

Recommendations to Ensure Adequate Water Flows to Great Salt Lake and Its Wetlands

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Executive Summary

Water levels in Great Salt Lake—the largest saline lake in the Western Hemisphere—are in decline, threatening billions of dollars in economic activity, a globally important ecosystem, local public health, and other critical values that the lake supports, including the lake’s essential contribution to Utah’s water cycle through lake effect precipitation.

As the threat to those values has grown, public concern about the lake and its dwindling water supplies has increased. In 2019, the Utah Legislature passed, and Governor Gary Herbert signed, HCR10 – [“Concurrent Resolution to Address Declining Water Levels of the Great Salt Lake”](#) (“HCR-10” or the “Resolution”), recognizing *“the critical importance of ensuring adequate water flows to Great Salt Lake and its wetlands to maintain a healthy and sustainable lake system.”* Fortunately, at current levels the lake continues to sustain many of its beneficial uses. HCR-10 recognizes, however, that we cannot take those lake levels or the values they sustain for granted. The enormous economic, environmental, and human health costs associated with the loss or degradation of terminal lake systems around the globe—including the Aral Sea, Lake Urmia, Owens Lake, and many others—teach us that serious harms can and will occur if the lake continues to decline, and we need to avoid those outcomes by planning ahead and working together. As the Resolution states: *“by taking steps now, Utah will be best-positioned to avoid the kind of degradation and economic harm experienced by other states [and] communities.”*



Figure ES-1. Focus Areas Identified to Ensure Adequate Water Flows to Great Salt Lake and its Wetlands

To facilitate that kind of long-term planning, the Resolution encouraged the Utah Departments of Natural Resources and Environmental Quality to engage with a diverse group of stakeholders to consider and make recommendations on how to ensure adequate water flows to the lake. That is a monumental task made even more challenging by prolonged drought, a changing climate, and increasing upstream water demands driven by Utah’s rapid population growth and booming economy.

In response, those agencies convened a group of stakeholders (the “Steering Group”), including agency staff, experts in water law and municipal and

agricultural water supply, agricultural producers, environmental conservation and outdoor recreation interests, and representatives of industries that rely on the lake. The report that follows presents 16 Strategic Opportunities identified by the Steering Group, along with 60 specific recommendations that address those opportunities (Table ES-1). The Strategic Opportunities are organized into six focus areas (Figure ES-1): the need to (1) educate and engage stakeholders; (2) improve information and decision-making; (3) optimize agricultural water use; (4) optimize municipal and industrial (M&I) water use, and connect water and land use planning; and (5) refine legal and policy options that support protecting water supplies to the lake. The final recommendation (6) recognizes the need to find sustainable ways to fund and otherwise sustain those efforts over time.

Managing Utah's water supplies cannot be approached as a "zero-sum game." Instead, strategies for sharing finite water supplies in ways that support multiple uses is vital for sustaining Utah for generations to come.

There is always a temptation when thinking about water supply to reduce it to a zero-sum game. Water is, after all, a finite resource, particularly in a dry state like Utah. In that restrictive framework, however, water for the lake can only come at the expense of something else. That way of thinking threatens to pit those who support and recognize the need for preserving Great Salt Lake and its wetlands against those who fear that doing so will threaten what they value.

The Steering Group's recommendations by-and-large reject an "either/or" construct in favor of strategies that share finite water supplies in ways that support multiple uses. For example, Strategic Opportunity #7 calls on state and federal agencies to "leverage existing programs to optimize the use of water in ways that benefit both agriculture and Great Salt Lake." Such solutions require creativity and often outside funding, but successful examples of such innovations abound, particularly as states in the Interior West experiment with new ways to stretch limited water resources. Consequently, even as the report calls on stakeholders to protect the lake's water supplies, the recommendations fully recognize the need to avoid harm and protect existing water rights. For example, Strategic Opportunity #8 supports maintaining and conserving working agricultural lands linked to the Great Salt Lake Ecosystem, given the important relationship between current irrigation practices and

agricultural return flows that benefit the lake and the wildlife that depend on it.

A "first do no harm" approach should be implemented to leverage science to manage risk and make more informed and forward-thinking decisions.

This report also recognizes that finding ways to integrate water planning and land-use decisions is essential. (See Strategic Opportunity #10). Historically, land use decisions do not take into account the impact that a particular development or pattern of development may have on either water demand or water infrastructure. Cumulatively, this can have negative long term and cascading impacts to Great Salt Lake levels and health. The recommendations suggest finding better ways to make sure that decision-makers bridge that gap. A separate recommendation calls for stakeholders to better understand and grapple with how shifting patterns of land use affect the lake itself. (See Strategic Opportunity #11.) These deliberative strategies are important in linking state and local land use and water resource policies that are often developed out of context with one another and the lake itself.



Sailing on Great Salt Lake (Photo Credit: Kurt Repanshek)

The report acknowledges that optimizing the way we use water could benefit Great Salt Lake levels. Strategic Opportunities #7 and #8 address agricultural water uses, while Strategic Opportunities #9 and #10 address municipal and industrial water use. Changing Utah's water use habits is key to maintaining water flows to Great Salt Lake. By optimizing Utahns' water use, it may be possible to delay or forestall major public water development projects, which would benefit lake levels and save taxpayer money.

A large number of recommendations emphasize the need to study or pilot different water management approaches to ensure we understand the implications of changing the ways in which water is used and shared. Recommended studies also serve to provide the data and analyses needed to inform and improve planning and decision-making that takes into account water flows for Great Salt Lake. Examples of such recommendations include the following: coming up with an overall water budget and water depletion analysis for the Great Salt Lake watershed under differing scenarios that include a changing climate; piloting cost-effective telemetry and measurements; assessing water reuse scenarios and impacts; updating groundwater and shallow aquifer studies near Great Salt Lake; and completing a study of agricultural lands in the vicinity of Great Salt Lake to assess their importance to return flows that benefit Great Salt Lake and its wetlands.

