# The Great Salt Lake: Risks, Responsibilities, and Solutions

## How Kaysville Can Become a Thought Leader on the Lake

# GREAT SALT LAKE IN CRISIS


*Great Salt Lake in 1985*


*Great Salt Lake in 2022*

Great Salt Lake, the largest saline lake in the Western Hemisphere, is in crisis. The root of the lake's problem comes from decades of unsustainable water consumption, but also from drought, population growth, and climate change. For more than a century, the lake's average level has steadily declined, reaching an all-time low in November 2022. At its low, more than half of the lakebed was exposed, an expanse larger than Maui.

While the past two wet winters offered temporary relief, the fundamentals of the problem remain unchanged—we use too much water to sustain the lake. To avoid dire consequences, policy makers must act.

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# WHY IT MATTERS

***Losing the lake would drastically change Utah's livability. The consequences of a drying lake are far-reaching and even catastrophic.***

## Public Health:

As the lake shrinks, dust storms emanating from the lakebed will become more frequent. The lake's dry lakebed is laden with toxins, including high levels of arsenic. This dust can travel up to 300 miles. These dust storms threaten the health of over 2.5 million residents along the Wasatch Front and beyond, causing respiratory illnesses, cardiovascular disease, diabetes, and cancers.

## Economic Harm:

The economic ramifications of a declining lake extend far beyond industries directly dependent on the lake. A drying lake could make the Wasatch Front unlivable and hostile to business investment, decimating property values, crippling Utah's tourism, and compromising the region's long-term economic viability.

## Ecological Collapse:

The lake sustains a globally significant ecosystem. The lake's decline threatens to trigger an ecological collapse that would devastate regional biodiversity—given the lake is home to almost 10 million shorebirds a year.

*A dust storm from Great Salt Lake's dry lakebed blanketing Salt Lake City; Photo Credit: Liberty Blake*

# LOCAL SOLUTIONS, LAKE-WIDE IMPACT

## WHY LOCAL GOVERNMENT ACTION MATTERS TO THE LAKE

### 1 Direct Community Connection

Local government leaders foster community trust and understand local needs.

### 2 Unique Authority to Help the Lake

Local governments possess decisive authority over water through land use ordinances, landscaping policies, and encouraging conservation.

### 3 Leadership for Lake Protection

Local governments can tailor water-saving practices to strengthen their communities and the lake.

*"I don't think anyone wants to be in a position where we lose that lake and its ecosystem, but I do think it's going to take a concerted effort in every direction, from our agriculture community, to our urban*

Spencer Gibbons, Utah Farm Bureau

*While state-level action regarding Great Salt Lake is crucial, municipalities can make a meaningful difference in the lake's future. Utah's towns and cities may vary in size, culture, and geography, but unity and collaboration are necessary to save the lake.*

While agriculture uses a significant share of Utah's water, urban water use—particularly outdoor landscaping—consumes significantly more water than previously thought. Because of this, local leaders are key to creating meaningful change.

# WHY FOCUS ON OUTDOOR WATER USE?

*Municipal water use impacts Great Salt Lake, particularly outdoor water use. For the most part, indoor water is treated and returned to the water system. Conversely, outdoor water soaks into the ground or evaporates. Additionally, municipal actions signal to agricultural users—the state's largest water users—that water conservation is truly a shared responsibility.*

## THE SCALE OF THE PROBLEM

- Utahns consumed a staggering 169 gallons per day of domestic water per capita, twice the national average, second among states only to Idaho.
- Most water used in Utah municipalities is used to water outdoor landscapes, particularly turf.

*Utahns consumed*

**169**

**GALLONS**

*of water per day*

*Utahns water usage is*

**2X**

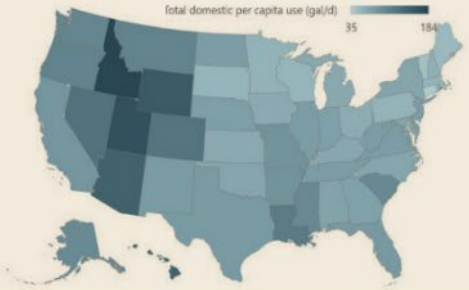
**THE NATIONAL**

*average*

## LOCAL GOVERNMENT SOLUTIONS

- Water-efficient landscaping not only assures water security but also has economic benefits and increases Utah's climate resiliency.
- As Utah grows, today's landscaping decisions will shape tomorrow's water demands.
- While state programs offer incentives for water-wise landscaping and smart irrigation, local governments can help these programs succeed.

### Total Domestic Water Use Per Capita by State



*"Conservation has to be our first choice. Across the board . . . Not only our first choice, it's our most cost-effective choice."*

Joel Ferry, Director of the Utah Department of Natural Resources

# LOCAL GOVERNMENT AND WATER CONSERVATION

*Water conservation, at its core, is simple: using less water without making unreasonable compromises. Local governments have four major tools to conserve water lost to outdoor water use:*

## 1 Regulations/ Ordinances

Regulations, generally through local ordinances, require or prohibit specific actions or behaviors. Although regulations offer the most direct path to water conservation, their success depends on effective monitoring, enforcement, and political support.

