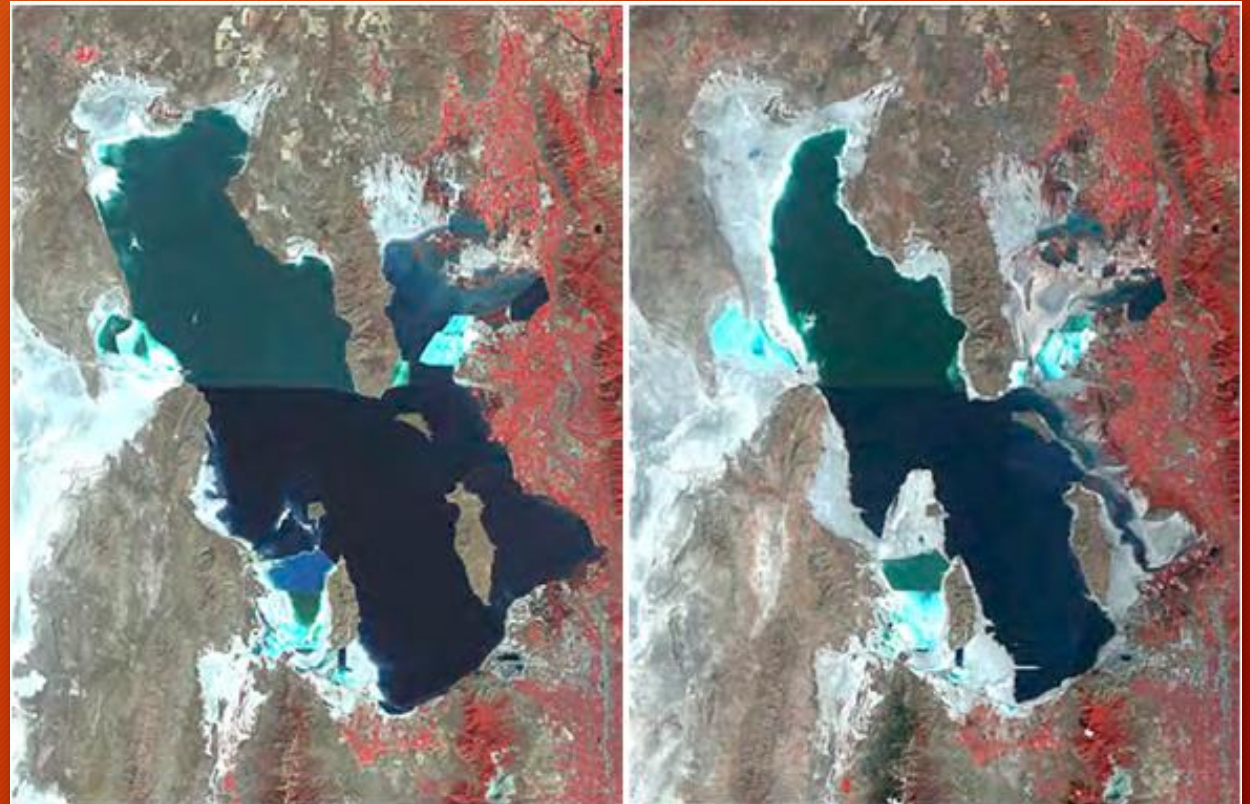


Update on the Great Salt Lake Advisory Council

**Natural Resources,
Agriculture &
Environmental Quality
Appropriations
Subcommittee**

October 18, 2022



GREAT SALT LAKE ADVISORY COUNCIL

- Created in 2010
- Utah Legislature and the Governor
- 11 Members



GREAT SALT LAKE ADVISORY COUNCIL

- County Commissioners (5)
- Municipalities
- Conservationists
- Migratory Bird Protection Areas
- Publicly Owned Treatment Works
- Mineral Extraction Industry
- Aquaculture



Duties: Advise the Legislature, Governor, and Agencies on the use, protection and development of Great Salt Lake.

GREAT SALT LAKE ADVISORY COUNCIL

- ROLE:
- Provide accurate, independent, credible information about GSL
- i.e. Inform the Debate



Information Gathering and Assessment

- **Held 77 Council Meetings** with presentations from: state, federal and local government agencies, universities, commercial interests and industries, non-governmental organizations and other private interests, water suppliers and users, water treatment districts, engineers, scientists, researchers, etc.
- **Received more than 150 public comments** at our meetings from groups and individuals interested in Great Salt Lake.
- **Made dozens of presentations** on GSL, and on our projects and studies ... at agency meetings, summits, symposia, board meetings, forums, briefings, etc.

