing municipal water use in the basin. Utah has a suite of tools available to achieve this, one of the most powerful of which is eliminating tax policies that encourage water waste.

For decades, Utah water suppliers have been collecting property taxes on houses, businesses and automobiles.[248] These property taxes make up a larger proportion of a Utah water district's total revenues than do its revenues from water sales.[249] This is not the case in most other western states.[250]

These large property tax revenues act as a subsidy to lower the price of municipal water. This acts to reduce water rates, thereby increasing water use as per basic market economics.[251]

Fiscal conservatives, economists, and water experts are critical of property tax collections by water districts to lower the price of water, pointing to the role these tax subsidies play in making Utah's municipal water rates the least expensive in the U.S.[252] As basic economics dictate, cheap water prices lead to the wasting of water.[253]

The fact that taxpayers subsidize large, exempt institutional users – who pay no property taxes – to overuse water is particularly problematic. Schools, universities, churches, and government golf courses, among other landowners, are high municipal water users who typically use large amounts of water on outdoor decorative landscapes.[254]

This water waste is more than just a theoretical impact since Utah regularly ranks as the highest or second highest per person municipal water user in the nation.[255,256]

Utah's current property tax subsidy for water encourages wasteful water use by artificially lowering the price of outdoor water for high-volume users.

Utah's Property Tax Subsidies to Water Districts

The Utah Rivers Council and other entities have long studied Utah and other states' property tax collection practices to identify ways to improve Utah's water pricing structures.[257] In 2001, the Utah Rivers Council surveyed 54 water suppliers in 11 Western states to determine the degree to which western water suppliers collect property taxes.[258] This study found that water suppliers in Utah collected property taxes more frequently than in any other western state surveyed and that property tax collections did not have a significant effect on bond ratings, a factor that determines at what interest rate a municipality would borrow money.

In 2022, the Utah Rivers Council once again conducted a survey of regional water suppliers to produce an updated picture of the role that property taxes play in water suppliers' revenue streams. Our updated review analyzed fiscal year 2020 audited financial statements and bond ratings of 342 water suppliers across nine other western states – Washington, Oregon, Montana, Nevada, Colorado, California, Arizona, New Mexico, and Texas. That analysis compared their property tax collection practices to those in Utah.[259] Our review showed that most of the other states do not subsidize their water suppliers with property taxes to the same extent that Utah does, corroborating the findings of our 2001 survey.

Utah's Water Pricing Structures Disproportionately Burden Low-Income Individuals

Low-income residents are disproportionately burdened by property tax subsidies for water.

Exhaustive studies of water use records in the Salt Lake Valley found that low-income families use just a small fraction of water compared to the water used by high-income households.[260,261] This makes sense, as most low-income residents have smaller homes and outdoor landscapes than high-income residents.

The study found that most low-income residents used effectively all their water indoors for true water needs (cooking, cleaning, personal hygiene, etc.), while high-income residents used the majority of their water outdoors on decorative and unnecessary lawns and gardens.[262]

Under a fair water pricing structure, high-income, high-water-using residents would pay much more than low-income, low-water-using residents because of their heavy consumption of a precious public resource on nonessential, decorative landscapes. Low-income residents should be able to substantially decrease their water bills by using less water.

However, this is not what happens in Utah. Since water prices are subsidized by property taxes, a person's total water charge is not directly connected to their water use. Residents are instead charged for a portion of their water based on how valuable their home is.

Under this system, large outdoor water users – who tend to be high-income residents – benefit the most. They get to pay lower prices for their excessive outdoor water use than they otherwise would if the property tax subsidy did not exist.

Low-income residents, on the other hand, tend to use far less water outdoors and, therefore, receive little benefit from the cheap outdoor water rates. They cannot substantially lower their water bills even if they used less water because a portion of their bill is tied to the value of their home, not their water consumption.

Rather, low-income residents are forced to pay higher property taxes so water districts can collect extra revenue and keep the price of outdoor water low. Since property taxes are regressive – that is, they compose a larger percentage of a low-income resident's disposable income than a high-income resident's – they most seriously burden low-income residents.[263]

In other words, Utah's current water pricing system imposes regressive taxes on low-income residents to generate revenue to subsidize the lavish outdoor water use of high-income residents.

This is backwards. Water prices should be tied as directly as possible to water consumption. The more water used, the more the user should pay. Utah could achieve this by phasing out property tax subsidies to large, urban water suppliers who already generate enough revenue from water sales to cover their expenses.

The Solution: Phase Out Property Tax Collections by Water Districts

Phasing out property taxes for water would mean Utah residents would pay only for the water they use, and no individual or institution would get a free ride on the backs of taxpayers to waste water. Phasing out these taxes would extend our water supply and utilize the free market to save water. A phaseout of property taxes would make water pricing transparent and equitable.

Phasing out property taxes on water would assure reduced government spending on new water infrastructure including delivery systems, treatment plants, and importing new water sources. Removing the property tax would likely help avoid large future rate increases because expensive new water sources would be delayed or eliminated, such as Bear River Development. Phasing out property taxes for water is the simplest water conservation measure Utah can take, and it would be very popular with taxpayers.

Utah water districts collect property taxes to lower outdoor water rates, which leads consumers to waste water, from homeowners to large institutions like schools and government agencies. If we want to stop wasteful outdoor watering, we need to start by valuing water appropriately. E.P. Kosmicki photo.

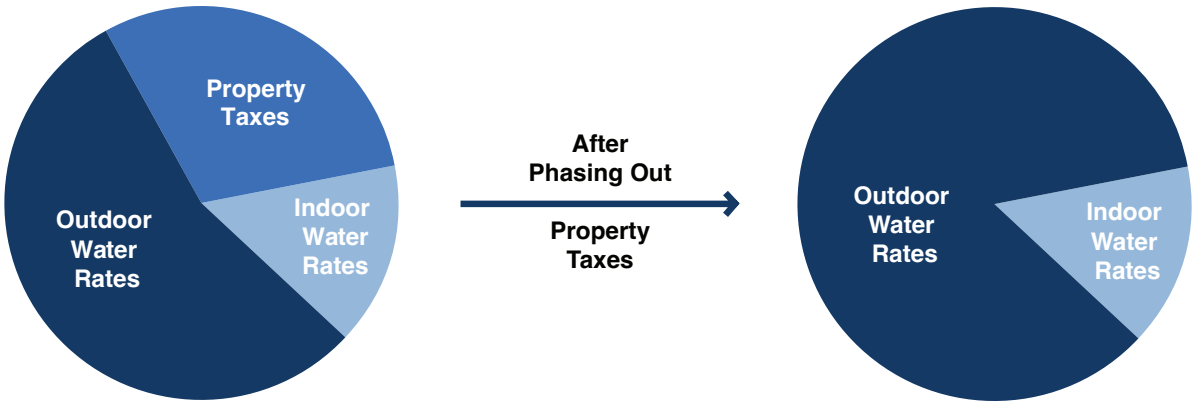
An economic model created by researchers at the University of Utah demonstrates how much water could be saved if property tax collections by water suppliers were phased out.[264] Findings show that if water suppliers stopped collecting property taxes and replaced these lost revenues by raising outdoor water rates, consumers would use less water and water suppliers would not be worse off financially.

Two key principles are at the heart of the researchers' model. The researchers surmised that if property tax collections by water suppliers were eliminated, any lost revenue could be offset by an increase in outdoor water rates. This design feature was built into the model to ensure that these water rate increases did not harm fixed or low-income individuals, most of whom are using much less water outside their homes than more affluent water users. Focusing the required increase in water rate revenues on outdoor water use also could ensure that the largest water users pay a more equitable portion of their water demand.

This design feature also has the benefit of working to address the biggest use of water in Utah's cities – outdoor water used on grass landscapes. Outdoor water uses are typically non-essential, ornamental water uses.

The driving idea behind the researcher's model is represented in Figure 11. This model was developed to demonstrate that Utah could save billions of gallons of water if water users are charged solely based on the amount of water they consume.

Figure 11. Theory Behind Researcher's 2011 Modeling



Economic researchers modeled how phasing out property taxes could reduce water use. They proposed eliminating property tax collections by water suppliers and replacing lost revenue by raising outdoor water rates, which is typically the most wasteful use of water.

Researchers sought to prove the model using real world city data, so they collected monthly water delivery volumes and water rate revenue totals for a number of large, Wasatch Front water suppliers. This allowed them to demonstrate how much water demand would decline after property taxes were phased out. The results of their analysis can be found in Table 12.

Figure 12. Results of Researcher's 2011 Modeling

City	Average Price Increase	Demand Reduction
South Jordan City	31%	-13%
Sandy	36%	-14%
Herriman	40%	-15%
Salt Lake City	43%	-16%
West Jordan City	77%	-25%
Bluffdale	80%	-26%

Increasing outdoor water rates in lieu of collecting property taxes would result in significant water use reductions across the Wasatch Front/Great Salt Lake Watershed. Results based off data collected in 2011.

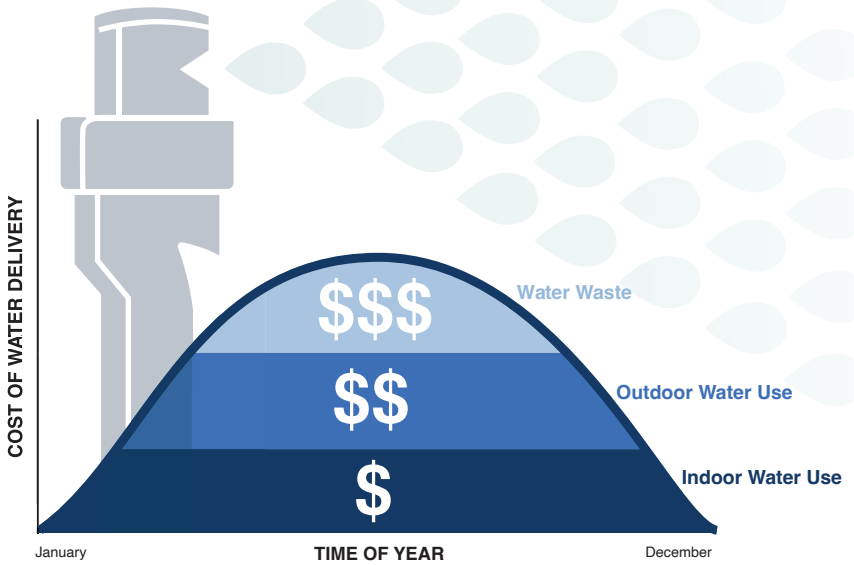
As Table 12 shows, phasing out property tax collections and replacing the lost revenue with revenue generated from increased outdoor water rates substantially reduces total water use. This analysis shows just how powerful a tool the free market can be for conservation and suggests that implementing such a policy statewide could free up significant quantities of water for other uses – like raising the levels of the Great Salt Lake.

A separate study by researchers at Utah State University examined the actual water use reductions that occurred as a result of a water rate increase by a real water supplier in Utah in 2013.[265] In every case, actual water use reductions were even larger than the researchers predicted – at times seeing a nearly 20 percent reduction in use – closely mapping the predicted reductions created by the University of Utah researchers.[266]

Another perk of the researcher's model is that it has the potential to reduce water suppliers' costs. Water suppliers are required to build their water systems to accommodate times when consumers are using maximum amounts of water, known as "peak demand."[267] A water system may only reach its peak demand a handful of times per year, yet water suppliers must still deliver water on these days. This means that they have to build their systems with oversized pipes, large water treatment plants, etc., which quickly becomes expensive. By reducing peak demand, water suppliers can reduce the size and capacity of their new infrastructure, thereby reducing their overall costs.

Peak demand is most often reached in the summer, when consumers are using large amounts of water outdoors to irrigate their lawns and gardens. Figure 13 shows how summer water demand – driven mostly by outdoor water use – is typically the most expensive water to deliver for water suppliers.

Figure 13. Cost of Water Delivery



Conserving water is not just about cutting total water use; it is most effective when it is designed to reduce peak annual water demand by flattening out the peak of the water demand curve. This limits the water used and reduces infrastructure and operation costs, saving money for water suppliers.

The Utah Rivers Council has sought to implement some similar style property tax phase out policy by running bills five times at the Utah Legislature.[268,269] Yet each time, these efforts have been opposed and defeated by Utah's largest water districts who collect these taxes.

We need legislators with the ethical courage to rise above these powerful water districts and finally fix Utah's backwards water pricing systems.

Problem and Solution Summarized

Problem: Utah subsidizes its outdoor water rates with revenues from property tax collections. This keeps outdoor water rates artificially low, leading to water waste. It also disproportionately burdens low-income residents who pay higher property taxes (which are regressive) to subsidize the consumptive outdoor water use of high-income residents with large outdoor lawns and gardens.

Solution 1: Property tax collections by rural water suppliers should be left in place and studied to consider possible alternate revenue sources.

Solution 2: Property tax collections by urban water suppliers in metropolitan areas should be phased out over time.

Solution 3: Property tax collections should be lowered to meet current contract obligations for bond payments – if individual water suppliers have pledged tax revenues before this time – until the bonds are paid off, at which point such tax collections should be phased out.

Solution 4: Water suppliers' loss of property tax revenue should be made up among large volume, municipal users by implementing increasing/tiered block rate structures on outdoor water use.

8. Drive Community Action as Great Salt Lake Water Levels Drop

Saving the Great Salt Lake means raising water levels to 4,200 feet in elevation, the point at which scientists have determined the Lake is healthy – or the point at which most of the Lake's ecosystem services are functioning well.[270,271] To accomplish greater actions to raise Lake water levels, we can borrow a page from successful actions taken on the Colorado River.

The Colorado River Drought Contingency Plan, a successful program in the Colorado River Basin, offers a useful model for the Great Salt Lake. To prevent the decline of Lake Mead on the Colorado River, water users in Arizona, Nevada, California, and Mexico take cuts to their water supply to try to keep reservoir levels higher. The amount of water cut from different users is dependent on the elevation of the water body – the further the reservoir level drops, the bigger the water cuts. [272]

In 2021, the Utah Rivers Council authored similar legislation, the Great Salt Lake Drought Contingency Plan, which aims to save the Great Salt Lake by gradually implementing more serious conservation measures as Great Salt Lake levels drop. By tying action to the Lake's elevation, we can better help halt its decline and gauge how successful our actions are. Our proposed legislation encourages voluntary water-sharing agreements, acquiring water rights from willing sellers, and imposing modest fees on non-agricultural secondary water users who currently pay very low flat rates for huge quantities of water for outdoor use.

