

## Short-Term Opportunities for Great Salt Lake

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Project name:	Work Plan for the Great Salt Lake Basin Integrated Plan	6440 S. Millrock Drive
Project no:	W7Y52500	Suite 300
Attention:	Laura Vernon/Division of Water Resources	Holladay, UT 84121
Company:	Department of Natural Resources	United States
Copies:	Dwight Slauch/U.S. Bureau of Reclamation	T +1385.474.8500
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## 1. Introduction

The *Work Plan for the Great Salt Lake Basin Integrated Plan* (GSLBIP) provides a roadmap to ensure a resilient water supply for Great Salt Lake (GSL) and all water uses, including people and the environment, throughout the watershed. Short-term no regret actions are a key feature of the integrated collaborative process in the Work Plan (refer to Sections 3.2 and 3.3).

This technical memorandum outlines short-term, no regret opportunities that the state or other entities can implement to enable connection, encourage innovation as a means of learning, refine our understanding of the issues, “move the needle,” and engender trust among participants. These opportunities are intended to create and maintain forward momentum, demonstrate progress, and make immediate improvements in the health of GSL and have been shared with the GSL Commissioner’s office. Legislative and legal actions are detailed in the GSLBIP memorandum entitled, *Immediate Water Policy Opportunities for a More Resilient Future*. This memorandum is divided into five sections:

- Messaging
- Measurement
- Municipal and Industrial (M&I) Conservation
- Infrastructure
- Lease, Buy, and Shepherd
- Dust Emissions

## 2. Messaging

The *Communications and Outreach Plan*, created as part of the *Work Plan for the Great Salt Lake Basin Integrated Plan* (refer to Appendix C), identifies three goals: 1) engage stakeholders, 2) foster collaboration and a shared understanding, and 3) raise public awareness. The state should immediately develop a brand for the GSLBIP and implement a proactive messaging campaign to announce the beginning of the GSLBIP, raise awareness of its importance, identify how the public can engage, learn, and participate, and establish a solid foundation for relationship between the GSLBIP and the public.

### 3. Measurement

Business guru Peter Drucker was often credited with the saying, “If you can’t measure it, you can’t manage it.” One of the biggest obstacles to effective water management in Utah is the lack of water supply and demand (specifically depletion) data at the resolution needed to make informed water management decisions. The Utah Division of Water Rights and Utah State University are finishing a gap analysis to identify recommendations for new metering that would help fill this gap. The Division of Water Resources recently convened a meeting of several state agencies to discuss overall goals pertaining to an integrated flow monitoring program. The Colorado River Authority of Utah performed a metering and gaging gap analysis, which determined that an initial capital investment of approximately \$7 million would enable the state to measure and monitor water use in Utah’s Colorado River drainage area. A similar effort is recommended for the GSL Basin, including the following actions:

- Invest a substantial sum (\$50 million) into an integrated and coordinated flow monitoring program that includes stream gaging and metering of points of diversion and water application in the GSL watershed. Its goal should be to create a robust data network that enables water to be transparently distributed from its original point of diversion to GSL. The program should develop a system for storing, managing, and sharing data as recommended in the *Work Plan for the Great Salt Lake Basin Integrated Plan*. This program could potentially take 10 years to implement but could be accelerated to 3 to 5 years via a concerted effort. This is a “no regret” investment.
- The flow monitoring program described above should begin immediately by leveraging current efforts in the Lower Bear River Distribution System.
- Quantify evaporative losses from GSL to enable an accurate water budget for GSL. Immediately implement the “Quantify Evaporative Losses from GSL” study described in the *Work Plan for the Great Salt Lake Basin Integrated Plan*. There may be an opportunity to partner with the mineral extraction industry to accomplish this; they will benefit from this data too.