25 ADVISORY COUNCIL PROJECTS

1. Economic Significance of GSL
2. Assessment of GSL Health
3. GSL Research Priorities
4. Phragmites Control
5. Research Priorities Update
6. Water for GSL – 72 Strategies
7. GSL Integrated Water Model
8. GSL Salinity Advisory Committee
9. Consequences of Drying Lakes
10. Costs of a Declining GSL
11. Assessment of Future Conditions
12. Legal Review of GSL Strategies
13. HCR-10 Recommendations
14. Conservation Impacts
15. GSL Public Education
16. GSLIM Updates and Training
17. Quantifying Nutrients in GSL
18. Water Re-use Study
19. Conservation Impacts - Expansion
20. GSL Equation of State Update
21. Water and Land Use Planning
22. Lake Effect Precipitation
23. Discharge Monitoring at New Breach
24. GSL Dashboard and Mapper
25. GSL Groundwater Studies

Economic Significance of the Great Salt Lake to the State of Utah

Report for Great Salt Lake Advisory Council

- Bioeconomics, Inc.
- January 26, 2012



Economic Significance of the Great Salt Lake to the State of Utah



- **Total Economic Output = \$ 1.32 Billion**
- **Total Labor Income = \$ 375.1 Million**
- **Total Employment = 7,706 Jobs**

Definition and Assessment of Great Salt Lake Health

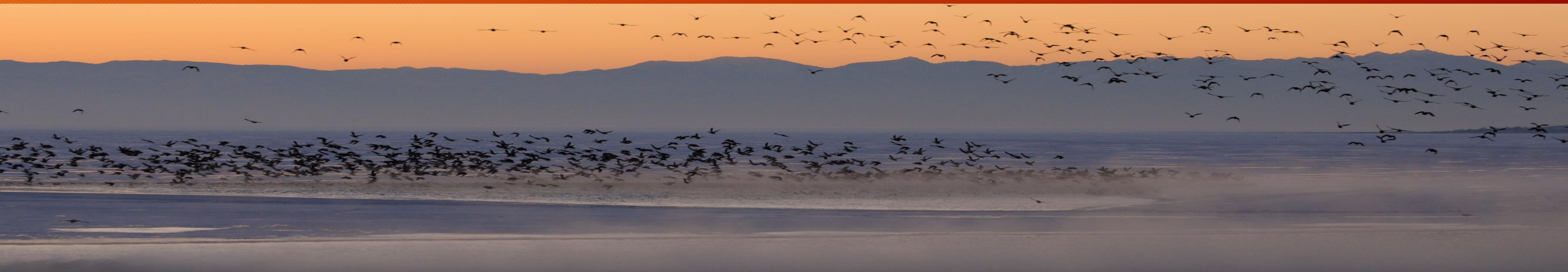
Executive Summary of 1/18/12 Report prepared by Applied Conservation, SWCA and nine leading scientists for The Great Salt Lake Advisory Council.



Definition and Assessment of Great Salt Lake Health

Good News:

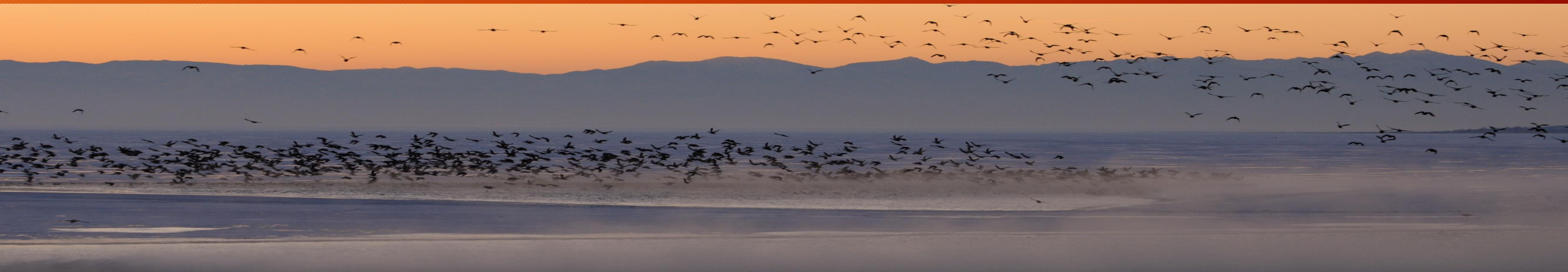
→ “...most ecological targets surrounding Great Salt Lake are in good health;...”