## 2 Incentives

Incentives ("carrots") reward residents and businesses for making water-wise choices. Such a voluntary approach may prove more politically palatable since it relies on willing participants to reach policy goals, but it can be expensive to implement.

## 3 Pricing/ Penalties

Pricing schemes and penalties ("sticks") use price signals to motivate water conservation. While these tools may change behaviors, they might prove politically difficult, and some residents might simply choose to pay more rather than conserve.

## 4 Education

Education promotes water conservation by providing residents with both practical information and concrete examples of successful water-saving solutions. While generally well-received, education may be resource-intensive and prove less effective than other strategies, particularly when implemented alone rather than as part of a comprehensive approach.

*Municipalities can reduce water waste by limiting when residents irrigate outdoor landscaping. These strategies can significantly reduce overwatering and other forms of water waste.*

# TIME RESTRICTIONS ON OUTDOOR WATER USE

## LOCAL GOVERNMENT SOLUTIONS

### 1. Time-of-Day Restrictions

Watering during cooler hours, rather than midday, reduces water losses from evaporation. *A restriction, for example, could prohibit irrigation between 10 AM and 6 PM.*

### 2. Length of Time Restrictions

Overwatering occurs when irrigation continues after soil becomes saturated. To reduce this waste, *a prohibition could limit watering an area beyond a specified length of time, such as an hour.*

### 3. Day-of-Week Restrictions

Coordinated watering schedules help prevent waste and manage peak water demand. Restrictions could assign designated irrigation days based on property addresses to prevent water waste. *For example, a schedule might allow watering only on set days.* This creates a predictable schedule for residents and allows for easy monitoring.

### 4. Season Restrictions

The simplest version of these restrictions would prohibit watering during cooler seasons when watering is unnecessary. The Utah legislature considered a bill using this mechanism in 2024, which *would have prohibited watering between October 1 and April 25.*

### 5. Weather-Related Restrictions

Weather conditions can make irrigation ineffective or wasteful. Restrictions can prohibit *irrigation during rain or high winds, or require rain sensors* on irrigation systems to prevent ineffective and unnecessary watering.

## TIME RESTRICTIONS, SOME LOCAL EXAMPLES

### PARK CITY, UTAH

Prohibits outdoor irrigation between 10 AM and 7 PM

Properties can only irrigate every other day from May 1 to September 30

Water Manager gives notice of noncompliance and can issue citations with fees

### SYRACUSE, UTAH

Prohibits outdoor irrigation between 10 AM and 6 PM

City Council can enact additional mandatory water restrictions, including day of the week restrictions "with addresses or types of uses being assigned different watering schedules"

Penalties for resolution-passed mandatory water restrictions include notice, fines, and pressure irrigation service termination

## WATER PRICING

*Water pricing is one of the most effective tools to reduce water consumption. Using pricing strategies to limit consumption of limited resources is familiar in the market and has been effectively used in the transportation, energy, and telecommunications sectors. Utah's water rates rank among the lowest in the West, partly because rates are subsidized with tax dollars. Effective water pricing sends a signal that causes users to conserve water. The State of Utah, recognizing the potential of water pricing, explores strategies in its recent Water Infrastructure Funding Study.*

### LOCAL GOVERNMENT SOLUTIONS

There are four common types of water rate structures: tiered rates, drought rates, water budget rates, and seasonal rates. These rate structures can be combined to create targeted tools for achieving water conservation.

#### 1. Tiered Rate Structures

To incentivize users to use less water, the price of water increases the more water is used. *For example, the first 10,000 gallons used could cost $1.00/1,000 gallons while the second 10,000 gallons used could cost $2.00/1,000 gallons.*

#### 2. Drought Rate Structures

The price for water fluctuates depending on a region's drought stage. The more serious a drought the region is in, the more water costs. This ensures that the price of water reflects the increased value of water when supplies are low.

#### 3. Water Budget Rate Structures

Properties get a certain allotment of water. If users go over their monthly budget, they are charged more per unit of water. This reduces water use above an amount determined to be sustainable by the municipality.

#### 4. Seasonal Rate Structures

Seasonal rates adjust pricing to manage peak demand, typically with higher summer rates during irrigation season and lower winter rates. *Salt Lake City for example, combines the tiered rate structure with the seasonal rate structure for a four-tier "conservation rate structure"* during peak months (April-October), with all winter usage (November-March) billed at the base tier rate.

### SARATOGA SPRINGS, UTAH

To keep water use in check, Saratoga Springs has given each water user a water budget. Water rates changed as users exceeded budgets.

*After going into effect, residents cut their summer water use by*

**22%** in June **19%** July **10%** August

*compared to their usage during the prior year.*

*Effective water pricing sends a signal that causes users to conserve water.*

# Water Conservation Can Generate Revenue for the City

- Individual water conservation efforts gave the Salt Lake City and Sandy Metro Water District an extra 2,500 acre feet of water that they are now leasing back to the Great Salt Lake.
- Improves lake conditions.  Provides long term lasting impact.
- Generates $1 Million in extra revenue for the city each year over the next 10 years.
- Prioritize low hanging fruit - prohibit non-active use turf in ALL new developments and major redevelopments.  It's likely coming anyway.
- City should prioritize removing non-active use turf areas and replace with natural and local water efficient plants.  Cement, zero or xeri-scape park strips.


Thank you for your time!