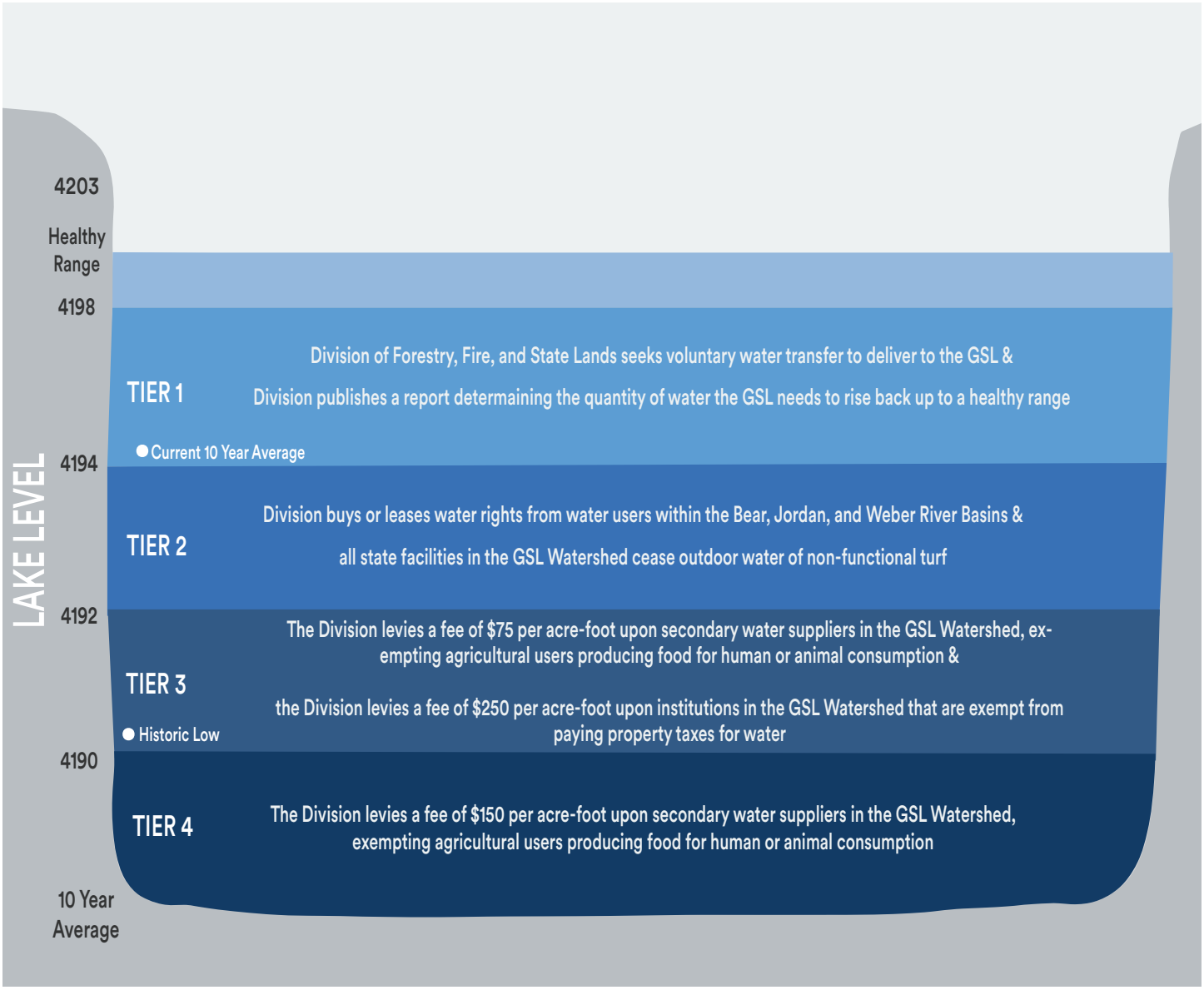
Figure 14 summarizes the proposed policy actions that would be taken at certain Lake elevation thresholds.

Problem and Solution Summarized

Problem: Upstream water use is the biggest driver of Great Salt Lake decline and if we aren't addressing it, we aren't solving the problem facing us. Currently, no Great Salt Lake policies are tied directly to the water level of the Lake. This disconnect adds a layer of separation between the urgency of what the Lake needs to survive, and inaction from water users upstream because no plans exist.

Solution: Use the framework created by the Great Salt Lake Drought Contingency Plan bill to tie policy action to Lake levels. Under this legislation, dropping water levels would trigger increasingly more rigorous policies to bolster Lake levels.

Figure 14. Great Salt Lake Drought Contingency Framework



The Great Salt Lake Drought Contingency Bill aims to keep water levels in the Great Salt Lake in its healthy range by imposing gradually more serious conservation measures as Lake levels drop.

Not a Solution: Dikes and Berms

The record low levels set at the Great Salt Lake in 2021 and 2022 have some calling for the construction of new dikes and berms in the Lake.

This is not a solution, and is in fact dangerous, as any new dikes or berms in the Great Salt Lake have the potential to permanently and seriously disrupt the ecosystem. A dike built with the intention of maintaining acceptable salinity and water levels in one portion of the Lake necessarily means that a different portion of the Lake – the one disconnected from the Lake's main tributary rivers and sources of water – will suffer.[273]

Aerial photo of the railroad causeway that bisects the Great Salt Lake.

Worse yet, constructing dikes as a management solution under the false banner of being 'temporary' leads to an increasingly shrunken water body that effectively signals a failed water policy that becomes entrenched as the new status quo.

There is only one real way to save the Great Salt Lake as a whole: reduce our unsustainable water use, which is the chief cause of the Lake's decline. A new dike or berm in the Lake will not achieve this, commonsense water conservation policies will.

Despite this, the State of Utah has taken steps to pave the way for more dikes on the Great Salt Lake. In 2023, the Utah Legislature passed HB 513: Great Salt Lake Amendments.[274] This bill grants the Division of Forestry, Fire, and State Lands the power to "construct, operate, modify, and maintain one or more additional berms, dikes, structures, or management systems," in the Great Salt Lake whenever salinity levels in the Lake get high enough to inhibit brine shrimp and brine fly reproduction.[275]

The bill effectively grants the DFFSL broad powers to fundamentally and permanently change the physical character and ecosystem of the Great Salt Lake.

Similarly, some members of the state's Great Salt Lake Salinity Advisory Committee have expressed interest in a proposal to build a dike from Carrington Island to the Union Pacific Railroad Causeway, that would vertically bifurcate the South Arm of the Great Salt Lake.[276]

Although they may be reticent to admit it, the state's actions thus far are starting to put the Great Salt Lake on the path of the Aral Sea. Walking this path further will only lead us into more dangerous territory.

The Aral Sea: A Cautionary Tale

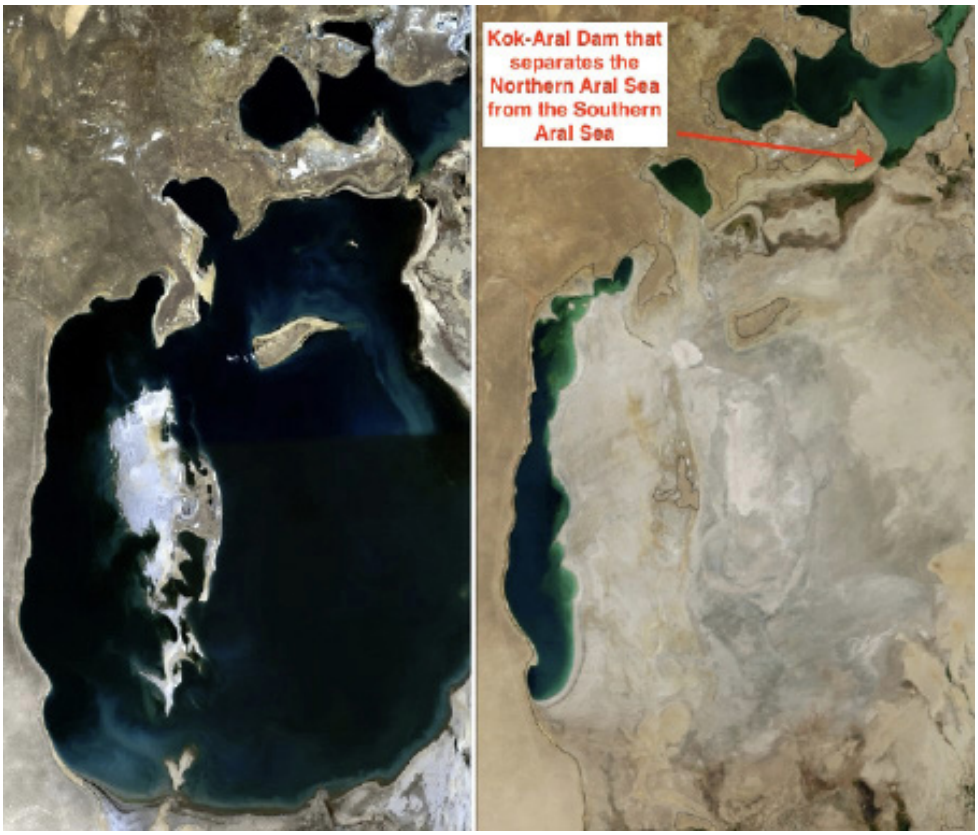
Utahns should look to the abandonment and collapse of the Southern Aral Sea as warning of the dangers of opting to dike a drying lake rather than address the unsustainable diversions behind its decline.

Throughout the 20th century, the Soviet Union developed the Aral Sea's two main tributary rivers, the Amu Darya and Syr Darya, and began diverting large quantities of water for cotton cultivation.[277] Strict quotas imposed by the Soviet Union increased cultivation in the region dramatically. By 1990, over 10 million acres of land were being used to grow cotton.[278]

Eventually, approximately 90 percent of the natural flow of the Amu Darya and Syr Darya was being used for cotton and other crop production.[279] The result was the rapid and catastrophic decline of the Aral Sea.

Following the collapse of the Soviet Union in the 1990's, the newly formed republics of Kazakhstan and Uzbekistan inherited the Aral Sea problem. To this day extensive water diversions continue to drive the Aral Sea toward desiccation.[280]

To stanch the bleeding, in 2005 Kazakhstan and the World Bank partnered to construct the Kok-Aral dike system, an eight-mile dam that divided the Northern Aral Sea from the Southern Aral Sea.[281] The dike has successfully restored some of the Northern Aral Sea, which captures water from the Syr Darya, but at the expense of the Southern Aral Sea.[282] Without inflow from the Syr Dara, the Southern Aral Sea is likely to remain largely desiccated.



The Aral Sea in 1989 (left) and 2014 (right). The Kok-Aral dam, built in 2005, prevents water from the Syr Darya from flowing to the Southern Aral Sea. This preserves the Northern Aral Sea, but ensures that the Southern Aral Sea remains largely desiccated.

The Aral Sea is a far cry from what it used to be. Instead of one continuous body of water, the Sea is now split into several much smaller and largely disconnected lakes that are mostly incapable of providing many useable resources (e.g. fish, biodiversity, dust mitigation, etc.).[283]

Utahns should be wary of following the same path. The Great Salt Lake, like the Aral Sea, is declining largely due to unsustainable water diversions – a problem that a dike cannot fix. If we want to preserve the Great Salt Lake, and not just a small portion of it, we must work to reduce our water use. We should not be wooed by proposals to dike portions of the Lake to achieve short term gains because the trade-off is the long-term destruction of the Lake itself.

We have the ability to get sufficient water to the Lake to restore the entire ecosystem. Our ultimate goal is to restore the Lake to a truly healthy state, and the solution is not building permanent, destructive dikes that will irreparably alter the Great Salt Lake.

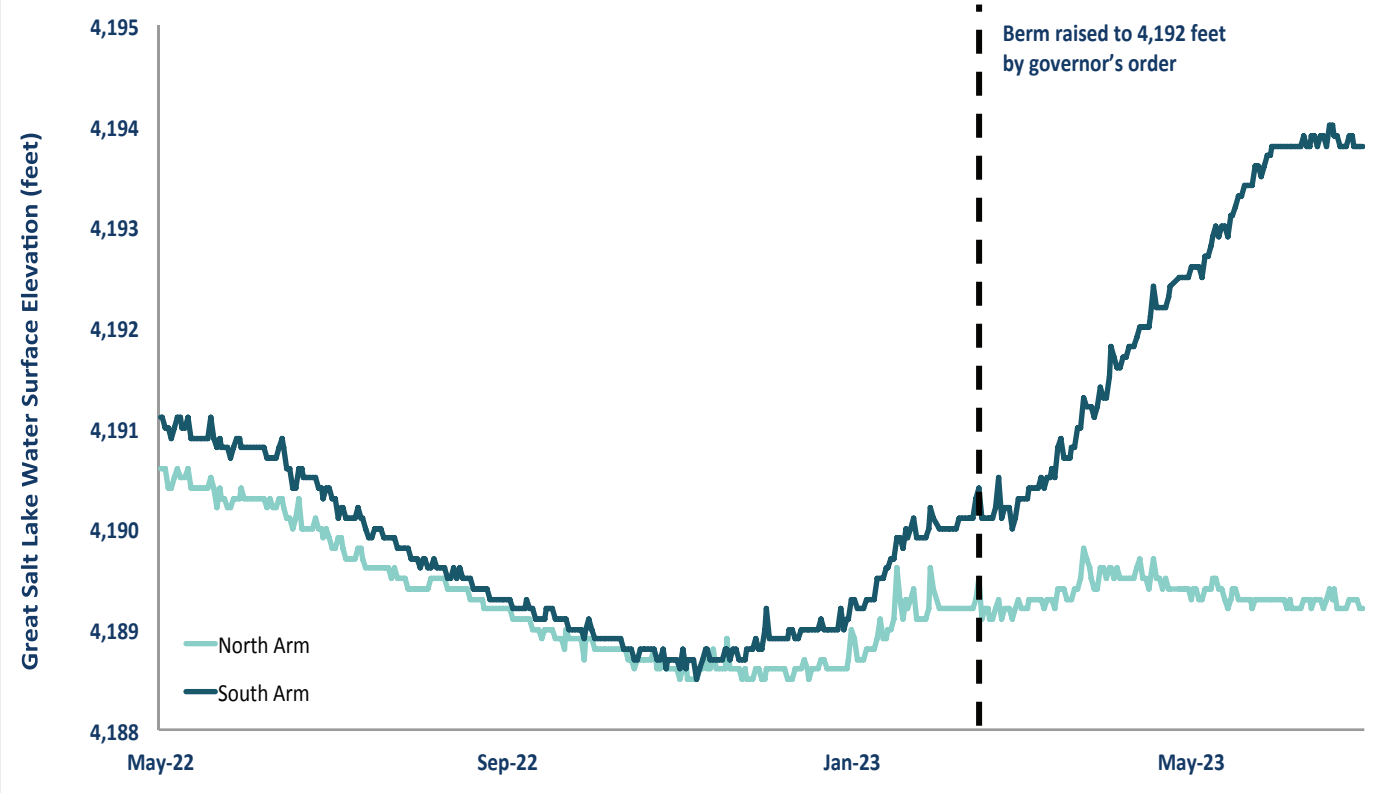
How Does the Causeway Affect the Great Salt Lake?

The Union Pacific Railroad Causeway is a 13-mile rock-fill causeway that bifurcates the Great Salt Lake into two pieces: the North and South Arms. Since its construction, the causeway has undergone many modifications that have changed the hydrologic interactions between the North and South Arms of the Lake.[284,285] The most relevant of these modifications is a breach that was added to the causeway in 2016 to help improve water flow between the Lake's two arms.

Today, that breach is the primary way that water moves between the North and South Arms. The state has sought to regulate the flow of water between these two arms by building a berm inside this breach that can be raised or lowered to allow more or less water through. The berm is a powerful tool that can be used carefully to create better outcomes for the Lake, but it does not come without tradeoffs.

For example, in February 2023, Governor Spencer Cox ordered that the berm be raised to 4,192 feet to ensure that the majority of the forthcoming water from the spring runoff stay in the South Arm to lower the dangerously high salinity levels.[286] While the raising of the berm did help tame rising salinity in the South Arm,[287] it came at the expense of the North Arm, which received almost no water from the spring runoff. This resulted in dramatic differences in the water surface elevations of the North and South Arms, which can be seen clearly in Figure 15.

Figure 15. North and South Arm Elevations, May 2022 - July 2023



After the causeway berm was raised to 4,192 feet, the elevation of the South Arm increased dramatically, while the North Arm mostly stayed near record low levels. Data from the USGS.,

Fortunately, the situation in the North Arm is starting to improve. After the 2023 spring runoff, the elevation of the South Arm was approximately 4,194 feet, which is taller than the berm.[290] And so, water from the South Arm began rapidly spilling into the North Arm, finally delivering some of the much-needed water from the spring runoff to the other half of the Lake.[291]

This process is starting to slowly bring water levels in the North and South Arms back together. While this is good news for the North Arm and the Lake as a whole, it does mean that the South Arm will begin to come back down from its 4,194-foot-high point. By the fall of 2023, the South Arm will likely not be much higher than its previous record low of about 4,189 feet, meaning we still have a long way to go to save the Great Salt Lake, even with the historic 2023 winter in Utah.