Definition and Assessment of Great Salt Lake Health

Major, Over-arching Concern:

→ Reduced lake levels could cause myriad negative impacts on the ecosystem, including increases in salinity, increased vulnerability to predators of nesting birds on isolated islands, stress to the brine shrimp population in Gilbert bay, and loss of critical habitat for millions of birds.



Consequences of Drying Lake Systems Around the World

AECOM

Consequences of Drying Lake Systems Around the World

Summary of the February 15, 2019 report prepared by AECOM for the Great Salt Lake Advisory Council



Photo credit: California by Eric of Newell / Wikipedia Commons / CC BY-SA 3.0

A study commissioned by the Great Salt Lake Advisory Council finds that drying of saline lakes around the world costs billions of dollars in economic losses and mitigation efforts and causes severe harms to human health and the environment.



February 15, 2019

“Drying of saline lakes around the world costs billions of dollars in economic losses and mitigation efforts and causes severe harm to human health and the environment.”



Land submerged in 1960
 - - - - - 1960 coastline
- - - - - International boundary on former seabed
0 30 60 mi
0 30 60 90 km
© 2010 EB, Inc.

Aral Sea

CATASTROPHIC IMPACTS:

- Human Health

- Windblown salt-metals-pesticide-PCBs.
- Infant mortality spike (highest in the region).
- Some of the highest rates of respiratory illnesses/deaths in the world.



Assessment of Potential Costs of Declining Water Levels in Great Salt Lake

ECONorthwest

Prepared for Great Salt Lake Advisory Council



September 2019

Assessment of Potential Costs of Declining Water Levels in Great Salt Lake

Executive Summary | Revised November 2019
Prepared for the Great Salt Lake Advisory Council

Water levels at Great Salt Lake have been on a sustained downward trend. Further declines, particularly those over a long period, could result in losses totaling \$1.69 billion 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.

The purpose of this report is to assess the potential costs of declining water levels in Great Salt Lake and its wetlands. A multitude of people, systems, and wildlife rely on Great Salt Lake and value the services it provides. Declines in lake levels threaten current uses, imposing risks to livelihoods and lake ecosystems. This report synthesizes information from scientific literature, agency reports, informational interviews, and other sources to detail how and to what extent costs could occur at sustained lower lake levels.

Water diversions from the rivers that feed Great Salt Lake have driven historical declines in lake levels. Current and future water stressors, without intervention to protect or enhance water flows to Great Salt Lake, have the potential to deplete water levels even further. Declines in lake levels threaten the business, environmental, and social benefits that Great Salt Lake provides and could result in substantial costs to surrounding local communities and the state.

This report traces the pathways and resulting costs that could arise due to declines in water levels in Great Salt Lake. The potential costs evaluated in this report include those caused by reduced lake effect, increased dust, reduced lake access, increased salinity, habitat loss, increased dust, reduced lake access, increased salinity, habitat loss, new island bridges, and the spread of invasive species (Exhibit 1).

EXHIBIT 1. COSTS CREATED BY DECLINING WATER LEVELS AT GREAT SALT LAKE

DECLINES IN LAKE LEVEL

Legend: ■ INITIAL EFFECT ■ INTERMEDIATE EFFECT ■ RESULTING COST

Source: Created by ECONorthwest.

MARTIN & NICHOLSON ENVIRONMENTAL CONSULTANTS ECONorthwest Assessment of Potential Costs of Declining Water Levels in Great Salt Lake November 2019

Monetized Costs

- The monetized potential costs of a drying Great Salt Lake could be:
 - as much as **\$1.69 billion to \$2.17 billion** per year
 - as high as **\$25.4 billion to \$32.6 billion** over 20 years



“What is the future of Great Salt Lake and its Watershed?”

- A preliminary assessment of future conditions

With current water use habits, Great Salt Lake water levels could drop another 3.8 feet in the near future (as soon as 2030) and another 11 feet long term.

