

Great Salt Lake Advisory Council

10th Annual Report to the Utah State Legislature
Natural Resources Appropriations Subcommittee
February 2020



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“The Great Salt Lake Advisory Council is playing a vital role in helping to balance the many important uses of the Great Salt Lake. Now is the time to ensure this valuable natural treasure is protected for future generations.”

— Governor Gary Herbert



Great Salt Lake Advisory Council

BACKGROUND

The Great Salt Lake Advisory Council (“Council”) was established by House Bill 343 in the 2010 session of the Utah State Legislature. Council members were appointed by Governor Herbert, with consent of the Utah Senate, in June 2010. Governor Herbert kicked off the initial Council meeting on June 30, 2010.



Great Salt Lake water levels are in a long-term decline, threatening lake industries, aquaculture, recreation, conservation and other uses. The Council compiled and prioritized strategies to address low lake levels and to secure water for GSL. © Don Leonard

Duties of the Great Salt Lake Advisory Council

Legislation creating the Great Salt Lake Advisory Council identifies five specific “duties” of the Council:

- 1) ADVISE** the governor, the Department of Natural Resources (“DNR”), and the Department of Environmental Quality (“DEQ”) *“on the sustainable use, protection, and development of the Great Salt Lake” (“GSL”) “in terms of balancing: (i) sustainable use; (ii) environmental health; and (iii) reasonable access for existing and future development.”*
- 2) ASSIST** the Division of Forestry, Fire and State Lands (“FFSL”) in its statutory responsibilities for the Great Salt Lake (i.e. to prepare and implement a comprehensive management plan, initiate and publish studies of the lake, coordinate activities of DNR divisions with respect to the lake).
- 3) RECOMMEND** appointments to the GSL technical team and utilize technical support from that team.
- 4) ASSIST** DNR and DEQ and their boards in their responsibilities for the Great Salt Lake.
- 5) REPORT** *“annually”* to the Natural Resources Appropriations Subcommittee *“on the council’s activities.”*

2019 Tasks and Activities of the Great Salt Lake Advisory Council

During 2019, the Great Salt Lake Advisory Council addressed all five of its primary statutory “duties” as follows:

- 1) ADVISE** — The Council advised the Executive branch, including the Governor’s Office, Agency Directors and department and agency managers on issues that impact GSL sustainable use, protection and development, including: policies for water administration, priorities for research, strategies for water supply, potential costs of declining lake levels, and others.
- 2) ASSIST** — The Council met frequently with officials of the Utah Division of Forestry, Fire and State Lands to assist in and provide support for the Division’s statutory responsibilities and priorities, and to assist in initiating and publishing studies of the lake — such as the report on drying lakes worldwide, future scenarios from GSLIM, and the assessment of consequences of a drying GSL.
- 3) RECOMMEND** — The Council received reports and presentations from the Division of Forestry, Fire and State Lands’ Great Salt Lake Technical Team and utilized technical support from that team on topics, including: phragmites suppression, brine shrimp and fly trace elements, dust sources and quantification, groundwater chemistry, etc.
- 4) ASSIST** — The Council worked with both the Utah Department of Natural Resources and the Utah Department of Environmental Quality on Great Salt Lake issues ranging from water supply to water elevation, from non-native invasive plants to research priorities, from water management to water quality, and on numerous other issues.
- 5) REPORT** — The Council prepared and provided its 9th Annual Report to the Utah State Legislature Natural Resources, Agriculture, and Environmental Quality Appropriations Subcommittee.

The Council further fulfilled its statutory responsibilities to advise, assist, recommend, and report by holding five (5) formal meetings in 2019, with briefings, updates, reports, discussions, and counsel on topics including: water for GSL;

water conservation goals; legislation; drying lakes worldwide; GSL integrated management model; lake level scenarios; costs of a declining GSL; salinity management; water resource modeling; invasive species; lake elevation; GSL research; and other GSL topics. Some 2019 Council activities are summarized, below.

Council Request: State Policy to Support Great Salt Lake

There is an urgent need to implement a state policy to reverse the decline of lake level of Great Salt Lake (GSL). In early 2019 the Council sent a letter to Governor Herbert recommending that “Utah should implement an overall policy that supports effective allocation and administration of water flow to the Great Salt Lake, and use of water within its watershed to maintain or increase lake levels, while appropriately balancing economic, social, and environmental needs.” The letter underscored the need to take steps to protect existing water supplies to the Lake and to find ways to provide additional water to the lake to support its many uses.

Council Legislation: Water for Great Salt Lake

Consistent with our objective to secure and protect GSL water supplies, the Council requested legislation which was enacted during the 2019 legislative session. HCR-10 “Concurrent Resolution to Address Declining Water Levels in the Great Salt Lake” describes the value of GSL to the economy, the environment, and the quality of life for Utah residents; recognizes the need for policies to protect water supply to the lake; and calls upon DNR and DEQ to recommend measures to maintain a healthy and stable supply of water to GSL while balancing competing demands. The resolution passed both houses with unanimous support and was signed by Governor Herbert. The Departments will provide recommendations in late 2020.

Council Report: Drying Lakes Worldwide

A Council study in 2019 concluded that terminal saline lakes (like GSL) are drying and shrinking worldwide — harming health, economies and wildlife. The independent study highlights the need to conserve terminal lakes before it is too late. Failure to do so often results in catastrophic harms to the environment, to local and regional economies, and to human health, necessitating substantial, long-term investments to mitigate those impacts, often without restoring essential uses. The good news is that GSL has not yet reached the tipping point, and prompt actions can protect the lake and preserve its many benefits for Utah.