We must be careful how we manage the berm in the future. If we continue to prioritize water levels in the South Arm at the expense of water levels in the North Arm, we run the risk of effectively sacrificing the North Arm entirely. This would bring numerous bad consequences, not the least of which would be creating massive swaths of exposed lakebed that could create dust storms in the nearby communities.

A Great Blue Heron on the shore of the Great Salt Lake

9. Fund Great Salt Lake Restoration by Repurposing Redundant Taxes

Saving the Great Salt Lake is going to cost Americans a lot of money, as is anything worth doing. Buying water rights, investing in irrigation efficiency on farms, investing in water conservation programs in our cities, and the many other multi-year efforts required to restore the Great Salt Lake will take public and private capital.

Utah Senator Mitt Romney told a Utah media outlet that saving the Great Salt Lake could cost "many billions of dollars."[292]

The question is where will all this money come from? Fortunately, the State of Utah already has one major untapped source of funds that could be used to save the Great Salt Lake. Currently it is being directed to fund future diversion projects upstream, a certain step toward destroying the Lake.

It's Already There: The Water Infrastructure Restricted Account

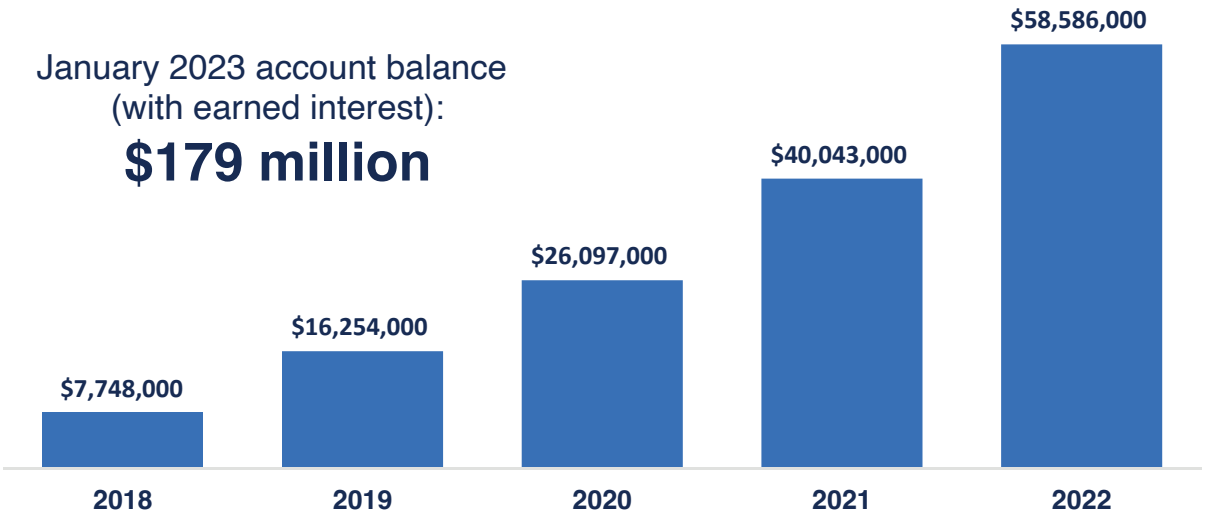
In 2015 and 2016, Senator Stuart Adams sponsored legislation subsequently passed by the Utah Legislature to redirect 1/16th of every cent collected from an existing sales tax collection for a new fund to advance water diversion of the Bear River and the Colorado River.[293,294]

Called the Water Infrastructure Restricted Account (WIRA), its sole purpose is to collect funds for "development of the state's undeveloped share of the Bear and Colorado Rivers..."[295] The funds are to be used to advance proposed Bear River Development and the proposed Lake Powell Pipeline.

Black-necked stilts feeding at sunrise.

At first glance, 1/16th of every cent of sales tax revenues may not sound like a lot of money, but Utah's total sales tax collections have increased from $1.2 billion in 2015 to roughly $2.1 billion in 2021.[296] Even a small fraction of this total pot of money is worth tens of millions of dollars. Many may be startled to learn that WIRA is now accruing some $60 million from sales taxes each year to advance these unnecessary water projects. As of January 2023, this fund had a balance of nearly $180 million.[297,298]

Figure 16. Sales Tax Revenues Put into WIRA



As of January 2023, the WIRA account to advance proposed Bear River Development and effectively dry up the Great Salt Lake had a balance close to $180 million. Some $60 million is now being collected each year for this purpose.

Getting It Here: Redirect Taxes to Help Save the Great Salt Lake

During the 2023 legislative session, the Utah Rivers Council worked with Representative Joel Briscoe to try and capture these funds to raise Great Salt Lake water levels. HB 286, Great Salt Lake Funding Modifications, would have redirected the sales tax funds going into WIRA and put it into an account to fund Great Salt Lake saving activities for a period of five years.[299] This legislation would have generated $300+ million for Great Salt Lake restoration efforts, including purchasing water rights and funding other activities to benefit the Great Salt Lake.

Unfortunately, HB 286 wasn't even allowed to advance out of the House Rules Committee because the committee's chairman refused any discussion of the proposed bill.[300] HB 286 is a viable, win-win solution to get money to save the Great Salt Lake. All we need is for legislators to pass it.

Problem and Solution Summarized

Problem: Utah needs money to fund Great Salt Lake saving activities. The Water Infrastructure Restricted Account – an account dedicated almost solely to advancing large water development projects like the proposed Bear River Development – has a huge surplus of funds and collects an additional $60+ million annually.

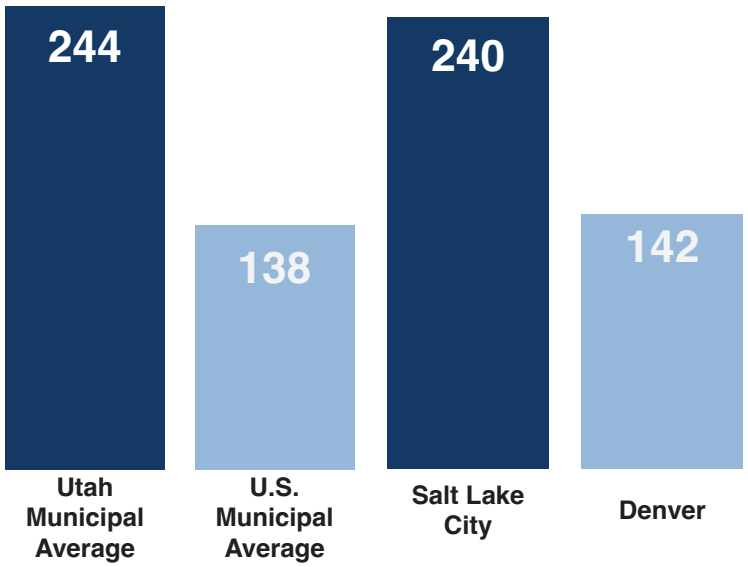
Solution: Pass a bill – like HB 286 from the 2023 legislative session – that would temporarily redirect some of the funds earmarked to go to the Water Infrastructure Restricted Account to Great Salt Lake saving activities, like buying water rights, improving irrigation efficiency on farms, converting lawns to xeriscapes, and much more. Redirecting funds for just five to ten years would generate $300 to $600 million for Lake-saving activities.

10. Strengthen Utah's Municipal Water Conservation Goals

Any effort to conserve water in the municipal sector must start by setting sufficiently aggressive water conservation goals, something the State of Utah has thus far failed to do. Utah's cities collectively use a significant amount of water in the Great Salt Lake Basin – approximately 360,000 acre-feet per year.[301] The total amount of water diverted is much larger than this depletion estimate. This heavy water use represents an opportunity for the Great Salt Lake. By reducing municipal water use through commonsense conservation measures, the state could free up a significant portion of this water for the Lake without affecting the standard of living along the Wasatch Front.

Utah is consistently among the country's most wasteful municipal water user, with reports charting us as America's #1 highest or #2 highest per person municipal water user.[302,303] Although water lobbyists pushing for costly new water projects have bristled at these findings, they have also presented staggeringly high per person water use figures as justification for new water projects like proposed Bear River Development.[304] Figure 17 shows per person municipal water use for select Utah cities in comparison to other U.S. cities.

Figure 17. Per Person Water Use, 2015



Utah has some of the highest per person municipal water user in the nation.

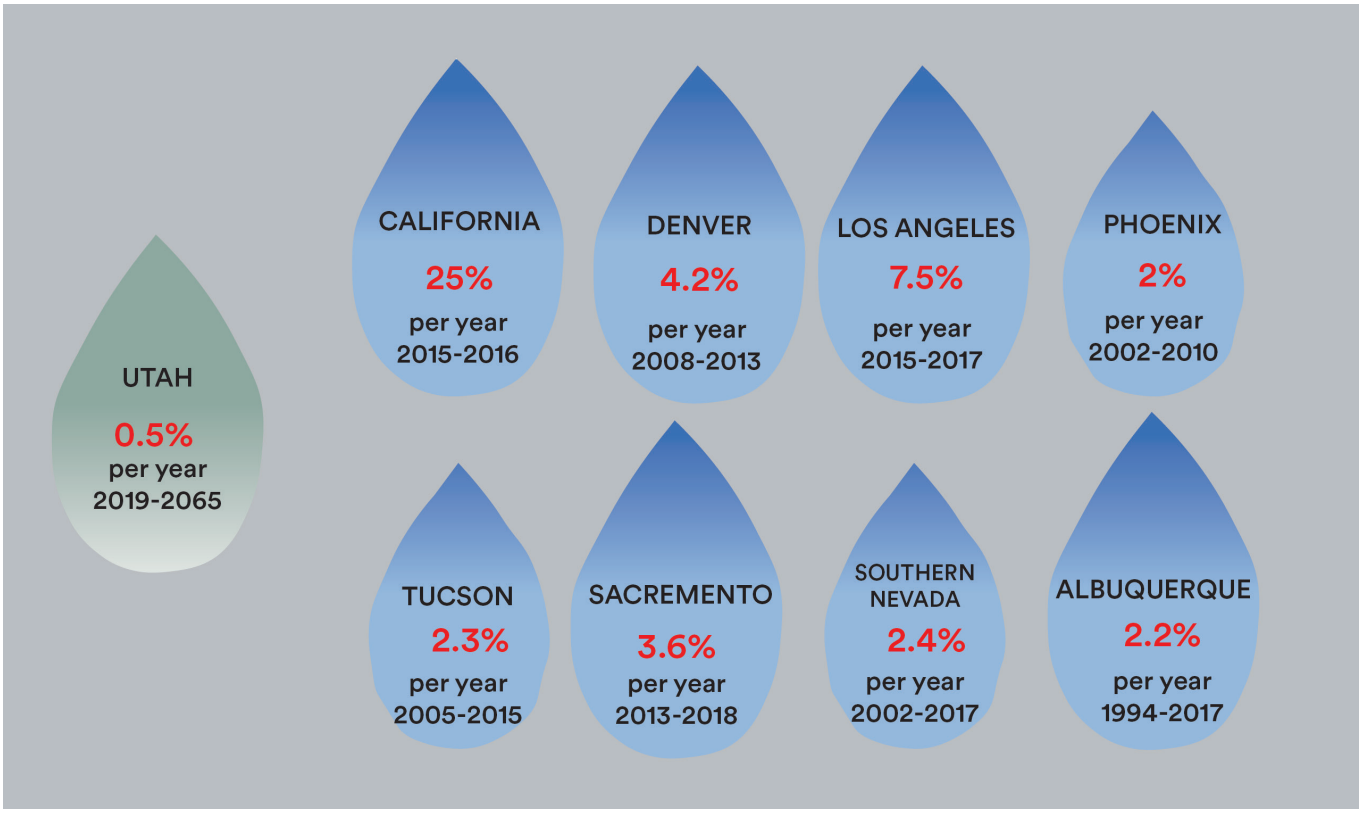
In 1998, the Utah Rivers Council wrote the Utah Water Conservation Plan Act – Utah's first real water conservation law.[305] It required that Utah water suppliers prepare a plan describing how they would go about conserving water, although it did not force them to actually save water. Although compliance was slow at first, over the years a number of excellent water conservation plans have been prepared to help cities plan for their water demand reduction efforts. The most important aspect of any plan is the overall goal that is set to reduce water use.

Municipal water conservation goals are critical because they determine how much water use will be reduced, and in the process save taxpayers millions or billions of dollars by deferring or eliminating the need for new water diversions like the proposed Bear River Development.

Utah's Current Municipal Conservation Goals

Up until 2019, Utah's statewide water conservation goal was to reduce water use by 1 percent per year.[306] Deciding that we had saved too much water, the proponents of Bear River Development – the Utah Division of Water Resources – lowered the state's overall water conservation goal to just 0.58 percent per year.[307] Other states in the American West have gone the other way, adopting far more aggressive water reduction goals, as shown in Figure 18. For example, the Southern Nevada Water Authority reduced its water use 47 percent between 2002 and 2020 for its Las Vegas customers, a drop of 2.5 percent per year.[308]

Figure 18. Water Use Reductions Achieved by Various Western Cities



Water conservation reduction targets (in red) of various commmunities and era in which the target was achieved. Many other major western cities have achieved water use reductions much larger than Utah's current goal of reducing water use 0.58% per year.

Despite the fact that other western U.S. cities are decades ahead of Utah in conserving water, the Utah Division of Water Resources has continued to embrace anemic water conservation targets. Figure 19 shows the state's new, weakened conservation goals, aiming to reduce municipal water use to a statewide average of 188 gallons per capita per day (GPCD) by 2040.[309] That is much higher than the water use of Las Vegas,[310] Los Angeles,[311] Albuquerque,[312] Tucson and many other cities.[313] Worse, in 2022 the Utah Legislature amended the Water Conservation Plan Act to allow water suppliers to adopt even weaker conservation goals.[314]

Figure 19. URC Analysis of 2019 Conservation Goals Report

Region	Baseline (gpcd) from 2015	2030	2040	2065	% Change per year
Bear River *	304	249	232	219	-0.65
Salt Lake *	210	187	178	169	-0.43
Weber River *	250	200	184	175	-0.71
Lower Colorado River South **	305	262	247	237	-0.50
Green River	284	234	225	225	-0.46
Lower Colorado River North	284	231	216	205	-0.65
Provo River	222	179	162	152	-0.75
Sevier River	400	321	301	302	-0.56
Upper Colorado River	333	267	251	248	-0.59
Statewide	**240**	**202**	**188**	**179**	**-0.58**

* Proposed Bear River Development Recipients

** Proposed Lake Powell Pipeline Recipients

Utah's previous municipal conservation goal was to reduce water use 1 percent per year. However, the updated goals dropped that savings target to just 0.58 percent per year.

The Solution: Create Better Municipal Conservation Goals

In 2019, the Utah Rivers Council wrote a bill that was courageously sponsored by Representative Suzanne Harrison that would improve Utah's municipal water conservation goals. HB 143 would have required local water suppliers to consider what actions they would need to take to reduce their water use to 175 gallons per person per day.[315] The bill would not have required that water suppliers reduce their water use to 175 GPCD, just study it. Unfortunately, this legislation was defeated in committee.[316]

Lobbyists representing the Jordan Valley Water District and Washington County Water District fought against the measure heavily.[317] Former legislator and current Director of the Department of Natural Resources Joel Ferry spoke against it and voted against the measure in committee, alongside many other legislators.[318]

After the Division's water conservation goals report was released, the Utah Rivers Council once again tried to encourage the state to adopt more aggressive conservation goals. This time, we launched a campaign to change the state's water conservation goal to a 2 percent per year reduction.[319] Over 50 local businesses have signed onto a letter to Governor Spencer Cox encouraging him to adopt this goal as part of the URC's Save 2% for Utah Campaign.[320]

The state has not yet adopted more aggressive municipal water conservation goals. This is a relatively easy step the state could take, and doing so would greatly aid our collective efforts to save the Great Salt Lake.