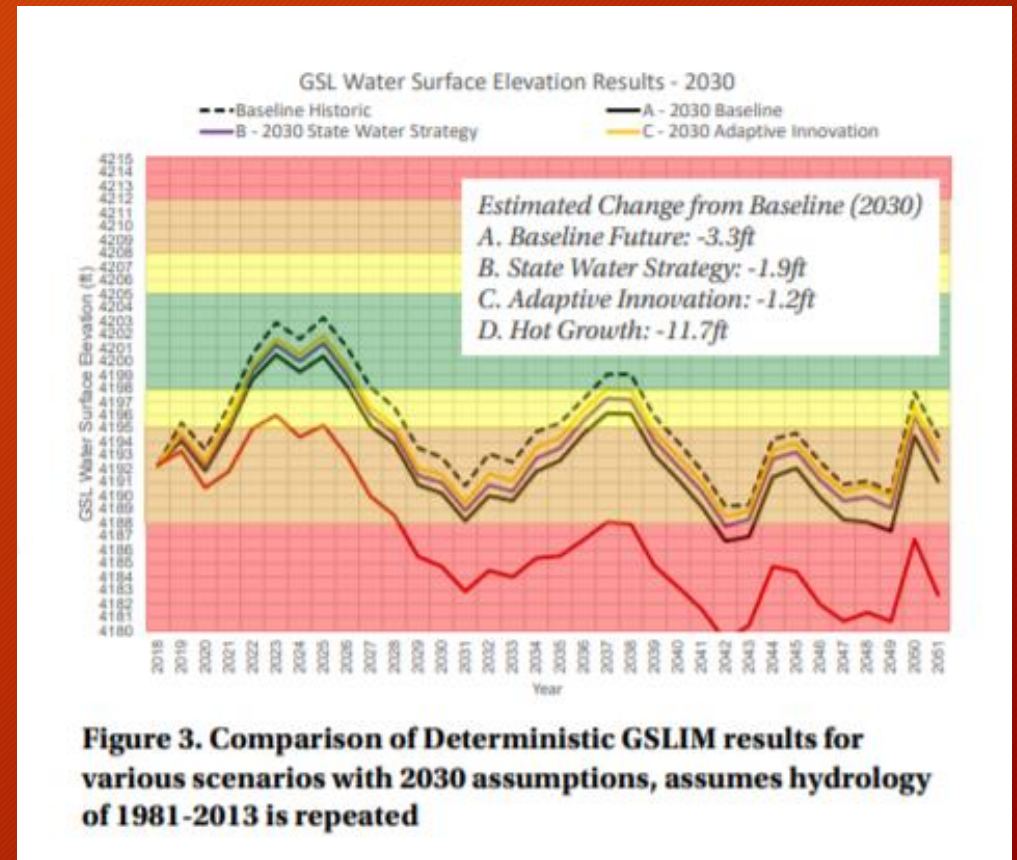
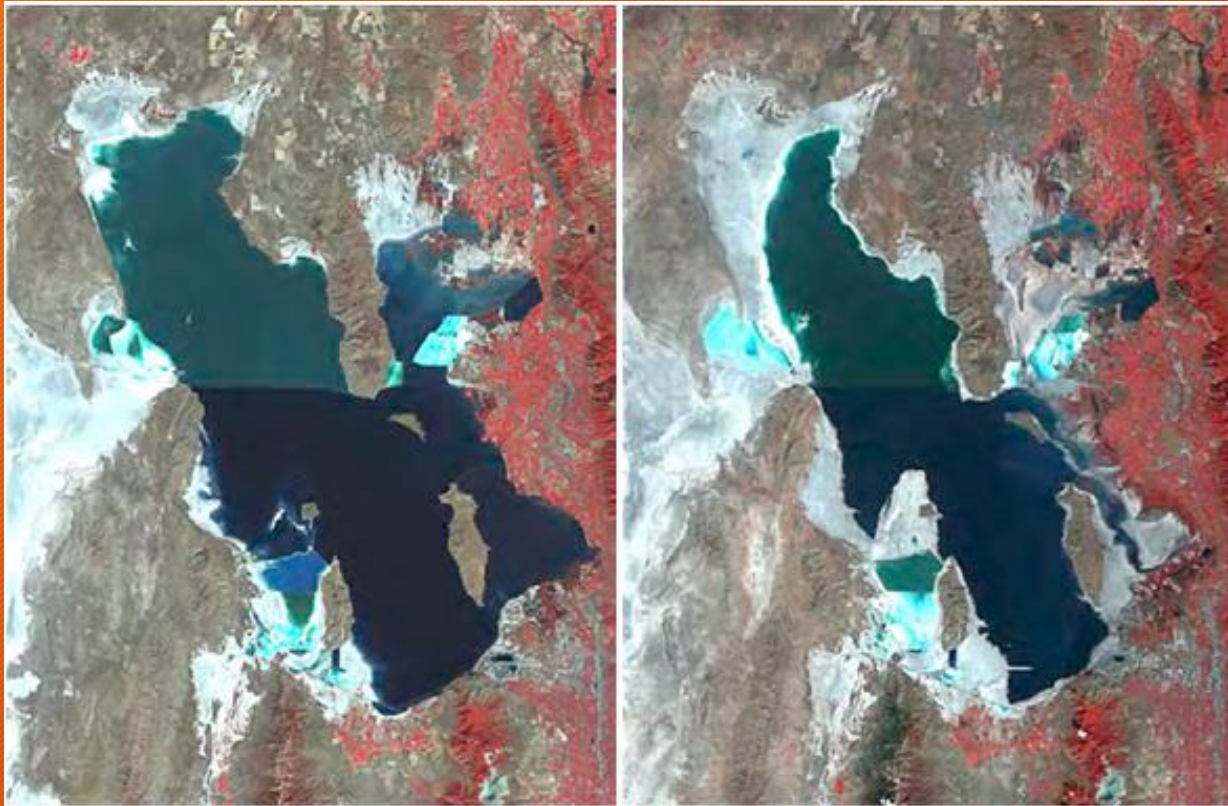