Council Scenarios: Future GSL Conditions

The Great Salt Lake Integrated Model (GSLIM), initiated by the Council in 2014, represented a leap forward in the capability of resource managers and policymakers to understand how



The Great Salt Lake supports mineral industries which extract salts and metals from heavy brine in evaporation ponds. The lake is also a valuable resource for aquaculture, conservation, recreation, water treatment, and for other industries. Overall, the Great Salt Lake contributes \$1.3 billion annually to Utah's economy. © Don Leonard

changes in the watershed might influence GSL. In 2019 we updated GSLIM and improved the model's capability to understand future changes. More importantly, we defined a range of plausible futures (scenarios) for the Wasatch Front and Back, integrated these scenarios into GSLIM, and developed relative comparisons of how future growth, climate and water management alternatives might affect GSL.

Council Assessment: Potential Costs of Declining Great Salt Lake

The Council commissioned a 2019 study to assess potential costs of declining water levels of GSL. The independent economic study found that water levels have been on a sustained downward trend, and that further declines could result in costs totaling \$1.69 to \$2.17 billion per year and job losses of over 6,500 positions, as well as reductions in the quality of life for residents and visitors of Northern Utah. Of significant concern are increased health care and business opportunity costs associated with dust blown off exposed lakebed and transported into heavily populated areas.

Council Study: Evaluating Strategies for Great Salt Lake

The Council previously compiled a list of 72 potential strategies to maintain and/or increase the surface elevation of GSL. Subsequently, the Council prioritized some of the most promising strategies. In late 2019 the Council commissioned a new study to evaluate the feasibility, cost, and potential of each priority strategy to deliver water to the lake. We expect to receive a completed study by mid-2020.

Great Salt Lake Advisory Council Summary of 2019 Council Meetings



Great Salt Lake adds \$1.3 billion annually to Utah's economy, with hunting and other recreational uses (bird watching, wildlife viewing, sailing, camping, bike riding, photography) being important components. © Scott Baxter

January 9, 2019 — Davis County Administration Building

- Update on letter to Governor Herbert seeking statewide policy to maintain or increase water levels in Great Salt Lake ("GSL")
- Summary of Great Salt Lake Technical Team ("GSLTT") reports on cattle grazing and phragmites by Utah Division of Forestry, Fire and State Lands and on brine shrimp and brine fly trace elements by Utah Division of Water Quality
- Report on Utah Regional Municipal and Industrial Water Conservation Goals by Hansen, Allen & Luce
- Review and approval of 9th Annual Report by Great Salt Lake Advisory Council ("GSLAC" or "Council")
- Discussion and approval of Council-proposed Legislative Resolution

March 13, 2019 — Davis County Administration Building

- Final Council Report on Consequences of Drying Lake Systems Around the World by AECOM
- Update on Integrated Water Resource Management Model ("IWRM") also known as Great Salt Lake Integrated Model ("GSLIM") by Utah Division of Water Resources
- Legislative Report on issues relevant to Great Salt Lake by Representative Hawkes
- Discussion of Study to Identify future Water Use Scenarios by Council members and attendees

May 8, 2019 — Davis County Administration Building

- Research Reports from GSLTT on University of Utah Dust Quantification Study Summarized by Utah Division of Water Quality and on Utah Geologic Survey Study of Groundwater Chemistry around GSL Summarized by Utah Division of Forestry, Fire and State Lands

- Ratify new GSLAC Project to Integrate GSLIM to Analyze Lake Level Scenarios by Council
- Wrap-up of 2019 Legislative Session regarding H.C.R. 10 and other GSL-related Legislation by Member of Utah House of Representatives

July 10, 2019 — Eccles Wildlife Education Center

- Review of GSLTT Research Grants by Utah Division of Water Resources
- Council Membership Report by Council Subcommittee
- Report on GSL Salinity Advisory Committee by Utah Division of Forestry, Fire and State Lands
- Final Council Report on Assessment of Potential Costs of Declining Water Levels in Great Salt Lake by ECONorthwest and by Martin & Nicholson Environmental

September 11, 2019 — Davis County Administration Building

- Research Report on Phragmites Re-vegetation Summarized by Utah Division of Forestry, Fire and State Lands
- GSLTT Research Report on Transfer of Mercury from GSL to Terrestrial Ecosystems Summarized by Utah Division of Water Quality
- Report on Executive Summary for Potential Costs Study
- Formal Report on Integration of GSLIM/IWRM to Analyze Lake Level Scenarios by Jacobs, Inc.
- Discussion of additional GSLIM improvements, USGS nutrient research, a salinity predictive model, etc.

Great Salt Lake Advisory Council

Chair

Don Leonard

Vice-Chair

Dave Livermore

Box Elder County

Commissioner
Jeffrey Scott

Davis County

Commissioner
Randy Elliott

Salt Lake County

Dina Blaes

Tooele County

Dan Tuttle

Weber County

Commissioner
Gage Froerer

Municipal Government

Tom Ward

Conservation Interests

Dave Livermore

Migratory Bird Protection Areas

Jeff Richards

Extractive Industry

Todd Bingham

Aquaculture

Don Leonard

Publicly Owned Treatment Works

Leland Myers

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