Problem and Solution Summarized

Problem: Utah's municipal water conservation goals are weak and ineffective. This creates water waste, inflates future water demand projections to justify spending on unnecessary new water projects, and wastes billions in taxpayer money.

Solution: Adopt stronger municipal water conservation goals by setting Utah's goal to reduce per person water use by 2 percent per year and by adopting a sufficiently aggressive GPCD target like that which was outlined by HB 143 in the 2019 legislative session.

11. Eliminate Ornamental Grass

Look around Utah's cities and towns and you'll see where the majority of urban water is used: irrigating grass. Many species of grass use much more water than the native plants and flowers typically found in a water wise landscape.[321] Likewise, many homeowners and institutions overwater outdoor landscapes by watering sidewalks and streets, by turning on sprinkler systems too early in the year or using them too late into the fall, failing to use rain gauges to shut off irrigation during storm events, or engaging in other wasteful watering practices.[322] Fortunately, there's one simple step Utah could take to reduce water use without sacrificing anything of real value: eliminate non-functional turf.

Non-functional turf, or ornamental grass, is typically defined as grass that is largely decorative, provides no recreational value, and/or is not safe to access and use.[323] As one water manager from Nevada put it, if the only contact a lawn gets from a human is via a lawnmower – it's non-functional. A large portion of Utah's vast landscapes of grass are non-functional turf, or areas that are only touched when somebody walks over them with a lawnmower.

In 2005, scientists from NASA and NOAA conducted one of the first satellite-based, nationwide surveys of grass in the United States.[324] They estimated that around 300,000 acres of land in Utah – mostly residential, commercial, and institutional lawns, parks, golf courses, and athletic fields – was covered by turf grass. Most of this turf grass was found along the Wasatch Front. That's enough grass to entirely cover about 40 percent of the state of Rhode Island. More recent estimates indicate that in the Great Salt Lake Basin alone, about 40,000 acres of land are covered exclusively by residential irrigated landscapes.[325]

Park strips are usually filled with non-functional turf which serves no purpose except to absorb large quantities of water. Numerous alternatives exist to non-functional turf that are visually beautiful and far more water friendly.

Areas of non-functional turf provide little to no benefit to society. They aren't used for picnicking, sports, or any recreation; because of it, water is being diverted from the Great Salt Lake for nothing more than decoration. Many grass landscapes are inaccessible, such as freeway offramps, road medians and other areas that are not conducive to safe human contact. Yet, they are watered regularly with diverted water instead of that water free-flowing to the Great Salt Lake.

Some states have begun tackling wasteful water use by banning non-functional turf entirely. Nevada – inspired by the success of Las Vegas's aggressive turf removal program – passed a law that prohibits all non-functional turf by 2026, and grass from unused areas is being removed presently to meet this goal.[326] In California, the governor signed an executive order banning the watering of non-functional turf in 2022.[327]

Utah can take the first step to help save the Lake in this area by surveying all the non-functional turf in the Great Salt Lake Basin. After identifying where that non-functional turf exists, these useless, water-wasting parcels can be removed to save both water and taxpayer funds.

Problem and Solution Summarized

Problem: Utah has a large quantity of nonfunctional turf – grass landscapes that are only touched by people when they are mowed – that wastes water for ornamental purposes instead of letting it flow to the Great Salt Lake.

Solution: Survey grass landscapes in the Great Salt Lake Basin to identify areas of nonfunctional turf. Begin a program similar to those in Nevada and California to systematically remove these low-value turf areas, and replace them with water wise landscaping.

12. Fix Leaky Pipes to Eliminate Water Waste

Leaks are a significant source of water waste, given that much of our aging water infrastructure was constructed in the 20th century.[292] In the United States, water utilities lose an estimated 20 to 50 percent of their treated water to leaks.[293] One of the most cost-effective ways to reduce upstream impacts on the Great Salt Lake is to identify and repair broken or otherwise leaking pipes in the municipal water delivery system.

Here in Utah, a range of data indicates municipal leaks are a serious problem worth addressing. A recent study from Utah State University found that water main breaks increased 27 percent from 2012 to 2018.[328] Another study found that, prior to a system overhaul in the mid-2010's, the City of Logan responded to an average of 300 mainline breaks a year.[329] A study conducted by consultants for the Division of Water Resources also reviewed water use data from a handful of water suppliers in the Great Salt Lake Basin and found that those suppliers lose an estimated 28,000 acre-feet of water each year.[330] The same study noted that data on water loss is "insufficient," meaning the 28,000 acre-feet could very well be an underestimate.[331]

Utah has no standards or systems in place to fix broken and leaky pipes in municipal water systems, leading to water waste. Creating new laws to tackle this problem would help get more water to the Great Salt Lake. Zachary Frankel photograph.

Repairing leaks not only cuts unnecessary water waste, but saves utilities and consumers money by reducing pumping and treatment costs.[334] Having the capability to quickly detect leaks and to be able to fix them before vast quantities of water are spilled and wasted could significantly improve the efficiency of our water delivery systems.

The American Water Works Association (AWWA) – the largest water trade association in the world – recognizes just how wasteful leaks can be and has developed software to help water suppliers reduce water loss.[335] Implementing these practices has helped utilities recover as much as 75 percent of their lost water.[336]

For these reasons, the AWWA has developed legislation in states outside Utah to push cities to use this software to identify and repair municipal water leaks in their systems. These laws helped other states fix problems before they worsened, and saved water and ratepayer funds. Many other states have implemented measures such as setting statutory limits on water loss and mandating leak detection and leak repair programs.[337]

For the 2020 legislative session, the AWWA helped draft a bill in Utah which provided $1.35 million in one-time funding and $300,000 in ongoing funding for utility staff training to use the leak-detection software.[338] Representative Melissa Ballard spearheaded the effort to establish some basic water loss control measures in the state. The hope was that we could save water by training water utility staff how to use the software to identify water leaks.

Before the bill went to committee, Utah water lobbyists pushed against the measure, recruiting allies to kill the measure by arguing it should be left to local control. The Utah Rivers Council submitted GRAMA requests and obtained emails from Fred Finlinson – a prominent Utah water lobbyist – sent to the general managers of several major Utah water districts characterizing the proposed leak detection bill as "flat out ugly."[339]

The emails also revealed that Mr. Finlinson worked with the general managers of major Utah water districts to entirely rewrite the proposed leak detection bill, gutting all funding and actionable measures, and replacing them with a study.[340]

Nicole Hunter

From: Fred Finlinson <Fred@fcfinlaw.com>
Sent: Saturday, February 15, 2020 4:06 PM
To: Tage Flint; Bart Forsyth; Zach Renstrom; Gene Shawcroft; Todd Adams; Todd Stonely
Cc: Fred Finlinson
Subject: Substitute HB 40 Draft
Attachments: Prep 60 HB 40 Substitute Bill. 1.13.20.docx

To All: I want to thank each of you for responding so quickly with comments and suggestions. I have taken the comments and blended them into the attached 2/15/20 Draft. I plan to send the revised document to Rep. Ballard on Tuesday morning, so that she can take it to LR&GC for drafting. I've included Todd Adams recommendation to allow the working group to determine the size of those being required to do the water loss accounting rather than limiting in the scope the action to just 1st and 2nd Class Counties. This will allow the subject to be developed by the working group. Hopefully you can find your favorite recommendation in this revised draft. If I have really missed the boat, please advise. Unless directed otherwise, the revised draft will go to Rep. Ballard on Tuesday morning. Thanks and hope you have a great week end. Fred

Email communication from water lobbyist Fred Finlinson thanking the general managers of major water districts and the then-director of the Division of Water Resources for helping draft the watered-down, substitute version of the leak detection bill. Obtained by the URC via GRAMA.[341]

As a testament to her perseverance, Rep. Ballard was able to successfully pass HB 40 in the 2020 General Session, which created a working group to develop recommendations for a leak control program in Utah.[342] The benefits were obvious, and optimism was high. After studying the measure for more than a year with the working group, Rep. Ballard ran a bill in the 2022 General Session to create substantive water loss control measures in Utah. The bill was defeated on the House Floor.[343]

It has been estimated that water utilities in the United States lose 20-50% of their treated water to leaks

Credit: Horst Gutmann

Today, Utah has no official policy in place to address water losses.[344,345,346] This story spotlights the special interest power of Utah's water districts. Their ability to kill good legislation must be reined in because it's blocking important measures that are firmly in the public interest.

Utah's leaders need to get serious about taking on leaks. The wasting of both water and money is outright ridiculous, and it is incompatible with leaders' claims that they are working in good faith to save the Great Salt Lake.

Problem and Solution Summarized

Problem: Utah is ignoring opportunities to reduce water losses in distribution systems – something that can waste 20 to 50 percent of a utilities' treated water.

Solution: Pass a bill like HB 115 from the 2022 General Session that would mandate that large suppliers adopt basic water loss control measures and reduce water wasted from leaks and breaks.

Appendices: Bill Language for Proposed Policies

The appendix contains bill language for consideration by the Utah Legislature to restore the Great Salt Lake with for the 4,200 Project legislation. Some of the bills shown here are real bills the Utah Rivers Council has prepared for legislators in their efforts to run legislation inside the Utah Statehouse. The appendix titles of these bills correspond to the 4,200 Project policies described earlier in this Guidebook.

LEGISLATIVE GENERAL COUNSEL
₵ Approved for Filing: P. Owen ₵
₵ 01-26-23 2:19 PM ₵

S.C.R. 6

CONCURRENT RESOLUTION REGARDING THE GREAT SALT LAKE ELEVATION TARGETS

2023 GENERAL SESSION

STATE OF UTAH

Chief Sponsor: Nate Blouin

House Sponsor: _____

LONG TITLE

General Description:

This resolution addresses the Great Salt Lake.

Highlighted Provisions:

This resolution:

- describes the current status of the Great Salt Lake;
- addresses the impacts of the Great Salt Lake on the state's economy;
- discusses the impacts of low lake levels; and
- recommends the adoption of a goal to devise and implement policies, incentives, and funding sources to return the Great Salt Lake to optimal levels.

Special Clauses:

None

Be it resolved by the Legislature of the state of Utah, the Governor concurring therein:

WHEREAS, the Great Salt Lake has shrunk by 350,000 acres, resulting in historically low lake levels and creating a range of impacts on industry, wildlife species, and human health;

WHEREAS, the Great Salt Lake supports a $1,400,000,000 input to the state economy, employing many Utahns across an array of sectors, including industry, recreation, and tourism;

WHEREAS, declining water levels of the Great Salt Lake threaten the numerous mineral extraction companies and their 5,000 plus employees that collectively provide over

$800,000,000 in economic benefits to the state;

WHEREAS, the Great Salt Lake brings significant lake-effect snowfall to the Wasatch Front's ski areas, generating over $1,322,000,000 in out-of-state spending, 21,000 local jobs, and $226,400,000 in local tax revenue every year;

WHEREAS, declining water levels of the Great Salt Lake are causing salinity levels to rise, threatening the lake's algae and phytoplankton populations, which provide a food source for brine shrimp and support the state's $67,000,000 brine shrimp industry;

WHEREAS, numerous recreational activities, including waterfowling, sailing, rowing, birdwatching, hiking, and swimming, have already been significantly impacted or altogether eliminated from the Great Salt Lake due to low water levels;

WHEREAS, low water levels in the Great Salt Lake have exposed over 350,000 acres of lakebed, which contain heavy metals such as arsenic, copper, antimony, and zirconium, and which could have significant air quality and public health issues along the Wasatch Front;

WHEREAS, exposure of the lakebed leads to an increase in dust accumulation on the snowpack, causing the snow to melt faster, and impacting our water supply;

WHEREAS, the Great Salt Lake provides important nesting and feeding habitat for over 10,000,000 migratory birds, representing over 330 species, some of which gather at the Great Salt Lake during their migrations in larger numbers than anywhere else in the world;

WHEREAS, the Great Salt Lake is home to one of the largest populations of microbialites in the world, which serve as the foundation for the Great Salt Lake's complex ecosystem, and are threatened by the current, low water levels of the Great Salt Lake;

WHEREAS, an array of published scientific studies indicate that the bottom level of the optimal range for the water levels of the Great Salt Lake is 4,198 feet in elevation;

WHEREAS, the Great Salt Lake needs between four and six million acre-feet of additional water at the time of this resolution to return the Great Salt Lake to this optimal water level;

WHEREAS, Utah does not wish to follow the path of numerous other communities across the globe whose saline lakes have disappeared and brought environmental, social, ecological, economic, and public health harm to those communities; and

WHEREAS, the Great Salt Lake, the namesake of our state's capital city and home to three separate state parks, plays an important societal and cultural role in the state, the loss of

which would significantly degrade Utah's rich cultural heritage:

NOW, THEREFORE, BE IT RESOLVED that the Legislature of the state of Utah, the Governor concurring therein, recommends that the official goal for the state is to devise and implement an array of policies, incentives, and funding sources to return the Great Salt Lake to optimal levels by raising the lake's surface elevation to at least 4,198 feet.

INSTREAM FLOW AMENDMENTS

Be it enacted by the Legislature of the state of Utah:

73-3-30. Change application for an instream flow -- Change application for delivery to a reservoir.

(1) As used in this section:

(a) "Colorado River System" means the same as that term is defined in Sections 73-12a-2 and 73-13-10

(b) "Division" means the Division of Wildlife Resources created in Section 23-14-1, the Division of State Parks created in Section 79-4-201, or the Division of Forestry, Fire, and State Lands created in Section 65A-1-4.

(c) "Person entitled to the use of water" means the same as that term is defined in Section 73-3-3.

(d) "Sovereign lands" means the same as that term is defined in Section 65A-1-1.

(e) "Wildlife" means species of animals, including mammals, birds, fish, reptiles, amphibians, mollusks, and crustaceans, that are protected or regulated by a statute, law, regulation, ordinance, or administrative rule.

(2) (a) Pursuant to Section 73-3-3, a division or a person entitled to the use of water may file a permanent change application, a fixed time change application, or a temporary change application, ~~or a person entitled to the use of water may file a fixed time change application or a temporary change application,~~ to provide water within the state for:

(i) an instream flow within a specified section of a natural or altered stream; or

(ii) use on sovereign lands.

(b) The state engineer may not approve a change application filed under this section unless the proposed instream flow or use on sovereign lands will contribute to:

(i) the propagation or maintenance of wildlife;

(ii) the management of state parks; or

(iii) the reasonable preservation or enhancement of the natural aquatic environment.

(c) A division may file a change application on:

(i) a perfected water right:

(A) presently owned by the division;

(B) purchased by the division for the purpose of providing water for an instream flow or use on sovereign lands, through funding provided for that purpose by legislative appropriation; or

(C) secured by lease, agreement, gift, exchange, or contribution; or

(ii) an appurtenant water right acquired with the acquisition of real property by the division.

(d) A division may:

(i) purchase a water right for the purposes described in Subsection (2)(a) only with funds specifically appropriated by the Legislature for water rights purchases; or

(ii) accept a donated water right without legislative approval.

(e) A division may not acquire water rights by eminent domain for an instream flow, use on sovereign lands, or for any other purpose.

(3) (a) A person entitled to the use of water shall obtain a division director's approval of the proposed change before filing a fixed time change application or a temporary change application with the state engineer.