While a number of concepts addressed in this report have been touched on in other efforts, including the 2017 Recommended State Water Strategy, the Steering Group intends the recommendations in this report less as ends in-and-of-themselves than as catalysts to spark continuing conversations, studies, and thoughtful decision-making. It will take a coordinated and committed effort from many stakeholders over time to find workable solutions. Fortunately, Utah has a proven track record of taking the long view and working together to solve seemingly insurmountable problems – a characteristic drawn from Utah’s pioneer

legacy. We must tap that same pioneer spirit to have any hope of solving a challenge as big as saving Great Salt Lake. We owe it to ourselves and to those who will call Utah home for generations after us to find a way to accomplish that.

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Howard Slough Waterfowl Management Area, Great Salt Lake (Photo credit: Ryan Willeitner)



Wilson's Phalaropes, Antelope Island, Great Salt Lake, Utah. (Photo credit: Camilla Cerea/Audubon)

Table ES-1. Strategic Opportunities to Ensure Adequate Water Flows to Great Salt Lake and its Wetlands

Educate and Engage

- 1. Find Ways to Help the Public and Decision-makers Connect with Great Salt Lake** – Sustained education and engagement of the public and decision-makers will help foster a spirit of cooperation and strengthen community support for the actions and funding needed to ensure protection of Great Salt Lake and its wetlands.
- 2. Create a Great Salt Lake Framework to Improve Coordination Among Governmental Entities and Other Stakeholders** – Coordinating decisions and actions across the watershed will minimize costs and maximize benefits to Great Salt Lake and its wetlands.

Improve Information and Decision-Making

- 3. Better Measure Water Resources in Cost-effective Ways to Optimize Their Use** – Utah must continue to improve measurement and metrics to understand how best to manage its water resources and the trade-offs associated with shifts in water use over time.
- 4. Agency and Other Decision-makers Should Account for Impacts to Great Salt Lake when Planning and Making Decisions that could Impact Great Salt Lake and its Wetlands** – Effort must be made to find ways to ensure that decision-makers understand how the decisions they make affect the lake in positive or negative ways and make sure that those effects inform their short and long-term planning and decision-making. To ensure the best use of limited resources, this will require agencies to work together to develop long-term and coordinated planning for actions that affect Great Salt Lake and its surrounding wetlands.
- 5. Develop an Integrated Strategy to Navigate Longstanding Legal and Policy Issues** – Preserving adequate flow for Great Salt Lake and its wetlands will require coordination and integration of water policy and strategies across water utilities and basins within the Great Salt Lake watershed.
- 6. Close Data Gaps in Baseline Condition of Water Flow to Great Salt Lake and its Wetlands** – A “first do no harm” approach should be implemented to leverage science to manage risk and make informed and forward-thinking decisions.

Optimize Agricultural Water Use

- 7. Leverage Existing Programs that Optimize the Use of Water in Ways that Benefit Both Agriculture and Great Salt Lake** – Existing State and Federal program criteria could be better utilized and revised in ways that improve incentives for agricultural producers to optimize the use of their water. Connecting those programs to water supplies for Great Salt Lake could help expand the programs and make them more sustainable over time.
- 8. Where Possible, Maintain and Conserve Working Agricultural Lands Linked to the Great Salt Lake Ecosystem (to Preserve Return Flows)** – Protecting “at-risk” agricultural lands presents an opportunity to also protect Great Salt Lake and its wetlands.

Optimize Municipal and Industrial Water Use and Land Use/Water Planning

- 9. Ensure that Water Planning Informs Land Use Decisions** – Because we cannot sustain growth in Utah without water, water planning must become an integral part of land use planning and economic development.
- 10. Find Ways to Use Less Water on Urban and Suburban Landscapes** – Metering secondary water, reducing the amount of turf, avoiding watering during the day, drip irrigation, and other strategies can reduce infrastructure costs, stretch water supplies, and help sustain Great Salt Lake and its wetlands over time.
- 11. Fully Understand How Land Use Changes Affect Water for Great Salt Lake and Better Manage Those Changes to Benefit the Lake** – Changes in land use affect the lake in different ways. To preserve the lake, we need to understand those effects and what they mean for the lake and its future.

Refine Legal and Policy Options

- 12. Fully Explore How to Protect Water Supplies for Great Salt Lake Using Existing Legal Authorities** – Existing laws, authorities, directives, and policies may provide important, but under-utilized ways to benefit Great Salt Lake.
- 13. Fully Explore the Idea of Depletion-Based Models to Promote the Optimal Use of Water** – Utah should continue investigating depletion-based models that may provide water rights holders with meaningful incentives to reduce depletion and that take into account existing water rights.
- 14. Fully Explore how Principles of Prior Appropriation can Incentivize Efforts to Decrease Current Depletion Levels While Protecting Existing Rights** – Promote flexibility and find new incentives to optimize water use and sustain healthy lake levels while protecting existing water rights.
- 15. Explore New Statutory Authorities that Incentivize the Optimal Use of Water Resources and Allow Water Rights to be Used to Support Great Salt Lake** – We must identify new strategies and utilize existing authorities to augment water supplies to the lake and its wetlands while taking into account existing upstream water rights.

Sustain Efforts Over Time

- 16. Identify Innovative and Sustainable Funding Sources to Ensure Adequate Water Supplies for Great Salt Lake** – New and sustainable methods should be sought to fund programs and other efforts to preserve Great Salt Lake and its wetlands.