Figure 3. Comparison of Deterministic GSLIM results for various scenarios with 2030 assumptions, assumes hydrology of 1981-2013 is repeated

“Water for Great Salt Lake”



72 potential strategies to maintain and/or increase the surface elevation (water levels) of GSL.

*Prepared for Great Salt Lake
Advisory Council*

*Compiled by SWCA
September 2017*



Water Strategies for Great Salt Lake

- Legal Analysis and Review of Select Water Strategies for Great Salt Lake

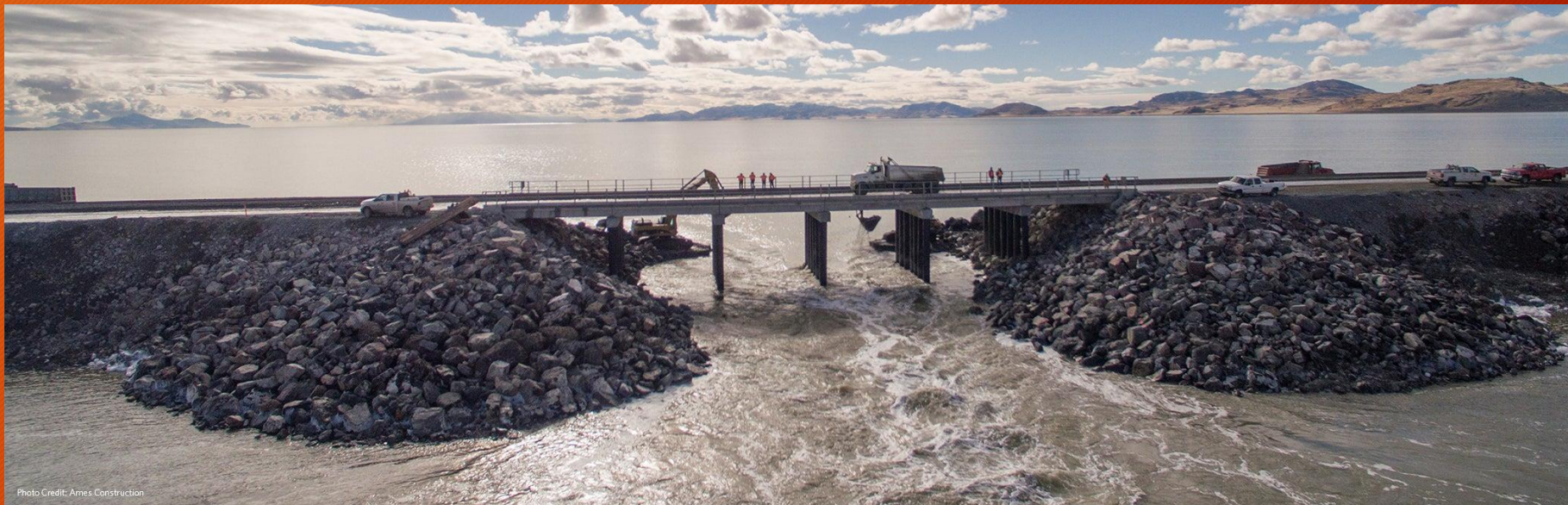
September 15, 2020

ClydeSnow
ATTORNEYS AT LAW

JACOBS

Discharge Monitoring at the New Breach

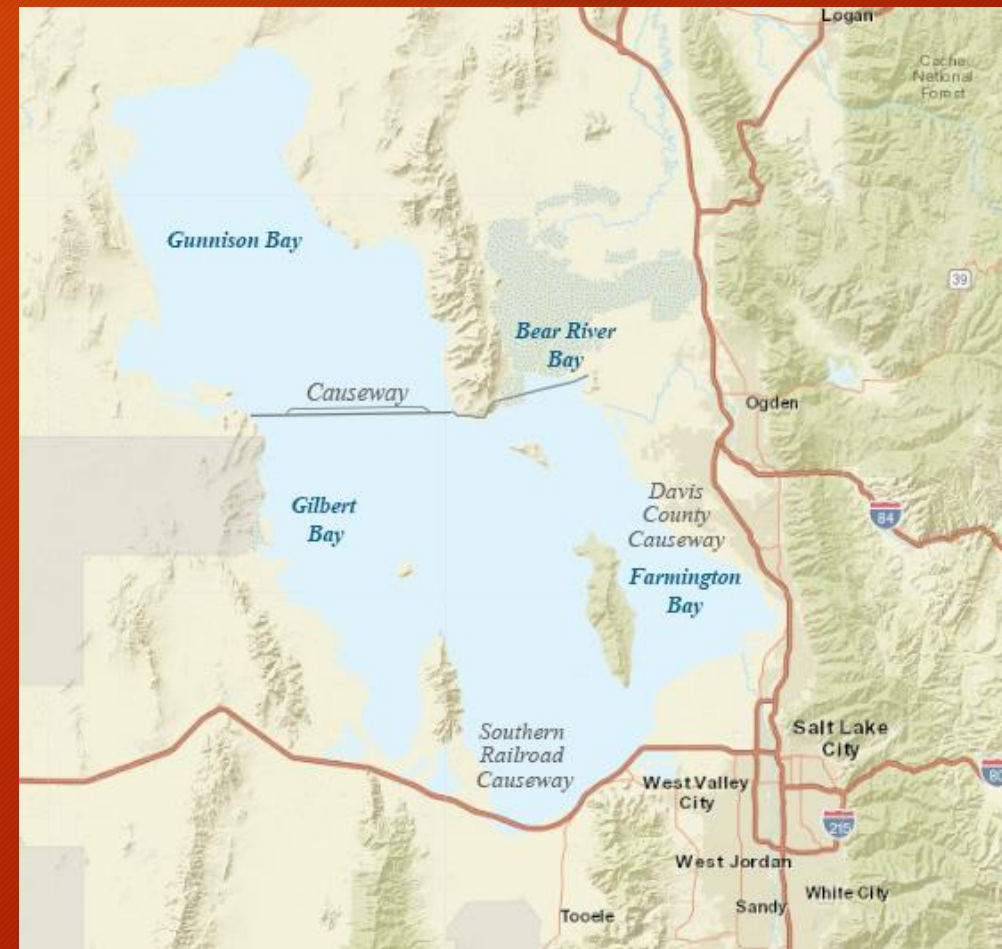
To assure collection of essential water and salt flow data at the causeway adaptive management berm



Great Salt Lake Interactive Hydro-Mapper



A Great Salt Lake watershed-specific, online dashboard to help stakeholders better understand what is happening in and around the lake regarding water supplies, water flows, lake elevation, salinity levels, etc. by providing real-time data.



Understanding Lake-Effect Precipitation

“Contributions of Lake-Effect
Periods to Precipitation and
Streamflow in Northern Utah”

August 3, 2022

By James Steenburgh
Professor of
Atmospheric Sciences
University of Utah





QUESTIONS ???

