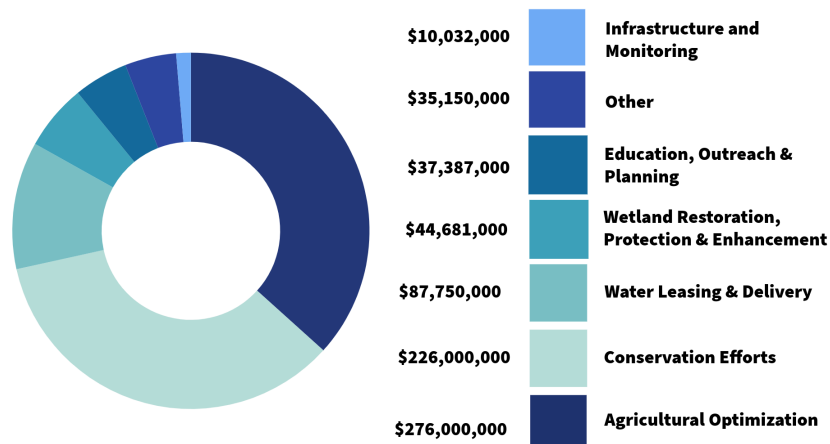




Great Salt Lake: Restoration & Stabilization Initiatives

Executive Summary

State Appropriations Supporting Great Salt Lake



Direct allocations to the Great Salt Lake are only part of the story: hundreds of millions in additional state investments are driving water efficiency, conservation, and infrastructure upgrades across Utah to improve resiliency and stretch the water supply.

The Great Salt Lake is a critical environmental and economic engine for the American West, anchoring regional air quality for millions and supporting over \$2 billion in annual economic activity through mineral production, aquaculture, and recreation. It's an essential stopover on the Pacific Flyway for as many as 12 million birds spanning over 350 species, and its ecosystem supports about one-third of Utah's vegetated wetlands.

Declining water levels present a severe regional, national and international concern, threatening a vital hemispheric ecosystem and posing significant public health risks. In response, Utah has appropriated over \$750 million over the past five years, alongside \$200 million in private pledges. Complementing these targeted efforts, hundreds of millions in additional state funding continue to modernize infrastructure, improve efficiency and boost conservation efforts statewide. This brief outlines the comprehensive funding requirements and strategic initiatives necessary to ensure the long-term stabilization, ecosystem health, and restoration of the Great Salt Lake.

Background and Significance

As the largest saline lake in the Western Hemisphere and the eighth largest lake globally, the Great Salt Lake plays a critical role in Utah's hydrological cycle and snowpack. The shrinking of the lake mirrors a global crisis of collapsing terminal lakes. The threat of losing the lake extends far beyond Utah's borders. Its collapse would trigger severe local, regional, and national public health threats along with devastating ecological and economic consequences.



Recent Action and Investments

- **State Action:** Utah has appropriated more than \$1 billion and enacted major legal reforms toward statewide water resiliency and prioritizing the lake's health. Focus areas include agricultural water optimization, municipal conservation, improved water delivery, and environmental risk mitigation. Major water policy changes have also been implemented to manage Utah's water as a unified system.
- **Private Action:** Private partners have pledged an additional \$200 million, supplemented by water donations valued in the millions.

More Water to the Lake – Near-term Target vs Full Recovery

The Great Salt Lake Strike Team reports that an increase in sustained additional inflow of 250 thousand acre-foot (KAF) per year would move the lake out of a transitional zone where adverse effects may be seen and stabilize the lake elevation at approximately 4,195' over the next 10 years.

Proposed Initiatives and Critical Funding Needs

Water in the Great Salt Lake Basin is a complex system. As any of the proposed initiatives are implemented, the efficacy of other initiatives may be impacted. Water availability realized through conservation efforts remains a top priority and leads to more water dedicated and delivered to the lake. While all of these proposed initiatives may not be feasible to implement simultaneously, each initiative brings great value as the state works to improve the health of Great Salt Lake.