(b) By approving a proposed fixed time change application or temporary change application, a division director attests that the water that is the subject of the application can be used consistent with the statutory mandates of the director's division.

(4)(a) Pursuant to Section 73-3-3, a person entitled to the use of water may file a fixed time change application or a temporary change application for a project to deliver water to a reservoir located partially or entirely within the Colorado River System in the state in accordance with:

(i) Colorado River Drought Contingency Plan Authorization Act, Public Law 116-14;

(ii) a water conservation program funded by the Bureau of Reclamation; or

(iii) a water conservation program authorized by the state.

(5) In addition to the requirements of Section 73-3-3, an application authorized by this section shall include:

(a) a legal description of:

(i) the segment of the natural or altered stream that will be the place of use for an instream flow; or

(ii) the location where the water will be used on sovereign lands; and

(b) appropriate studies, reports, or other information required by the state engineer demonstrating:

(i) the projected benefits to the public resulting from the change; and

(ii) the necessity for the proposed instream flow or use on sovereign lands.

(6) A person may not appropriate unappropriated water under Section 73-3-2 for the purpose of providing an instream flow or use on sovereign lands.

(7) Water used in accordance with this section is considered to be beneficially used, as required by Section 73-3-1.

(8) A physical structure or physical diversion from the stream is not required to implement a change under this section.

(9) An approved change application described in this section does not create a right of access across private property or allow any infringement of a private property right.

LEGISLATIVE GENERAL COUNSEL
₵ Approved for Filing: S.C. Halverson ₵
₵ 02-01-17 10:05 AM ₵

S.B. 151

PROPERTY TAX RELIEF MODIFICATIONS

2017 GENERAL SESSION

STATE OF UTAH

Chief Sponsor: Jim Dabakis

House Sponsor: _____

LONG TITLE

General Description:

This bill modifies provisions relating to water conservancy district property tax levies.

Highlighted Provisions:

This bill:

- provides that property tax collections of certain water conservancy districts may not exceed a certain amount with exceptions;
- provides that if a water conservancy district determines that emergency circumstances exist, a water conservancy district may levy a property tax that exceeds the property tax collection restriction in certain circumstances;
- prohibits certain water conservancy districts from issuing bonds secured by certain property tax revenue; and
- makes technical changes.

Money Appropriated in this Bill:

None

Other Special Clauses:

None

Utah Code Sections Affected:

AMENDS:

17B-2a-1006, as last amended by Laws of Utah 2010, Chapter 159

Be it enacted by the Legislature of the state of Utah:

Section 1. Section **17B-2a-1006** is amended to read:

17B-2a-1006. Limits on water conservancy district property tax levy -- Additional levy.

(1) Except as provided in Subsection (2), and subject to [~~Subsection~~] Subsections (3) and (4) and Section 17B-2a-1009, the property tax levy of a water conservancy district for all purposes may not exceed:

(a) .0001 per dollar of taxable value of taxable property in the district, before the earliest of:

(i) the planning or design of works;

(ii) the acquisition of the site or right-of-way on which the works will be constructed; or

(iii) the commencement of construction of the works; and

(b) .0002 per dollar of taxable value of taxable property in the district, after the earliest of the events listed in Subsection (1)(a).

(2) Subject to Subsection (3) and Section 17B-2a-1009:

(a) in a district that contains land located within the Lower Colorado River Basin, the levy after the earliest of the events listed in Subsection (1)(a) may be increased to a maximum of .001 per dollar of taxable value of taxable property in the district; and

(b) in a district to be served under a contract, water appropriation, water allotment, or otherwise by water apportioned by the Colorado River Compact to the Upper Basin, the levy after the earliest of the events listed in Subsection (1)(a) may be increased to a maximum of .0004 per dollar of taxable value of taxable property.

(3) [~~A~~] Subject to the restriction in Subsection (4), a water conservancy district may impose an additional property tax levy, not to exceed .0001 per dollar of taxable value of taxable property in the district, if the additional levy is necessary to provide adequate funds to pay maturing bonds or other debts of the district.

(4) (a) Except as provided in Subsections (4)(b) and (c), beginning on July 1, 2020, property tax collections by a water conservancy district may not exceed 15% of a district's total annual revenues according to the district's most recent audited financial statement on record with the state auditor if all or part of the district's service area is within a county of the first or

second class.

(b) A water conservancy district with a service area that comprises more than five counties as of January 1, 2016, is exempt from the restriction in Subsection (4)(a).

(c) If a water conservancy district determines that emergency circumstances exist, a water conservancy district may levy a property tax that exceeds the property tax collection restriction under Subsection (4)(a) if approved by at least 75% of water conservancy district voters at an election held for that purpose.

(5) Beginning on July 1, 2017, a water conservancy district subject to the restriction in Subsection (4) may not issue bonds secured by property tax revenue levied under this section.

Legislative Review Note
Office of Legislative Research and General Counsel

GREAT SALT LAKE DROUGHT CONTINGENCY

Be it enacted by the Legislature of the state of Utah:

Section 65A-1-4 Creation – Power and authority.

(1)(a) The Division of Forestry, Fire, and State Lands is created within the Department of Natural Resources under the administration and general supervision of the executive director of the department.

(b) The Division is the executive authority for the management of sovereign lands, and the state's mineral estates on lands other than school and institutional trust lands, and shall provide for forestry and fire control activities as required in Section 65A-8-101.

(2) The division shall adopt rules under Title 63G, Chapter 3, Utah Administrative Rulemaking Act, necessary to fulfill the purposes of this title.

(3) The division may levy fees to comply with its duties under 65A-10-9 to ensure minimum lake levels at the Great Salt Lake.

~~(3)~~ (4) The director of the Division of Forestry, Fire, and State Lands is the executive and administrative head of the division and shall be a person experienced in administration and management of natural resources.

~~(4)~~ (5) (a) An aggrieved party to a final action by the director may appeal that action to the executive director of the Department of Natural Resources within 20 days after the action.

(b) The executive director shall rule on the director's action within 20 days after receipt of the appeal.

Section 65A-5-1 Sovereign Lands Management Account

(1) There is created within the General Fund a restricted account known as the "Sovereign Lands Management Account."

(2) The account shall consist of the following:

(a) the revenues derived from sovereign lands;

(b) that portion of the revenues derived from mineral leases on other lands managed by the division necessary to recover management costs;

(c) any fees deposited by the division; ~~and~~

(d) amounts deposited into the account in accordance with Section 59-23-4~~.~~; and

(e) amounts deposited into the account in accordance with Section 65A-10-9.

(3) The expenditures of the division relating directly to the management of state lands shall be funded by appropriation by the Legislature from the Sovereign Lands Management Account or other sources.

(4) The Legislature may appropriate money in the account to reimburse one or more state government entities for money spent on the operation of national parks, national monuments, national forests, and national recreation areas in the state during a fiscal emergency, as defined in Section 79-4-1102.

(5) The division shall use the amount deposited into the account under Subsections (2)(d) and (2)(e) for the Great Salt Lake as described in Section 65A-10-8 and 65A-10-9 as directed by the Great Salt Lake Advisory Council created in Section 73-30-201.

(6) After the expenditures under Subsections (3) through (5), the division shall use money appropriated from the Sovereign Lands Management Account to provide for salary increases to state personnel employed by the division to perform wildland fire management with the division prioritizing salary increases for county fire wardens and assistant wardens.

Section 65A-10-0. Definitions

(1) As used in this section:

(a) "Lake level" means the most recent water level measurement from the Saltair Boat Harbor as stated by the United States Geological Survey station managed by the Salt Lake City Field Office.

(b) "Division" means the Division of Forestry, Fire, and State Lands created in Section 65A-1-4.

(c) "Water conservancy district" means an entity formed under Title 17B, Chapter 2a, Part 10, Water Conservancy District Act.

(d) "Secondary water" means water that is untreated and used for irrigation.

(e) "Institutional users" include schools, churches, parks, and government facilities including golf courses, excluding hospitals.

(f) "Residential users" include single-family and multi-family homes, apartments, duplexes, and condominiums.

(g) "Industrial users" include manufacturing plants, oils and gas producers, and mining companies.

(h) "Commercial users" are places of business that are not residential, industrial, institutional, or agricultural.

(i) "Agricultural users" are those that cultivate to produce food for human and animal consumption, including raising crops and animals.

(j) "Outdoor use" is water that is used for irrigation and other non-culinary purposes.

(k) "Culinary purposes" are those used for human consumption.

(l) "Ten-year average" means the average lake level over the course of ten years, as stated by the division's Great Salt Lake Level Report required under Section 65A-10-8(4).

(m) "Non-functional turf" is grass that requires irrigation but provides no recreational or environmental benefits.

(n) "Exempt institutional users" are those who are exempt from paying property taxes.

(o) "State facilities" are building and structures owned or controlled by the state or a state governmental entity.

(p) "Waterfowl management" means the maintaining of wetlands and marshes as part of the Great Salt Lake ecosystem.

Section 65A-10-1 Authority of division to manage sovereign lands.

(1) The division is the management authority for sovereign lands, and may exchange, sell, or lease sovereign lands but only in the quantities and for the purposes as serve the public interest and do not interfere with the public trust.

(2) Nothing in this section shall be construed as asserting state ownership of the beds of nonnavigable lakes, bays, rivers, or streams.

(3) A lease for the construction of a highway facility over sovereign lakebed lands shall comply with the requirements described in Subsection 65A-7-5(5).

(4) The Division may enter into agreements and partnerships as necessary to provide for any action stated in 65A-10-8 and 65A-10-9.

(5) The Division may acquire water rights by any lawful means to provide for any action stated in 65A-10-9 and those acquired water rights will be held by one of the agencies allowed to hold instream flow rights in Section 73-3-30, including the Division of State Parks, created in Section 79-4-201, or the Division of Wildlife Resources, created in Section 23-14-1.

Section 65A-10-8 Great Salt Lake – Management responsibilities of the division.

The division has the following powers and duties:

(1) Prepare and maintain a comprehensive plan for the lake which recognizes the following policies:

(a) develop strategies to deal with a fluctuating lake level;

(b) encourage development of the lake in a manner which will preserve the lake, encourage availability of brines to lake extraction industries, protect wildlife, and protect recreational facilities;

(c) maintain the lake's flood plain as a hazard zone;

(d) promote water quality management for the lake and its tributary streams;

(e) promote the development of lake brines, minerals, chemicals, and petro-chemicals to aid the state's economy;

(f) encourage the use of appropriate areas for extraction of brine, minerals, chemicals, and petro-chemicals;

(g) maintain the lake and the marshes as important to the waterfowl flyway system;

(h) encourage the development of an integrated industrial complex;

(i) promote and maintain recreation areas on and surrounding the lake;

(j) encourage safe boating use of the lake;

(k) maintain and protect state, federal, and private marshlands, rookeries, and wildlife refuges;

(l) provide public access to the lake for recreation, hunting, and fishing.

(2) Employ personnel and purchase equipment and supplies which the Legislature authorizes through appropriations for the purposes of this chapter.

(3) Initiate studies of the lake and its related resources.

(4) Publish scientific and technical information concerning the lake, including a Great Salt Lake Level Report published every year by January 15th with the previous water year's lake level average and the current ten-year lake level average and any other report required by 65A-10-9.

(5) Define the lake's flood plain.

(6) Qualify for, accept, and administer grants, gifts, or other funds from the federal government and other sources, for carrying out any functions under this chapter.

(7) Determine the need for public works and utilities for the lake area.

(8) Implement the comprehensive plan through state and local entities or agencies.

(9) Coordinate the activities of the various divisions within the Department of Natural Resources with respect to the lake.

(10) Perform all other acts reasonably necessary to carry out the purposes and provisions of this chapter.

(11) Retain and encourage the continued activity of the Great Salt Lake technical team.

(13) Carry out the actions set forth in 65A-10-9.

Section 65A-10-9 The Great Salt Lake Drought Contingency Actions

(1) When the ten-year lake level average drops below 4,198 feet:

(a) The Division will seek partners, including water conservancy districts, irrigation districts, canal companies, water user's associations, special service districts, municipalities, and other water rights holders within the Jordan, Weber, and Bear River basins, to voluntarily share water with the Division to deliver to the lake to meet the needs of people, industries, birds, and wildlife, and to sustain air quality by maintaining lake levels; and

(b) After the publishing of the Great Salt Lake Level Report, the Division, with the input of the Great Salt Lake Advisory Council, will publish a report by September 15th that articulates how much additional water needs to flow to the Great Salt Lake to bring the ten-year average of the lake level to its healthy range of 4,198-4,203 feet, and the report should also include potential sources for that water.

(2) When the ten-year lake level average drops below 4,194 feet:

(a) The Division will buy or lease water rights from water users within the Jordan, Weber, and Bear River basins; and

(b) All state facilities in the Jordan, Weber, and Bear River basins will cease outdoor watering of all non-functional turf.

(3) When the ten-year lake level average drops below 4,192 feet:

(a) The Division will levy a fee of $75 per acre-foot upon secondary water suppliers in the Bear, Jordan, and Weber basins unless the water is used for cultivation to produce food for human or animal consumption, including raising crops and animals or for waterfowl management; and

(b) The Division will levy a fee of $250 per acre-foot upon exempt institutional users.

(4) When the ten-year lake level average drops below 4,190 feet, the Division will levy a fee of $150 per acre-foot upon secondary water suppliers in the Bear, Jordan, and Weber basins

unless the water is used for cultivation to produce food for human or animal consumption, including raising crops and animals or for waterfowl management.

(5) Revenue generated by the fees levied in this section shall be deposited in the Sovereign Lands Management Account created in Section 65A-5-1.

LEGISLATIVE GENERAL COUNSEL
₵ Approved for Filing: A.V. Arthur ₵
₵ 01-24-23 2:31 PM ₵

H.B. 286

GREAT SALT LAKE FUNDING MODIFICATIONS

2023 GENERAL SESSION

STATE OF UTAH

Chief Sponsor: Joel K. Briscoe

Senate Sponsor: _____

LONG TITLE

General Description:

This bill provides for sales and use tax revenue to be used to manage the water levels at the Great Salt Lake.

Highlighted Provisions:

This bill:

- changes the recipient of the revenue generated from a 1/16% sales and use tax (the earmarked revenue) from the Water Infrastructure Restricted Account to the Great Salt Lake Account for five years;
- requires legislative review before the recipient of the earmarked revenue reverts to the Water Infrastructure Restricted Account; and
- makes technical and conforming changes.

Money Appropriated in this Bill:

None

Other Special Clauses:

This bill provides a special effective date.

Utah Code Sections Affected:

AMENDS:

59-12-103, as last amended by Laws of Utah 2022, Chapters 77, 106 and 433

63I-1-259, as last amended by Laws of Utah 2022, Chapter 218

63I-1-265, as enacted by Laws of Utah 2020, Chapter 154

65A-5-1.5, as enacted by Laws of Utah 2022, Chapter 54

Be it enacted by the Legislature of the state of Utah:

Section 1. Section **59-12-103** is amended to read:

59-12-103. Sales and use tax base -- Rates -- Effective dates -- Use of sales and use tax revenues.