### 4. Municipal and Industrial Conservation

M&I conservation will be an important part of stabilizing GSL. A recent study by the Utah Division of Water Resources (WRe) and major water conservancy districts (Jacobs 2022) explored the drivers and data required for calculating gallons per capita per day (gpcd) of water across the western states. The study documented the different gpcd computational methodologies and applied these to the Jordan Valley Water Conservancy District as a case study. This study showed that Utah’s water use compares with other western states when the same gpcd methodology is used. However, Utah can do much more to use its water more efficiently. During November 2019, the state issued *Utah’s Regional M&I Water Conservation Goals* (DNR 2019), which outlined 2030, 2040, and 2065 water conservation goals. An initial step would be for the state to perform the following action:

- Accelerate Utah’s regional M&I water conservation goals as follows:
  - Move the 2040 goal to 2030
  - Move the 2065 goal to 2040
- Invest \$50 million into M&I water conservation efforts by incentivizing all municipalities to convert municipal nonfunctional turf into waterwise landscaping. This would result in a significant change in outdoor water use, illustrate that our government is leading by example, and provide numerous new “conservation gardens” for the public to observe and mimic on their own properties.

## 5. Infrastructure and Water Supply

Currently, GSL is the largest water user in the state. Estimates of evaporation from GSL have ranged from 2,000,000 to nearly 5,000,000 acre-feet per year. The uncertainty associated with estimating the lake's evaporative processes, evaporation rates, and the associated evaporative losses remains high due to the unique chemistry and salinity of the lake. Several options should be considered to reduce evaporation and better manage the salinity of the South Arm:

1. In the past year, the state temporarily closed the Union Pacific Causeway, which allowed the level of the South Arm of GSL to rise and correspondingly reduce evaporation in the North Arm. A permanent and more efficient dike in place of the previous Union Pacific Causeway and new flow control structure at the bridge would allow for more efficient management of GSL water levels and salinity and afford the opportunity to reduce evaporation. Initiating, designing, and constructing permanent dike and flow control structure along Union Pacific Causeway would improve GSL operations.
2. Explore the effectiveness of new dike configurations within GSL that could better protect critical ecosystems, reduce dust emissions, reduce evaporation, and manage salinity.
3. Explore the efficacy of new in-lake structures, including floating curtain booms, that may be used to promote better mixing of freshwater inflows in the South Arm at low lake levels and thus better manage salinity.

## 6. Lease, Buy, and Shepherd

In 1992, the United States Congress passed the Central Valley Project Improvement Act. One of the 10 major areas of change was to allow the sale of water to users outside the Central Valley Project service area. This kicked off an unprecedented era of water management in California using water transfers, sales, exchanges, and conjunctive use to more efficiently use water and limit the construction of major new water projects. Utah will need to employ similar water management tools if it expects to more efficiently use its water supplies and protect GSL. The following would be first steps in that direction:

- Fund enhanced shepherding tools (models and data necessary to quantify and track saved or conserved water). See Section 3 for a description of a proposed integrated and coordinated flow monitoring program.
- Initiate an expedited change application process.

## 7. Dust Emissions

Dust is a problem along the Wasatch Front. While an immediate action for this problem would be preferable, scientific data are insufficient to recommend an action. California has been dealing with similar dust issues at the Salton Sea and Owens Lake. The State of Utah should consider the following:

- Immediately implement the "Options and Costs for GSL Dust Control" Study in the *Work Plan for the Great Salt Lake Basin Integrated Plan*. This study will identify options that have the potential of significantly reducing long term costs and reducing new water demands that may be required for dust control and mitigation at GSL.
- Identify and prioritize water management actions for GSL, such as leases and transfers, that *can* minimize the risk of dust emissions. Link temporary or permanent water transfers to specific reductions

in dust emissions (such as, a certain amount of water will treat or protect a certain amount of exposed lakebed).

## 8. References

Jacobs Engineering Group (Jacobs). 2022. *Utah's Municipal and Industrial Water Use Comparison*. Prepared for Utah Division of Water Resources, Central Utah Water Conservancy District, Jordan Valle Water Conservancy District, Washington County Water Conservancy District, and Weber Basin Water Conservancy District (not published). October.

Utah Department of Natural Resources (DNR). 2019. *Utah's Regional M&I Water Conservation Goals*. Prepared by Hansen Allen & Luce, Inc. and Bowen Collins & Associates. November.  
<https://conservewater.utah.gov/regional-water-conservation-goals/>.