1. **Improved Water Infrastructure and Delivery** – We can significantly improve our water infrastructure, distribution systems within the watershed, and measuring/monitoring infrastructure to increase water delivered to the lake. Massive state matching grants help farmers convert flood irrigation to drip or center-pivot systems, install real-time soil sensors, and pipe open canals to eliminate seepage and evaporation.

Initiative	Initiative Details	Est. Cost	Priority
Engineering	Augment the Newfoundland Basin and re-engineer Stansbury Bay evaporation ponds to deliver hydrologically stranded water to the lake, delivering an estimated 40,000-60,000 AF annually , with considerably more water during heavy precipitation years.	\$100M	Critical
Interagency Water Agreements	Collaborate through federal and state agreements to deliver water from existing storage locations when lake levels are low, which would dedicate 150,000 to 500,000 AF spread over multiple years .	\$500M	High



Irrigation Distribution Efficiency	Line or cover canals in strategic locations to prevent seepage and improve efficiency, which would save 90,000 AF of water annually.	\$246M	High
Stream Gages & Snow Observations	Install 30 measuring devices and increase airborne snow observations in 5 target areas , and continue funding, new and updated infrastructure, and improved data management, support and technical assistance related to water data. This will create more robust shepherding pathways to execute water leases. Snow observations provide more accurate hydrologic information.	\$55M	Medium
Water Loss Analysis	Hire an engineering contractor to perform comprehensive water loss and efficiency analysis on canals and other water conveyance/storage structures to provide decision makers with the best available data.	\$10M	Medium
Forest Health & Watershed Vulnerabilities	Targeted forestry projects can improve water quality and yield while preventing catastrophic wildfires and protecting our communities. The proposed investment would treat approximately 850,000 acres.	\$200M	Medium
Water Infrastructure and Delivery Total		\$1.11B	

2. Municipal Water Conservation

Municipal water demand continues to play a large role in watershed water use. Funding will continue to promote programs that focus on efficient watering and removing non-functional turfgrass. Universal metering mandates for unmetered outdoor irrigation systems provide real-time usage data and consistently drive down residential outdoor water use by 20–30%.

Initiative	Initiative Details	Est. Cost	Priority
Municipal Water Leasing	Work with municipalities to develop comprehensive municipal conservation strategies that combine individual conservation efforts, then dedicate or lease conserved water to the lake, which would deliver 770,000 AF over 5 years (154,000 AF annually).	\$112M	Critical
Demand Reduction Programs	Additional funding for drip irrigation, turf removal and smart irrigation timers to reduce municipal	\$250M	Medium



	demand, which would remove over 60 million square feet of non-functional turf or install smart timers in one-third of Utah homes, resulting in up to 17,000 AF water savings annually.		
Municipal Conservation Total		\$362M	

3. Agricultural Optimization

Agriculture is an important aspect of Utah’s economy and way of life. However, agricultural irrigation uses the most water in the watershed—about 63-65%. This funding will be used to work with farmers to implement water-saving measures. Legal reforms permit agricultural producers to voluntarily lease saved water for downstream environmental flows without risking the forfeiture of their water rights under historic “use-it-or-lose-it” doctrines.

Initiative	Initiative Details	Est. Cost	Priority
Agricultural Water Leasing	Lease water from agricultural producers and canal companies, which would result in 714,000 total AF or 142,800 AF annually over 5 years.	\$250M	Critical
Irrigation Optimization	Work with the agricultural community to optimize irrigation methods to reduce water use and give producers operational flexibility to lease conserved water to the Great Salt Lake, which would reduce water use by about 125,000 AF annually and provide operational flexibility for conserved water to be available to lease.	\$225M	High
Conservation Easements	Protect and preserve 25,000 acres of open lands , wildlife habitat and the associated return flows around the lake through permanent conservation easements, which would protect 51,000 AF annually.	\$72M	Medium
Agricultural Optimization Total		\$547M	