(1) A tax is imposed on the purchaser as provided in this part on the purchase price or sales price for amounts paid or charged for the following transactions:

(a) retail sales of tangible personal property made within the state;

(b) amounts paid for:

(i) telecommunications service, other than mobile telecommunications service, that originates and terminates within the boundaries of this state;

(ii) mobile telecommunications service that originates and terminates within the boundaries of one state only to the extent permitted by the Mobile Telecommunications Sourcing Act, 4 U.S.C. Sec. 116 et seq.; or

(iii) an ancillary service associated with a:

(A) telecommunications service described in Subsection (1)(b)(i); or

(B) mobile telecommunications service described in Subsection (1)(b)(ii);

(c) sales of the following for commercial use:

(i) gas;

(ii) electricity;

(iii) heat;

(iv) coal;

(v) fuel oil; or

(vi) other fuels;

(d) sales of the following for residential use:

(i) gas;

(ii) electricity;

(iii) heat;

(iv) coal;

(v) fuel oil; or

(vi) other fuels;

(e) sales of prepared food;

(f) except as provided in Section 59-12-104, amounts paid or charged as admission or user fees for theaters, movies, operas, museums, planetariums, shows of any type or nature, exhibitions, concerts, carnivals, amusement parks, amusement rides, circuses, menageries, fairs, races, contests, sporting events, dances, boxing matches, wrestling matches, closed circuit television broadcasts, billiard parlors, pool parlors, bowling lanes, golf, miniature golf, golf driving ranges, batting cages, skating rinks, ski lifts, ski runs, ski trails, snowmobile trails, tennis courts, swimming pools, water slides, river runs, jeep tours, boat tours, scenic cruises, horseback rides, sports activities, or any other amusement, entertainment, recreation, exhibition, cultural, or athletic activity;

(g) amounts paid or charged for services for repairs or renovations of tangible personal property, unless Section 59-12-104 provides for an exemption from sales and use tax for:

(i) the tangible personal property; and

(ii) parts used in the repairs or renovations of the tangible personal property described in Subsection (1)(g)(i), regardless of whether:

(A) any parts are actually used in the repairs or renovations of that tangible personal property; or

(B) the particular parts used in the repairs or renovations of that tangible personal property are exempt from a tax under this chapter;

(h) except as provided in Subsection 59-12-104(7), amounts paid or charged for assisted cleaning or washing of tangible personal property;

(i) amounts paid or charged for tourist home, hotel, motel, or trailer court accommodations and services that are regularly rented for less than 30 consecutive days;

(j) amounts paid or charged for laundry or dry cleaning services;

(k) amounts paid or charged for leases or rentals of tangible personal property if within this state the tangible personal property is:

(i) stored;

(ii) used; or

(iii) otherwise consumed;

(l) amounts paid or charged for tangible personal property if within this state the

tangible personal property is:

(i) stored;

(ii) used; or

(iii) consumed; and

(m) amounts paid or charged for a sale:

(i) (A) of a product transferred electronically; or

(B) of a repair or renovation of a product transferred electronically; and

(ii) regardless of whether the sale provides:

(A) a right of permanent use of the product; or

(B) a right to use the product that is less than a permanent use, including a right:

(I) for a definite or specified length of time; and

(II) that terminates upon the occurrence of a condition.

(2) (a) Except as provided in Subsections (2)(b) through (f), a state tax and a local tax are imposed on a transaction described in Subsection (1) equal to the sum of:

(i) a state tax imposed on the transaction at a tax rate equal to the sum of:

(A) 4.70% plus the rate specified in Subsection (12)(a); and

(B) (I) the tax rate the state imposes in accordance with Part 18, Additional State Sales and Use Tax Act, if the location of the transaction as determined under Sections 59-12-211 through 59-12-215 is in a county in which the state imposes the tax under Part 18, Additional State Sales and Use Tax Act; and

(II) the tax rate the state imposes in accordance with Part 20, Supplemental State Sales and Use Tax Act, if the location of the transaction as determined under Sections 59-12-211 through 59-12-215 is in a city, town, or the unincorporated area of a county in which the state imposes the tax under Part 20, Supplemental State Sales and Use Tax Act; and

(ii) a local tax equal to the sum of the tax rates a county, city, or town imposes on the transaction under this chapter other than this part.

(b) Except as provided in Subsection (2)(e) or (f) and subject to Subsection (2)(k), a state tax and a local tax are imposed on a transaction described in Subsection (1)(d) equal to the sum of:

(i) a state tax imposed on the transaction at a tax rate of 2%; and

(ii) a local tax equal to the sum of the tax rates a county, city, or town imposes on the

transaction under this chapter other than this part.

(c) Except as provided in Subsection (2)(e) or (f), a state tax and a local tax are imposed on amounts paid or charged for food and food ingredients equal to the sum of:

(i) a state tax imposed on the amounts paid or charged for food and food ingredients at a tax rate of 1.75%; and

(ii) a local tax equal to the sum of the tax rates a county, city, or town imposes on the amounts paid or charged for food and food ingredients under this chapter other than this part.

(d) Except as provided in Subsection (2)(e) or (f), a state tax is imposed on amounts paid or charged for fuel to a common carrier that is a railroad for use in a locomotive engine at a rate of 4.85%.

(e) (i) For a bundled transaction that is attributable to food and food ingredients and tangible personal property other than food and food ingredients, a state tax and a local tax is imposed on the entire bundled transaction equal to the sum of:

(A) a state tax imposed on the entire bundled transaction equal to the sum of:

(I) the tax rate described in Subsection (2)(a)(i)(A); and

(II) (Aa) the tax rate the state imposes in accordance with Part 18, Additional State Sales and Use Tax Act, if the location of the transaction as determined under Sections 59-12-211 through 59-12-215 is in a county in which the state imposes the tax under Part 18, Additional State Sales and Use Tax Act; and

(Bb) the tax rate the state imposes in accordance with Part 20, Supplemental State Sales and Use Tax Act, if the location of the transaction as determined under Sections 59-12-211 through 59-12-215 is in a city, town, or the unincorporated area of a county in which the state imposes the tax under Part 20, Supplemental State Sales and Use Tax Act; and

(B) a local tax imposed on the entire bundled transaction at the sum of the tax rates described in Subsection (2)(a)(ii).

(ii) If an optional computer software maintenance contract is a bundled transaction that consists of taxable and nontaxable products that are not separately itemized on an invoice or similar billing document, the purchase of the optional computer software maintenance contract is 40% taxable under this chapter and 60% nontaxable under this chapter.

(iii) Subject to Subsection (2)(e)(iv), for a bundled transaction other than a bundled transaction described in Subsection (2)(e)(i) or (ii):

(A) if the sales price of the bundled transaction is attributable to tangible personal property, a product, or a service that is subject to taxation under this chapter and tangible personal property, a product, or service that is not subject to taxation under this chapter, the entire bundled transaction is subject to taxation under this chapter unless:

(I) the seller is able to identify by reasonable and verifiable standards the tangible personal property, product, or service that is not subject to taxation under this chapter from the books and records the seller keeps in the seller's regular course of business; or

(II) state or federal law provides otherwise; or

(B) if the sales price of a bundled transaction is attributable to two or more items of tangible personal property, products, or services that are subject to taxation under this chapter at different rates, the entire bundled transaction is subject to taxation under this chapter at the higher tax rate unless:

(I) the seller is able to identify by reasonable and verifiable standards the tangible personal property, product, or service that is subject to taxation under this chapter at the lower tax rate from the books and records the seller keeps in the seller's regular course of business; or

(II) state or federal law provides otherwise.

(iv) For purposes of Subsection (2)(e)(iii), books and records that a seller keeps in the seller's regular course of business includes books and records the seller keeps in the regular course of business for nontax purposes.

(f) (i) Except as otherwise provided in this chapter and subject to Subsections (2)(f)(ii) and (iii), if a transaction consists of the sale, lease, or rental of tangible personal property, a product, or a service that is subject to taxation under this chapter, and the sale, lease, or rental of tangible personal property, other property, a product, or a service that is not subject to taxation under this chapter, the entire transaction is subject to taxation under this chapter unless the seller, at the time of the transaction:

(A) separately states the portion of the transaction that is not subject to taxation under this chapter on an invoice, bill of sale, or similar document provided to the purchaser; or

(B) is able to identify by reasonable and verifiable standards, from the books and records the seller keeps in the seller's regular course of business, the portion of the transaction that is not subject to taxation under this chapter.

(ii) A purchaser and a seller may correct the taxability of a transaction if:

(A) after the transaction occurs, the purchaser and the seller discover that the portion of the transaction that is not subject to taxation under this chapter was not separately stated on an invoice, bill of sale, or similar document provided to the purchaser because of an error or ignorance of the law; and

(B) the seller is able to identify by reasonable and verifiable standards, from the books and records the seller keeps in the seller's regular course of business, the portion of the transaction that is not subject to taxation under this chapter.

(iii) For purposes of Subsections (2)(f)(i) and (ii), books and records that a seller keeps in the seller's regular course of business includes books and records the seller keeps in the regular course of business for nontax purposes.

(g) (i) If the sales price of a transaction is attributable to two or more items of tangible personal property, products, or services that are subject to taxation under this chapter at different rates, the entire purchase is subject to taxation under this chapter at the higher tax rate unless the seller, at the time of the transaction:

(A) separately states the items subject to taxation under this chapter at each of the different rates on an invoice, bill of sale, or similar document provided to the purchaser; or

(B) is able to identify by reasonable and verifiable standards the tangible personal property, product, or service that is subject to taxation under this chapter at the lower tax rate from the books and records the seller keeps in the seller's regular course of business.

(ii) For purposes of Subsection (2)(g)(i), books and records that a seller keeps in the seller's regular course of business includes books and records the seller keeps in the regular course of business for nontax purposes.

(h) Subject to Subsections (2)(i) and (j), a tax rate repeal or tax rate change for a tax rate imposed under the following shall take effect on the first day of a calendar quarter:

(i) Subsection (2)(a)(i)(A);

(ii) Subsection (2)(b)(i);

(iii) Subsection (2)(c)(i); or

(iv) Subsection (2)(e)(i)(A)(I).

(i) (i) A tax rate increase takes effect on the first day of the first billing period that begins on or after the effective date of the tax rate increase if the billing period for the transaction begins before the effective date of a tax rate increase imposed under:

(A) Subsection (2)(a)(i)(A);

(B) Subsection (2)(b)(i);

(C) Subsection (2)(c)(i); or

(D) Subsection (2)(e)(i)(A)(I).

(ii) The repeal of a tax or a tax rate decrease applies to a billing period if the billing statement for the billing period is rendered on or after the effective date of the repeal of the tax or the tax rate decrease imposed under:

(A) Subsection (2)(a)(i)(A);

(B) Subsection (2)(b)(i);

(C) Subsection (2)(c)(i); or

(D) Subsection (2)(e)(i)(A)(I).

(j) (i) For a tax rate described in Subsection (2)(j)(ii), if a tax due on a catalogue sale is computed on the basis of sales and use tax rates published in the catalogue, a tax rate repeal or change in a tax rate takes effect:

(A) on the first day of a calendar quarter; and

(B) beginning 60 days after the effective date of the tax rate repeal or tax rate change.

(ii) Subsection (2)(j)(i) applies to the tax rates described in the following:

(A) Subsection (2)(a)(i)(A);

(B) Subsection (2)(b)(i);

(C) Subsection (2)(c)(i); or

(D) Subsection (2)(e)(i)(A)(I).

(iii) In accordance with Title 63G, Chapter 3, Utah Administrative Rulemaking Act, the commission may by rule define the term "catalogue sale."

(k) (i) For a location described in Subsection (2)(k)(ii), the commission shall determine the taxable status of a sale of gas, electricity, heat, coal, fuel oil, or other fuel based on the predominant use of the gas, electricity, heat, coal, fuel oil, or other fuel at the location.

(ii) Subsection (2)(k)(i) applies to a location where gas, electricity, heat, coal, fuel oil, or other fuel is furnished through a single meter for two or more of the following uses:

(A) a commercial use;

(B) an industrial use; or

(C) a residential use.

(3) (a) The following state taxes shall be deposited into the General Fund:

(i) the tax imposed by Subsection (2)(a)(i)(A);

(ii) the tax imposed by Subsection (2)(b)(i);

(iii) the tax imposed by Subsection (2)(c)(i); and

(iv) the tax imposed by Subsection (2)(e)(i)(A)(I).

(b) The following local taxes shall be distributed to a county, city, or town as provided in this chapter:

(i) the tax imposed by Subsection (2)(a)(ii);

(ii) the tax imposed by Subsection (2)(b)(ii);

(iii) the tax imposed by Subsection (2)(c)(ii); and

(iv) the tax imposed by Subsection (2)(e)(i)(B).

(c) The state tax imposed by Subsection (2)(d) shall be deposited into the General Fund.

(4) (a) Notwithstanding Subsection (3)(a), for a fiscal year beginning on or after July 1, 2003, the lesser of the following amounts shall be expended as provided in Subsections (4)(b) through (g):

(i) for taxes listed under Subsection (3)(a), the amount of tax revenue generated:

(A) by a 1/16% tax rate on the transactions described in Subsection (1); and

(B) for the fiscal year; or

(ii) $17,500,000.

(b) (i) For a fiscal year beginning on or after July 1, 2003, 14% of the amount described in Subsection (4)(a) shall be transferred each year as designated sales and use tax revenue to the Department of Natural Resources to:

(A) implement the measures described in Subsections 79-2-303(3)(a) through (d) to protect sensitive plant and animal species; or

(B) award grants, up to the amount authorized by the Legislature in an appropriations act, to political subdivisions of the state to implement the measures described in Subsections 79-2-303(3)(a) through (d) to protect sensitive plant and animal species.

(ii) Money transferred to the Department of Natural Resources under Subsection (4)(b)(i) may not be used to assist the United States Fish and Wildlife Service or any other person to list or attempt to have listed a species as threatened or endangered under the

Endangered Species Act of 1973, 16 U.S.C. Sec. 1531 et seq.

(iii) At the end of each fiscal year:

(A) 50% of any unexpended designated sales and use tax revenue shall lapse to the Water Resources Conservation and Development Fund created in Section 73-10-24;

(B) 25% of any unexpended designated sales and use tax revenue shall lapse to the Utah Wastewater Loan Program Subaccount created in Section 73-10c-5; and

(C) 25% of any unexpended designated sales and use tax revenue shall lapse to the Drinking Water Loan Program Subaccount created in Section 73-10c-5.

(c) For a fiscal year beginning on or after July 1, 2003, 3% of the amount described in Subsection (4)(a) shall be deposited each year in the Agriculture Resource Development Fund created in Section 4-18-106.

(d) (i) For a fiscal year beginning on or after July 1, 2003, 1% of the amount described in Subsection (4)(a) shall be transferred each year as designated sales and use tax revenue to the Division of Water Rights to cover the costs incurred in hiring legal and technical staff for the adjudication of water rights.

(ii) At the end of each fiscal year:

(A) 50% of any unexpended designated sales and use tax revenue shall lapse to the Water Resources Conservation and Development Fund created in Section 73-10-24;

(B) 25% of any unexpended designated sales and use tax revenue shall lapse to the Utah Wastewater Loan Program Subaccount created in Section 73-10c-5; and

(C) 25% of any unexpended designated sales and use tax revenue shall lapse to the Drinking Water Loan Program Subaccount created in Section 73-10c-5.

(e) (i) For a fiscal year beginning on or after July 1, 2003, 41% of the amount described in Subsection (4)(a) shall be deposited into the Water Resources Conservation and Development Fund created in Section 73-10-24 for use by the Division of Water Resources.

(ii) In addition to the uses allowed of the Water Resources Conservation and Development Fund under Section 73-10-24, the Water Resources Conservation and Development Fund may also be used to:

(A) conduct hydrologic and geotechnical investigations by the Division of Water Resources in a cooperative effort with other state, federal, or local entities, for the purpose of quantifying surface and ground water resources and describing the hydrologic systems of an

area in sufficient detail so as to enable local and state resource managers to plan for and accommodate growth in water use without jeopardizing the resource;

(B) fund state required dam safety improvements; and

(C) protect the state's interest in interstate water compact allocations, including the hiring of technical and legal staff.

(f) For a fiscal year beginning on or after July 1, 2003, 20.5% of the amount described in Subsection (4)(a) shall be deposited into the Utah Wastewater Loan Program Subaccount created in Section 73-10c-5 for use by the Water Quality Board to fund wastewater projects.

