ENGINEERED OPTIONS

Import Water

2024 GREAT SALT LAKE POLICY SUMMARIES

The Great Salt Lake Strike Team analyzed ten policy options and created summaries for each. The strike team does not endorse individual policies but rather evaluated the most-discussed options to address Great Salt Lake.

Policy summaries fall into four categories:

- **Water Shepherding**
- **Economic Incentives**
- **Agriculture Optimization**
- **Engineered Options**

For more information on policy summaries, please scan the QR code above or visit: https://gardner.utah.edu/great-salt-lake-strike-team/policy-summaries/

Water importation is possible from an engineering perspective but faces other significant hurdles. Drainage basins around the Great Salt Lake Basin are potential sources for importing water to Great Salt Lake by diverting and delivering water through canals, pipes, tunnels, and pumping facilities. While such strategies are feasible in terms of engineering and make sense from a pure water availability standpoint, they face formidable political, legal, economic, environmental, permitting, and other challenges.

POTENTIAL SOURCES FOR WATER IMPORTATION

The table below presents real-life options for water importation but omits the names and locations due to political sensitivity. Each option is analyzed based on the quantity of water it could bring to the basin in addition to the issues it would have to overcome. No clear option exists to bring sufficient water at a reasonable price while overcoming water rights, environmental, and political challenges.

Table 1: Potential Water Importation Sources

Potential Imported Water Source	Water Amount (KAF/year)	Water Rights Challenges	Infrastructure Cost ($Billion)	Maintenance Cost ($Million/ Year)	Time until Delivery (Years)	Environmental Regulations	Political Challenges
Option 1	<200	High	5-10	5-10	10-20	Moderate	Moderate
Option 2	<200	High	10-20	5-10	20-30	Low	Moderate
Option 3	<100	Extreme	<1	1-5	<5	Low	High
Option 4	>1000	Low	>50	>1000	>50	Extreme	Extreme
Option 5	>1000	Low	>50	>1000	30-40	High	Extreme
Option 6	<500	Low	20-50	50-100	30-40	High	High

Minor rating Low rating Moderate rating High rating Extreme rating

- **Water Amount** - Most surrounding basins do not have "extra" water that is not already allocated. One potential solution is to import water during times of abundance—years when nearby river systems flood. Water could be diverted in those years to mitigate local flood problems while supporting storage and/or refilling the Great Salt Lake. However, flood years remain rare and unpredictable, making the benefits from expensive infrastructure investments uncertain. Imports of surplus water are not suitable for uses that rely on a steady supply, such as municipal and industrial uses, but would contribute to the goal of replenishing the lake. Other potential sources of water, such as from an ocean desalination plant, may have abundant water but face other challenges.
- **Water Rights** - All Western states follow some version of the prior appropriation doctrine governing water use and management. Many states have closed basins to new water rights appropriations, and numerous states restrict water exportation out of state. To secure water in another state for importation into Utah, acquiring a water right under that state's legal framework and overcoming challenges from other water rights holders within that state would be necessary. One potential solution could be for Utah to enter into a water rights compact with the other state.
- **Infrastructure Cost** - Infrastructure costs depend on the distance and complexity of the system needed to import water to the Great Salt Lake. This may include miles of canals, pipes, pumping facilities, storage facilities, tunnels, powerlines, desalination plants, etc. Infrastructure costs are likely to range from tens of millions to billions of dollars.
- **Maintenance Cost** - In addition to capital infrastructure costs, operation and maintenance costs could range from millions to hundreds of millions of dollars annually.
- **Time until Delivery** - The time until the water is delivered to the lake depends on the complexity of planning, engineering, and construction; negotiating and securing contracts for water and rights of way; local, state, and federal permitting; as well as the availability of adequate water at the source. While some options may be relatively easy to design and build, it could take many years to decades to negotiate for legal access to the water or for the right water conditions to allow for water to be imported. Other projects might be easier to negotiate but will take decades to design, build, and deliver water.
- **Environmental Regulations** - Environmental regulations and permitting will vary depending on the project. They could include U.S. Army Corps dredge and fill permitting under Section 404 of the Clean Water Act; review under the National Environmental Policy Act; Endangered Species Act consultation with the U.S. Fish and Wildlife Service; as well as local and state land, water, and other permitting.
- **Political Challenges** - No other state in the West, even those with relative water abundance, has taken proactive steps to export a precious resource like water from their state to Utah or any other state. In fact, many states in the West, such as Wyoming and Montana, have made it more challenging to import water from one state to another.