4. Habitat Protection

Protect critical habitat by focusing on conserving, enhancing and protecting the lake’s wetlands while improving hydrology and habitat across the watershed by removing invasive species and investing in habitat improvements. In 2022, the Utah Legislature passed [H.B. 410](#) to form the Great Salt Lake Watershed Enhancement Trust, co-managed by the National Audubon Society and The Nature Conservancy, focusing on water rights, restoring surrounding wetlands, and preserving critical bird



habitat along major tributary rivers like the Bear, Weber, and Jordan. The state appropriated \$40 million for this initiative, which has been used to secure tens of thousands of acre-feet of water via permanent donations, multi-year leases, and single-year transactions.

Initiative	Initiative Details	Est. Cost	Priority
Non-Native Species Removal	Remove invasive species across the watershed. Replace phragmites with native salt grass within the Great Salt Lake meander line, which would save 80,000 AF of water annually.	\$49M	Critical
Wetland & Shorebird Conservation	Invest in shorebird and waterfowl habitat improvements via critical wetland acquisitions and infrastructure upgrades related to wetland management. Purchase and/or conserve between 30,000-50,000 acres of critical habitat for shorebirds and waterfowl. Some land may be available with water rights or water shares that may provide additional benefits.	\$199M	High
Habitat Protection Total		\$248M	

5. Public Health and Environmental Risk Mitigation

Advance lake restoration by integrating critical mineral recovery, targeted dust monitoring, lake ecology infrastructure, and collaborative research.

Initiative	Initiative Details	Est. Cost	Priority
Public Dust Alert System	Funds the activation and publicization of a new air monitoring alert app to warn residents of incoming dust storms.	\$1.4M	High
US Mag Site Remediation & Critical Minerals	Redevelop the former US Magnesium site to address Superfund environmental remediation through concurrent operations and critical minerals development. 144,000 AF of water included in settlement.	\$496M	High
Research Partnerships	Coordinate and develop research with state, local, and private sector partners that could fund 10 or more major research topics that influence lake management.	\$5.5M	High



Salinity Management Infrastructure	Improve infrastructure to manage flows between the North and South arms of the lake to support brine shrimp and brine fly production. Several options exist, including control structures between the north and south arms to influence the import or export of salt between them.	\$46M	Medium
Dust Emission Mitigation	Identify and actively treat dust hot spots, particularly in vulnerable areas like the playa, which would reduce harmful emissions at the source while long-term water solutions are developed and implemented, establishing measurable proof of which localized or large-scale interventions work.	\$84M	Medium
Expanded Dust Monitoring Network	Build a broader, more robust monitoring infrastructure, including \$8.6 million to deploy 41 new air monitoring sensors. This yields highly accurate, localized data to track air quality and verify the success of the hot spot mitigation efforts.	\$8.6M	Medium
Mineral Production Incentives	Implement an incentive program for research, development, and implementation of critical mineral production (e.g., magnesium and lithium) in a manner that conserves water resources. 59,000-218,00 AF of water can be used for extraction annually. Any advance in technology could offset some or all of this depletion.	\$244M	Medium
Water Sourcing and Quality Studies	Fund critical research into how nutrients and toxins affect brine shrimp, and the infrastructure needed to safely route wastewater and stormwater directly to the lake, which would yield actionable strategies to increase the lake's overall water volume without compromising its water quality.	\$1.7M	Medium
Public Health and Environmental Risk Mitigation Total		\$887.2M	
TOTAL:		~\$3.16B	



Risk of Failure

1. Improved Water Delivery

Failure to improve water delivery opportunities to the Great Salt Lake will lead to ongoing and sustained declines in lake levels. As levels decline, the State of Utah will lose critical mineral production. Critical minerals are increasingly a national security issue, and Utah will be unable to answer the call. Declining lake levels will also cause a collapse in brine shrimp production, which would negatively impact the global farmed fish food supply by 48%. Consistently lower lake levels also leave more playa exposed for longer periods, increasing opportunities for dust events.