(g) For a fiscal year beginning on or after July 1, 2003, 20.5% of the amount described in Subsection (4)(a) shall be deposited into the Drinking Water Loan Program Subaccount created in Section 73-10c-5 for use by the Division of Drinking Water to:

(i) provide for the installation and repair of collection, treatment, storage, and distribution facilities for any public water system, as defined in Section 19-4-102;

(ii) develop underground sources of water, including springs and wells; and

(iii) develop surface water sources.

(5) (a) Notwithstanding Subsection (3)(a), for a fiscal year beginning on or after July 1, 2006, the difference between the following amounts shall be expended as provided in this Subsection (5), if that difference is greater than $1:

(i) for taxes listed under Subsection (3)(a), the amount of tax revenue generated for the fiscal year by a 1/16% tax rate on the transactions described in Subsection (1); and

(ii) $17,500,000.

(b) (i) The first $500,000 of the difference described in Subsection (5)(a) shall be:

(A) transferred each fiscal year to the Department of Natural Resources as designated sales and use tax revenue; and

(B) expended by the Department of Natural Resources for watershed rehabilitation or restoration.

(ii) At the end of each fiscal year, 100% of any unexpended designated sales and use tax revenue described in Subsection (5)(b)(i) shall lapse to the Water Resources Conservation and Development Fund created in Section 73-10-24.

(c) (i) After making the transfer required by Subsection (5)(b)(i), $150,000 of the remaining difference described in Subsection (5)(a) shall be:

(A) transferred each fiscal year to the Division of Water Resources as designated sales and use tax revenue; and

(B) expended by the Division of Water Resources for cloud-seeding projects authorized by Title 73, Chapter 15, Modification of Weather.

(ii) At the end of each fiscal year, 100% of any unexpended designated sales and use tax revenue described in Subsection (5)(c)(i) shall lapse to the Water Resources Conservation and Development Fund created in Section 73-10-24.

(d) After making the transfers required by Subsections (5)(b) and (c), 85% of the remaining difference described in Subsection (5)(a) shall be deposited into the Water Resources Conservation and Development Fund created in Section 73-10-24 for use by the Division of Water Resources for:

(i) preconstruction costs:

(A) as defined in Subsection 73-26-103(6) for projects authorized by Title 73, Chapter 26, Bear River Development Act; and

(B) as defined in Subsection 73-28-103(8) for the Lake Powell Pipeline project authorized by Title 73, Chapter 28, Lake Powell Pipeline Development Act;

(ii) the cost of employing a civil engineer to oversee any project authorized by Title 73, Chapter 26, Bear River Development Act;

(iii) the cost of employing a civil engineer to oversee the Lake Powell Pipeline project authorized by Title 73, Chapter 28, Lake Powell Pipeline Development Act; and

(iv) other uses authorized under Sections 73-10-24, 73-10-25.1, and 73-10-30, and Subsection (4)(e)(ii) after funding the uses specified in Subsections (5)(d)(i) through (iii).

(e) After making the transfers required by Subsections (5)(b) and (c), 15% of the remaining difference described in Subsection (5)(a) shall be deposited each year into the Water Rights Restricted Account created by Section 73-2-1.6.

(6) Notwithstanding Subsection (3)(a) and for taxes listed under Subsection (3)(a), the commission shall deposit 100% of the amount of revenue generated by a 1/16% tax rate on the transactions described in Subsection (1) for the fiscal year [~~shall be deposited as follows~~]:

[~~(a) for fiscal year 2020-21 only:~~]

[~~(i) 20% of the revenue described in this Subsection (6) shall be deposited into the Transportation Investment Fund of 2005 created by Section 72-2-124; and~~]

[~~(ii) 80% of the revenue described in this Subsection (6) shall be deposited into the Water Infrastructure Restricted Account created by Section 73-10g-103; and~~]

[~~(b)~~] (a) for a fiscal year beginning on or after July 1, 2023, but beginning before July 1, 2028, into the Great Salt Lake Account created by Section 65A-5-1.5; and

(b) for a fiscal year beginning on or after July 1, [~~2021, 100% of the revenue described in this Subsection (6) shall be deposited~~] 2028, into the Water Infrastructure Restricted Account created by Section 73-10g-103.

(7) (a) Notwithstanding Subsection (3)(a)[~~, in addition to the amounts deposited in Subsection (6),~~] and subject to Subsection (7)(b), for a fiscal year beginning on or after July 1, 2012, the Division of Finance shall deposit into the Transportation Investment Fund of 2005 created by Section 72-2-124:

(i) a portion of the taxes listed under Subsection (3)(a) in an amount equal to 8.3% of the revenues collected from the following taxes, which represents a portion of the approximately 17% of sales and use tax revenues generated annually by the sales and use tax on vehicles and vehicle-related products:

(A) the tax imposed by Subsection (2)(a)(i)(A) at a 4.7% rate;

(B) the tax imposed by Subsection (2)(b)(i);

(C) the tax imposed by Subsection (2)(c)(i); and

(D) the tax imposed by Subsection (2)(e)(i)(A)(I); plus

(ii) an amount equal to 30% of the growth in the amount of revenues collected in the current fiscal year from the sales and use taxes described in Subsections (7)(a)(i)(A) through (D) that exceeds the amount collected from the sales and use taxes described in Subsections (7)(a)(i)(A) through (D) in the 2010-11 fiscal year.

(b) (i) Subject to Subsections (7)(b)(ii) and (iii), in any fiscal year that the portion of the sales and use taxes deposited under Subsection (7)(a) represents an amount that is a total lower percentage of the sales and use taxes described in Subsections (7)(a)(i)(A) through (D) generated in the current fiscal year than the total percentage of sales and use taxes deposited in the previous fiscal year, the Division of Finance shall deposit an amount under Subsection (7)(a) equal to the product of:

(A) the total percentage of sales and use taxes deposited under Subsection (7)(a) in the previous fiscal year; and

(B) the total sales and use tax revenue generated by the taxes described in Subsections (7)(a)(i)(A) through (D) in the current fiscal year.

(ii) In any fiscal year in which the portion of the sales and use taxes deposited under Subsection (7)(a) would exceed 17% of the revenues collected from the sales and use taxes described in Subsections (7)(a)(i)(A) through (D) in the current fiscal year, the Division of Finance shall deposit 17% of the revenues collected from the sales and use taxes described in Subsections (7)(a)(i)(A) through (D) for the current fiscal year under Subsection (7)(a).

(iii) Subject to Subsection (7)(b)(iv)(E), in all subsequent fiscal years after a year in which 17% of the revenues collected from the sales and use taxes described in Subsections (7)(a)(i)(A) through (D) was deposited under Subsection (7)(a), the Division of Finance shall annually deposit 17% of the revenues collected from the sales and use taxes described in Subsections (7)(a)(i)(A) through (D) in the current fiscal year under Subsection (7)(a).

(iv) (A) As used in this Subsection (7)(b)(iv), "additional growth revenue" means the amount of relevant revenue collected in the current fiscal year that exceeds by more than 3% the relevant revenue collected in the previous fiscal year.

(B) As used in this Subsection (7)(b)(iv), "combined amount" means the combined total amount of money deposited into the Cottonwood Canyons fund under Subsections (7)(b)(iv)(F) and (8)(d)(vi) in any single fiscal year.

(C) As used in this Subsection (7)(b)(iv), "Cottonwood Canyons fund" means the Cottonwood Canyons Transportation Investment Fund created in Subsection 72-2-124(10).

(D) As used in this Subsection (7)(b)(iv), "relevant revenue" means the portion of taxes listed under Subsection (3)(a) that equals 17% of the revenue collected from taxes described in Subsections (7)(a)(i)(A) through (D).

(E) For a fiscal year beginning on or after July 1, 2020, the commission shall annually reduce the deposit under Subsection (7)(b)(iii) into the Transportation Investment Fund of 2005 by an amount equal to the amount of the deposit under this Subsection (7)(b)(iv) to the Cottonwood Canyons fund in the previous fiscal year plus 25% of additional growth revenue, subject to the limit in Subsection (7)(b)(iv)(F).

(F) The commission shall annually deposit the amount described in Subsection (7)(b)(iv)(E) into the Cottonwood Canyons fund, subject to an annual maximum combined amount for any single fiscal year of $20,000,000.

(G) If the amount of relevant revenue declines in a fiscal year compared to the previous fiscal year, the commission shall decrease the amount of the contribution to the Cottonwood Canyons fund under this Subsection (7)(b)(iv) in the same proportion as the decline in relevant revenue.

(8) (a) Notwithstanding Subsection (3)(a), in addition to the amounts deposited under [~~Subsections (6) and~~] Subsection (7), and subject to Subsections (8)(b) and (d)(v), for a fiscal year beginning on or after July 1, 2018, the commission shall annually deposit into the Transportation Investment Fund of 2005 created by Section 72-2-124 a portion of the taxes listed under Subsection (3)(a) in an amount equal to 3.68% of the revenues collected from the following taxes:

(i) the tax imposed by Subsection (2)(a)(i)(A) at a 4.7% rate;

(ii) the tax imposed by Subsection (2)(b)(i);

(iii) the tax imposed by Subsection (2)(c)(i); and

(iv) the tax imposed by Subsection (2)(e)(i)(A)(I).

(b) For a fiscal year beginning on or after July 1, 2019, the commission shall annually reduce the deposit into the Transportation Investment Fund of 2005 under Subsection (8)(a) by an amount that is equal to 35% of the amount of revenue generated in the current fiscal year by the portion of the tax imposed on motor and special fuel that is sold, used, or received for sale or use in this state that exceeds 29.4 cents per gallon.

(c) The commission shall annually deposit the amount described in Subsection (8)(b) into the Transit Transportation Investment Fund created in Section 72-2-124.

(d) (i) As used in this Subsection (8)(d), "additional growth revenue" means the amount of relevant revenue collected in the current fiscal year that exceeds by more than 3% the relevant revenue collected in the previous fiscal year.

(ii) As used in this Subsection (8)(d), "combined amount" means the combined total amount of money deposited into the Cottonwood Canyons fund under Subsections (7)(b)(iv)(F) and (8)(d)(vi) in any single fiscal year.

(iii) As used in this Subsection (8)(d), "Cottonwood Canyons fund" means the Cottonwood Canyons Transportation Investment Fund created in Subsection 72-2-124(10).

(iv) As used in this Subsection (8)(d), "relevant revenue" means the portion of taxes listed under Subsection (3)(a) that equals 3.68% of the revenue collected from taxes described

in Subsections (8)(a)(i) through (iv).

(v) For a fiscal year beginning on or after July 1, 2020, the commission shall annually reduce the deposit under Subsection (8)(a) into the Transportation Investment Fund of 2005 by an amount equal to the amount of the deposit under this Subsection (8)(d) to the Cottonwood Canyons fund in the previous fiscal year plus 25% of additional growth revenue, subject to the limit in Subsection (8)(d)(vi).

(vi) The commission shall annually deposit the amount described in Subsection (8)(d)(v) into the Cottonwood Canyons fund, subject to an annual maximum combined amount for any single fiscal year of $20,000,000.

(vii) If the amount of relevant revenue declines in a fiscal year compared to the previous fiscal year, the commission shall decrease the amount of the contribution to the Cottonwood Canyons fund under this Subsection (8)(d) in the same proportion as the decline in relevant revenue.

(9) Notwithstanding Subsection (3)(a), for each fiscal year beginning with fiscal year 2009-10, $533,750 shall be deposited into the Qualified Emergency Food Agencies Fund created by Section 35A-8-1009 and expended as provided in Section 35A-8-1009.

(10) (a) Notwithstanding Subsection (3)(a), except as provided in Subsection (10)(b), and in addition to any amounts deposited under Subsections [~~(6),~~] (7)[;] and (8), the Division of Finance shall deposit into the Transportation Investment Fund of 2005 created by Section 72-2-124 the amount of revenue described as follows:

(i) for fiscal year 2020-21 only, 33.33% of the amount of revenue generated by a .05% tax rate on the transactions described in Subsection (1); and

(ii) for fiscal year 2021-22 only, 16.67% of the amount of revenue generated by a .05% tax rate on the transactions described in Subsection (1).

(b) For purposes of Subsection (10)(a), the Division of Finance may not deposit into the Transportation Investment Fund of 2005 any tax revenue generated by amounts paid or charged for food and food ingredients, except for tax revenue generated by a bundled transaction attributable to food and food ingredients and tangible personal property other than food and food ingredients described in Subsection (2)(e).

(11) Notwithstanding Subsection (3)(a), beginning the second fiscal year after the fiscal year during which the Division of Finance receives notice under Section 63N-2-510 that

construction on a qualified hotel, as defined in Section 63N-2-502, has begun, the Division of Finance shall, for two consecutive fiscal years, annually deposit $1,900,000 of the revenue generated by the taxes listed under Subsection (3)(a) into the Hotel Impact Mitigation Fund, created in Section 63N-2-512.

(12) (a) The rate specified in this subsection is 0.15%.

(b) Notwithstanding Subsection (3)(a), the Division of Finance shall, for a fiscal year beginning on or after July 1, 2019, annually transfer the amount of revenue collected from the rate described in Subsection (12)(a) on the transactions that are subject to the sales and use tax under Subsection (2)(a)(i)(A) into the Medicaid Expansion Fund created in Section 26-36b-208.

(13) Notwithstanding Subsection (3)(a), for each fiscal year beginning with fiscal year 2020-21, the Division of Finance shall deposit $200,000 into the General Fund as a dedicated credit solely for use of the Search and Rescue Financial Assistance Program created in, and expended in accordance with, Title 53, Chapter 2a, Part 11, Search and Rescue Act.

(14) (a) For each fiscal year beginning with fiscal year 2020-21, the Division of Finance shall annually transfer $1,813,400 of the revenue deposited into the Transportation Investment Fund of 2005 under Subsections [~~(6) through (8)~~] (7) and (8) to the General Fund.

(b) If the total revenue deposited into the Transportation Investment Fund of 2005 under Subsections [~~(6) through~~] (7) and (8) is less than $1,813,400 for a fiscal year, the Division of Finance shall transfer the total revenue deposited into the Transportation Investment Fund of 2005 under Subsections [~~(6) through~~] (7) and (8) during the fiscal year to the General Fund.

(15) Notwithstanding Subsection (3)(a), and as described in Section 63N-3-610, beginning the first day of the calendar quarter one year after the sales and use tax boundary for a housing and transit reinvestment zone is established, the commission, at least annually, shall transfer an amount equal to 15% of the sales and use tax increment within an established sales and use tax boundary, as defined in Section 63N-3-602, into the Transit Transportation Investment Fund created in Section 72-2-124.

(16) Notwithstanding Subsection (3)(a), the Division of Finance shall, for a fiscal year beginning on or after July 1, 2022, transfer into the Outdoor Adventure Infrastructure Restricted Account, created in Section 51-9-902, a portion of the taxes listed under Subsection

(3)(a) equal to 1% of the revenues collected from the following sales and use taxes:

(a) the tax imposed by Subsection (2)(a)(i)(A) at a 4.7% rate;

(b) the tax imposed by Subsection (2)(b)(i);

(c) the tax imposed by Subsection (2)(c)(i); and

(d) the tax imposed by Subsection (2)(e)(i)(A)(I).

Section 2. Section **63I-1-259** is amended to read:

63I-1-259. Repeal dates: Title 59.

(1) Section 59-1-213.1 is repealed May 9, 2024.

(2) Section 59-1-213.2 is repealed May 9, 2024.

(3) Subsection 59-1-405(1)(g) is repealed May 9, 2024.

(4) Subsection 59-1-405(2)(b) is repealed May 9, 2024.

(5) Section 59-7-618.1 is repealed July 1, 2029.

(6) Section 59-9-102.5 is repealed December 31, 2030.

(7) Section 59-10-1033.1 is repealed July 1, 2029.

(8) Subsection 59-12-103(6)(a) is repealed July 1, 2028.

Section 3. Section **63I-1-265** is amended to read:

63I-1-265. Repeal dates: Title 65A.

(1) Subsection 65A-5-1.5(2)(a)(ii), which references revenue deposited in accordance with Section 59-12-103, is repealed July 1, 2028.

(2) Section 65A-8-306, which creates the Heritage Trees Advisory Committee, is repealed July 1, 2026.

Section 4. Section **65A-5-1.5** is amended to read:

65A-5-1.5. Great Salt Lake Account.

(1) As used in this section:

(a) "Account" means the Great Salt Lake Account created in this section.

(b) "Mining" means the process of producing, extracting, leaching, evaporating, or otherwise removing a mineral from a natural deposit of the mineral.

(2) (a) There is created within the General Fund a restricted account known as the "Great Salt Lake Account" consisting of:

(i) revenues deposited into the account under Subsection (3);

(ii) revenue deposited into the account in accordance with Section 59-12-103;

[~~(ii)~~] (iii) appropriations from the Legislature; and

[~~(iii)~~] (iv) interest and other earnings described in Subsection (2)(b).

(b) The Office of the Treasurer shall deposit interest and other earnings derived from investment of money in the account into the account.

(3) The division shall deposit into the account the royalty income received by the state from mining that occurs on or after July 1, 2022, of a mineral from the sovereign lands of the Great Salt Lake if during the fiscal year beginning July 1, 2020, the state did not receive royalty income from the mining of that same mineral from the sovereign lands of the Great Salt Lake.

(4) Upon appropriation by the Legislature, money in the account may be used to manage the water levels of the Great Salt Lake.

Section 5. **Effective date.**

This bill takes effect on July 1, 2023.

LEGISLATIVE GENERAL COUNSEL
₵ Approved for Filing: P. Owen ₵
₵ 01-17-19 11:53 AM ₵

WATER CONSERVATION PLAN AMENDMENTS

2019 GENERAL SESSION

STATE OF UTAH

Chief Sponsor: Suzanne Harrison

Senate Sponsor: _____

LONG TITLE

General Description:

This bill addresses water conservation plans.

Highlighted Provisions:

This bill:

- modifies what is required to be included in a water conservation plan; and
- makes technical changes.

Money Appropriated in this Bill:

None

Other Special Clauses:

None

Utah Code Sections Affected:

AMENDS:

73-10-32, as last amended by Laws of Utah 2007, Chapter 329

Be it enacted by the Legislature of the state of Utah:

Section 1. Section **73-10-32** is amended to read:

73-10-32. Definitions -- Water conservation plan required.

(1) As used in this section:

(a) "Board" means the Board of Water Resources created under Section 73-10-1.5.

(b) "Division" means the Division of Water Resources created under Section 73-10-18.

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(c) "Retail" means the level of distribution of culinary water that supplies culinary water directly to the end user.

(d) "Retail water provider" means an entity [~~which~~] that:

(i) supplies culinary water to end users; and

(ii) has more than 500 service connections.

(e) "Water conservancy district" means an entity formed under Title 17B, Chapter 2a, Part 10, Water Conservancy District Act.

(f) "Water conservation plan" means a written document that contains existing and proposed water conservation measures describing what will be done by retail water providers, water conservancy districts, and the end user of culinary water to help conserve water and limit or reduce [~~its~~] water use in the state in terms of per capita consumption so that adequate supplies of water are available for future needs.

(2) (a) [~~Each~~] A water conservation plan shall contain:

(i) a clearly stated overall water use reduction goal and an implementation plan for each of the water conservation measures [~~it~~] the water conservation plan chooses to use, including a timeline for action and an evaluation process to measure progress;

(ii) by no later than the date the retail water provider or water conservation district updates the water conservation plan after May 14, 2019, an evaluation of:

(A) what specific measures the retail water provider or water conservancy district would have to enact to reduce per capita water use to 175 gallons per capita day or less and how much it would cost to do so; and

(B) how much it would cost the retail water provider or water conservancy district to not reduce water use to 175 gallons per capita day through consideration of the retail water provider's or water conservancy district's operation and maintenance costs, treatment costs, delivery costs, new water source acquisition costs, and any other substantial expense;

[~~(ii)~~] (iii) a requirement that each water conservancy district and retail water provider devote part of at least one regular meeting every five years of [~~its~~] the water conservancy district's or retail water provider's governing body to a discussion and formal adoption of the water conservation plan, and allow public comment on [~~it~~] the water conservation plan;

[~~(iii)~~] (iv) a requirement that a notification procedure be implemented that includes the delivery of the water conservation plan to the media and to the governing body of each

municipality and county served by the water conservancy district or retail water provider; and

[~~(iv)~~] (v) a copy of the minutes of the meeting and the notification procedure required in Subsections (2)(a)[~~(ii)~~](iii) and [~~(iii)~~] (iv), which shall be added as an appendix to the plan.

(b) A water conservation plan may include information regarding:

(i) the installation and use of water efficient fixtures and appliances, including toilets, shower fixtures, and faucets;

(ii) residential and commercial landscapes and irrigation that require less water to maintain;

(iii) more water efficient industrial and commercial processes involving the use of water;

(iv) water reuse systems, both potable and not potable;

(v) distribution system leak repair;

(vi) dissemination of public information regarding more efficient use of water, including public education programs, customer water use audits, and water saving demonstrations;

(vii) water rate structures designed to encourage more efficient use of water;

(viii) statutes, ordinances, codes, or regulations designed to encourage more efficient use of water by means such as water efficient fixtures and landscapes;

(ix) incentives to implement water efficient techniques, including rebates to water users to encourage the implementation of more water efficient measures; and

(x) other measures designed to conserve water.

(c) The [~~Division of Water Resources~~] division may be contacted for information and technical resources regarding measures listed in Subsections (2)(b)(i) through (2)(b)(x).

(3) (a) [~~Before April 1, 1999, each~~] A water conservancy district and each retail water provider shall:

(i) (A) prepare and adopt a water conservation plan if one has not already been adopted; or

(B) if the district or provider has already adopted a water conservation plan, review the existing water conservation plan to determine if [~~it~~] the water conservation plan should be amended and, if so, amend the water conservation plan; and

(ii) file a copy of the water conservation plan or amended water conservation plan with

the division.

(b) Before adopting or amending a water conservation plan, [~~each~~] a water conservancy district or retail water provider shall hold a public hearing with reasonable, advance public notice.

(4) (a) The board shall:

(i) provide guidelines and technical resources to retail water providers and water conservancy districts to prepare and implement water conservation plans; and

(ii) investigate alternative measures designed to conserve water[~~; and~~].

[~~(iii) report regarding its compliance with the act and impressions of the overall quality of the plans submitted to the Natural Resources, Agriculture, and Environment Interim Committee of the Legislature at its meeting in November 2004.~~]

(b) The board shall publish an annual report in a paper of state-wide distribution specifying the retail water providers and water conservancy districts that do not have a current water conservation plan on file with the board at the end of the calendar year.

(5) A water conservancy district or retail water provider may only receive state funds for water development if they comply with the requirements of this [~~act~~] chapter.

(6) [~~Each~~] A water conservancy district and retail water provider specified under Subsection (3)(a) shall:

(a) update [~~its~~] the water conservancy district's or retail water provider's water conservation plan no less frequently than every five years; and

(b) follow the procedures required under Subsection (3) when updating the water conservation plan.

(7) It is the intent of the Legislature that the water conservation plans, amendments to existing water conservation plans, and the studies and report by the board be handled within the existing budgets of the respective entities or agencies.

LEGISLATIVE GENERAL COUNSEL
₵ Approved for Filing: P. Owen ₵
₵ 12-20-19 4:13 PM ₵

H.B. 40

WATER LOSS ACCOUNTING ACT

2020 GENERAL SESSION

STATE OF UTAH

Chief Sponsor: Melissa G. Ballard

Senate Sponsor: David P. Hinkins

LONG TITLE

Committee Note:

The Legislative Water Development Commission recommended this bill.

Membership: 13 legislators 11 non-legislators

Legislative Vote: 6 voting for 2 voting against 5 absent

General Description:

This bill addresses data related to water including water losses.

Highlighted Provisions:

This bill:

- addresses sunset provisions;
- enacts the Water Loss Accounting Act, including:
  - defining terms;
  - granting rulemaking authority;
  - providing for a technical advisory committee;
  - requiring water loss accounting reports; and
  - providing for technical assistance; and
- makes technical amendments.

Money Appropriated in this Bill:

This bill appropriates in fiscal year 2021:

- to Department of Natural Resources - Division of Water Resources, as a one-time appropriation:

- from General Fund, $1,350,000
- to DNR Pass-through, as a one-time appropriation:
  - from General Fund, $150,000
- to Department of Natural Resources - Division of Water Resources:
  - from General Fund, as an ongoing appropriation $300,000
  - from General Fund, one-time ($300,000)

Other Special Clauses:

None

Utah Code Sections Affected:

AMENDS:

63I-1-273, as last amended by Laws of Utah 2019, Chapters 96 and 246

ENACTS:

73-10h-101, Utah Code Annotated 1953

73-10h-102, Utah Code Annotated 1953

73-10h-103, Utah Code Annotated 1953

73-10h-104, Utah Code Annotated 1953

73-10h-201, Utah Code Annotated 1953

73-10h-202, Utah Code Annotated 1953

Be it enacted by the Legislature of the state of Utah:

Section 1. Section **63I-1-273** is amended to read:

63I-1-273. Repeal dates, Title 73.

In relation to the Legislative Water Development Commission, on January 1, 2021:

(1) in Subsection 73-10g-105(3), the language that states "and in consultation with the State Water Development Commission created in Section 73-27-102" is repealed;

(2) Subsection 73-10g-203(4)(a) is repealed; [~~and~~]

(3) Subsection 73-10h-201(2)(b)(ii) is repealed;

(4) in Subsection 73-10h-201(2)(c) the language that states "and the Legislative Water Development Commission" is repealed; and

[~~(3)~~] (5) Title 73, Chapter 27, State Water Development Commission, is repealed.

Section 2. Section **73-10h-101** is enacted to read:

CHAPTER 10h. WATER LOSS ACCOUNTING ACT

Part 1. General Provisions

73-10h-101. Title.

This chapter is known as the "Water Loss Accounting Act."

Section 3. Section **73-10h-102** is enacted to read:

73-10h-102. Definitions.

As used in this section:

(1) "Covered entity" means the owner or operator of a public water system that serves a population of more than 3,300 individuals.

(2) "Division" means the Division of Water Resources.

(3) "Public water system" means the same as that term is defined in Section 19-4-102.

(4) (a) "Water loss" means the difference between the annual volume of water entering a water distribution system and the annual volume of metered water, unmetered water, or both taken by registered customers, the covered entity, and others who are implicitly or explicitly authorized to take water.

(b) "Water loss" includes:

(i) the annual volumes lost through leaks, breaks, and overflows on mains, service reservoirs, and service connections, up to the point of customer metering;

(ii) unauthorized consumption;

(iii) metering inaccuracies; and

(iv) systemic data handling errors.

Section 4. Section **73-10h-103** is enacted to read:

73-10h-103. Rulemaking.

The division shall make the following rules in accordance with Title 63G, Chapter 3, Utah Administrative Rulemaking Act, and after consultation with the technical advisory committee:

(1) the selection of the method of conducting a water loss audit under Subsection 73-10h-201(1)(a)(i);

(2) the standards and processes for validating a water loss audit; and

(3) the establishment of the standards and processes for submitting a water loss accounting report under Subsection 73-10h-201(1).

Section 5. Section **73-10h-104** is enacted to read:

73-10h-104. Technical advisory committee.

(1) The division shall establish a technical advisory committee that may include representatives of nonprofit civic entities, professional organizations, covered entities, and other state agencies.

(2) The technical advisory committee may assist or advise the division with implementing this chapter.

Section 6. Section **73-10h-201** is enacted to read:

Part 2. Water Loss Accounting Reporting

73-10h-201. Water loss accounting reports.

(1) By no later than a date specified in rule in calendar year 2022, and on or before the date specified in rule of each subsequent year, a covered entity shall:

(a) prepare a water loss accounting report that contains the following:

(i) a standardized water loss audit conducted in accordance with a method selected by the division by rule that meets industry standards; and

(ii) a brief written summary of:

(A) actions taken during the reporting year to reduce the volume of water losses in the system and to improve the data validity; and

(B) the actions that are planned for the subsequent reporting year;

(b) have the water loss audit validated in accordance with rule; and

(c) submit the water loss accounting report in accordance with rule.

(2) (a) By no later than October 31, 2022, and by October 31 of each subsequent year, the division shall:

(i) prepare an annual summary of the validated water loss accounting reports; and

(ii) publish the annual summary prepared under this Subsection (2) on the division's website.

(b) During the 2022 interim of the Legislature, the division shall report the annual summary and report on compliance with this chapter by covered entities to the:

(i) Natural Resources, Agriculture, and Environment Interim Committee; and

(ii) Legislative Water Development Commission.

(c) During the 2024 interim of the Legislature, the division shall report to the Natural

Resources, Agriculture, and Environment Interim Committee and the Legislative Water Development Commission about the following:

(i) issues related to accurately metering water supply and use, including residential use of primary or secondary water;

(ii) operational priorities of covered entities related to implementation of this chapter;

(iii) an analysis of the annual summaries prepared by the division to date; and

(iv) any other issue the division considers relevant to the implementation of this chapter.

(3) A covered entity may only receive money from the division if the covered entity complies with this section.

Section 7. Section **73-10h-202** is enacted to read:

73-10h-202. Technical assistance -- Education programs and services.

(1) The division shall contract with a qualified entity that provides education programs and services including subject matter experts to provide the training described in Subsection (2).

(2) The training shall:

(a) instruct a covered entity on the method of conducting a water loss audit using the method adopted under Subsection 73-10h-201(1)(a)(i);

(b) guide a covered entity in the process to determine a plan for water loss control as required in the development of a summary report required under Subsection 73-10h-201(1)(a)(ii); and

(c) include the initial validation of a water loss audit required by Section 73-10h-201.

Section 8. **Appropriation.**

The following sums of money are appropriated for the fiscal year beginning July 1, 2020, and ending June 30, 2021. These are additions to amounts previously appropriated for fiscal year 2021. Under the terms and conditions of Title 63J, Chapter 1, Budgetary Procedures Act, the Legislature appropriates the following sums of money from the funds or accounts indicated for the use and support of government of the state of Utah.

ITEM 1

To Department of Natural Resources - Division of Water Resources

From General Fund, one-time $1,350,000

Schedule of Programs:

Planning program $1,350,000

The Legislature intends that the $1,350,000 be used as follows under the Water Loss Accounting Act enacted by this bill:

(1) $900,000 to provide for technical assistance and education to covered entities; and

(2) $450,000 to develop a validation program for water loss audits including training of individuals to conduct validations.

ITEM 2

To DNR Pass Through

From General Fund, one-time $150,000

Schedule of Programs:

DNR Pass Through $150,000

The Legislature intends that the $150,000 be used to integrate information from water accounting reports with existing water related reporting requirements as recommended by the technical advisory committee under the Water Loss Accounting Act enacted by this bill.

ITEM 3

To Department of Natural Resources - Division of Water Resources

From General Fund $300,000

From General Fund, one-time ($300,000)

Schedule of Programs:

Planning program $300,000

($300,000)

The Legislature intends that the $300,000 be used to pay the ongoing expenses of the Water Loss Accounting Act enacted by this bill.

Endnotes

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