2. Municipal Water Conservation

Utah's continued economic and population growth hinges on improved, long-term municipal water conservation. Without improved, ongoing municipal conservation measures, Utah may soon face unsustainable growth and stressed water supplies.

3. Agricultural Optimization

Failure in agricultural optimization may lead to increased loss of agricultural land. Agricultural producers are continually being asked to do more with less, and without the operational flexibility agricultural optimization practices provide, many farms may be sold. As farms leave production and are slated for development, prime open space is permanently lost, which in many cases also harms return flows, aquifer recharge and wildlife habitat. Diminishing farmland around the lake may also increase local temperatures and cause more evaporation from the lake.

4. Habitat Protection

Healthy wetlands around the lake are one of the state's most valuable assets. If wetlands are poorly managed or lost completely, a Federal Endangered Species Listing is likely for specific bird species that rely on the lake's unique habitats. Brine flies provide one of the largest food sources for migratory birds utilizing the lake. Degraded wetlands and low lake levels would reduce habitat for brine fly production, which could also accelerate a potential endangered species listing. The wetlands provide an immense ecosystem benefit to Utahns by improving water quality. If lost, this service could cost citizens millions in water quality improvement projects. Invasive species like Phragmites, which are currently prolific throughout much of the wetlands, would continue to choke out native vegetation, destroy nesting habitat, and reduce open water for migratory birds.

5. Public Health

Public health is best protected through improved air quality, and without increasing inflows to the Great Salt Lake, more lakebed and playa would remain exposed for longer periods. Failing to obtain better information through dust monitoring would leave Utah citizens without an accurate picture of particulate makeup during wind events, and leave the state guessing where dust is sourced.



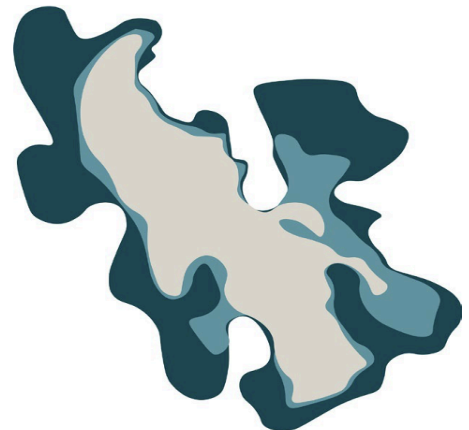
Metrics for Success

As the state moves forward with the above restoration and stabilization initiatives, it is critical to identify long-term success metrics that reach beyond specific lake elevation levels.

- Maintenance and preservation of wetlands and wildlife habitat that include avoiding a federal ESA listing
- Protection of air quality
- Stabilization of lake levels that reverse the overall decline
- Preservation of mineral production
- Preservation of brine shrimp production
- Sustainable growth of Utah communities
- Preservation of viable agricultural communities
- Improved water quality

Conclusion

Preserving the Great Salt Lake is an urgent ecological and economic imperative and a priority for the State of Utah, with over \$1 billion in state appropriations and \$200 million in private pledges invested in water conservation and Great Salt Lake protection in recent years. State leaders and lake managers have identified over \$3 billion in funding needed over the next five years spread across water delivery infrastructure, agricultural and municipal conservation, habitat protection, and public health and risk mitigation. The State of Utah is currently asking the federal government to invest \$1 billion in these initiatives. The federal investment in the Great Salt Lake will fund project implementation, including engineering and planning, with no intent to build capacity. The investment will protect public health and stabilize one of the Western Hemisphere's most vital saline ecosystems, while ensuring the lake's robust economic contributions continue to support Utah's economy.



At today's lake elevation, approximately 200 square miles of lakebed are exposed when compared to the average lake level elevation of 4196'