

Utah's Regional M&I Water Conservation Goals

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Prepared for:



Prepared by:



EXECUTIVE SUMMARY

Utah's Regional M&I Water Conservation Goals

PURPOSE

This project recommends regional goals and practices for municipal and industrial (M&I) water conservation. M&I includes residential, commercial, institutional (e.g., schools and parks), and industrial water use, and excludes agriculture, mining, aquaculture, and power generation. The project does not recommend a comprehensive water strategy.

PROGRESS TOWARD STATEWIDE GOAL

Utah's statewide water conservation goal has been "25% by 2025," that is, to reduce per-capita M&I water use by 25% when starting at the value estimated for 2000. Thanks to the efforts of many Utahns and their water providers, 2015 M&I per capita water use declined by at least 18% since then. Annual reporting from many individual water suppliers confirms significant progress in water conservation. According to the state's most recent data, the 2015 statewide M&I water use estimate is about 240 gallons per capita per day (gpcd). Water suppliers and users alike are commended for their efforts to reduce water use.

NEED FOR REGIONAL GOALS

While this progress is excellent, the continued growth and demand for water is not stopping. Both water conservation and development of new supplies will be necessary to meet Utah's long-term water needs. The next step—and one recommended by a legislative audit (no. 2015-01) and the *Recommended State Water Strategy*—is a suite of regional M&I water conservation goals that consider the various climates, populations, and water use practices in different parts of the state. These goals will guide the state's water industry in planning future infrastructure, policies, and programs consistent with Utah's semiarid climate and growing demand for water.

HIGHLIGHTS

- Regional M&I water conservation goals are recommended for 2030, and projections are given for 2040 and 2065.
- Utah's Municipal and industrial (M&I) per capita water use declined by at least 18% from 2000 to 2015.
- Considered together, the 2030 regional goals constitute a 16% reduction in per capita use from the new 2015 baseline.
- Several water conservation practices are recommended to help achieve the goals.
- Implementation will be an immense effort requiring funding and engagement from all Utahns.

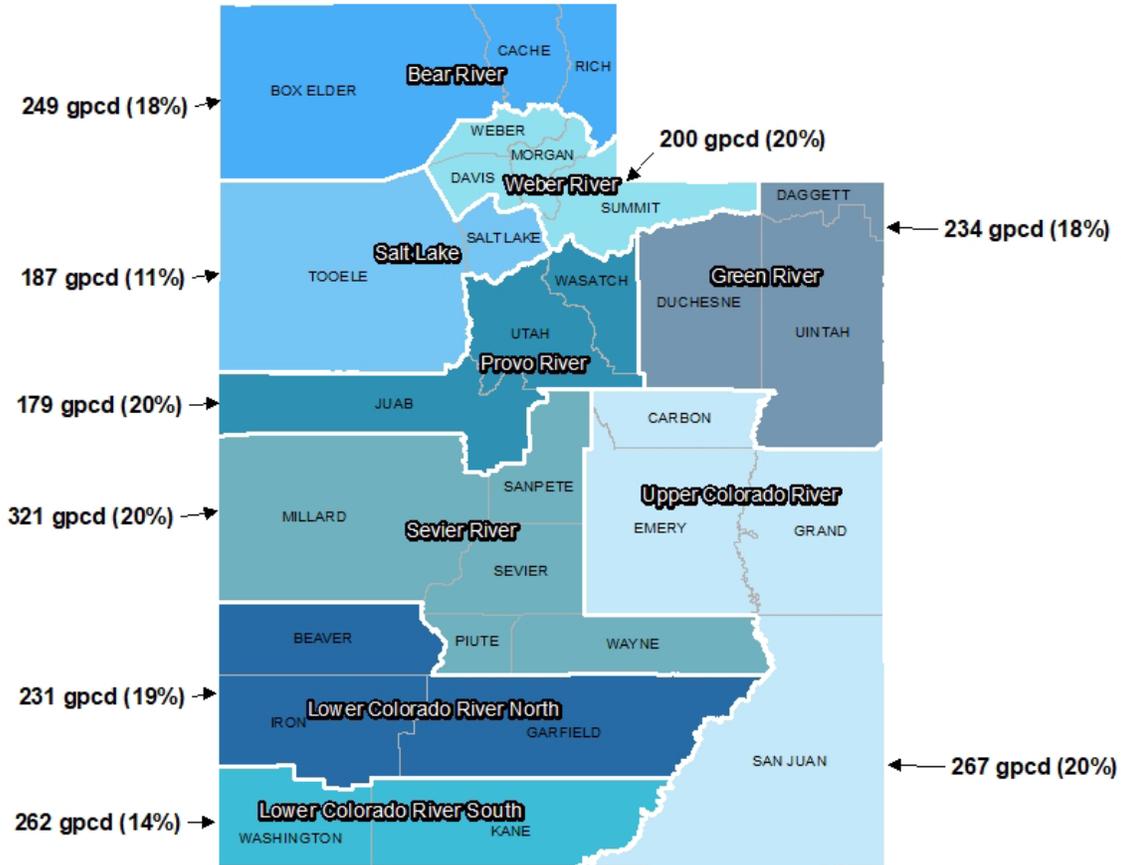
APPROACH

Recognizing its potential impact on Utahns, the project began with a large public involvement effort. An online survey collected information about water use awareness, attitudes, and opportunities from a broad audience, while a series of public open houses and interviews with key stakeholders provided more in-depth insight into the important issues. Early draft reports were circulated to several parties for review. The public process strongly affirmed the need for regional goals and guided the project team to data, perspective, and questions that improved the quality of the work.

Multiple factors were considered when determining regions, including data availability, number of regions, water use practices, similarity of climates, and the ability of the public to recognize the regions. Next, water conservation potential was developed for each region. Many variables were examined; the most influential were secondary metering, climate change, amount of turf on new properties, conversion of turf on existing properties, and conversion to high-efficiency fixtures and appliances. Scenarios were developed to characterize three levels of water conservation within each region. Water conservation practices were then evaluated on gross unit costs, potential for reducing water use, and public acceptance. Finally, combining all of these interdependent elements, the project team developed a timeline of regional water conservation goals and projections from the 2015 baseline year through 2065.

GOALS

Nine water conservation regions are proposed, along with a timeline of M&I water conservation goals and projections for each one. The 2030 values are recommended as the next goals for the State to pursue, while the 2040 and 2065 values are projected water use levels to inform future planning. Actual goals for 2040 will not be established until after evaluating progress toward the 2030 goal, and so on for future goals.



Proposed M&I Water Conservation Regions and 2030 Goals

Proposed Regional M&I 2030 Water Conservation Goals and Future Goal Projections

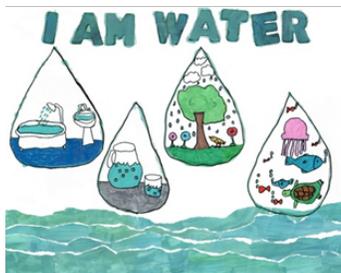
Region	2015 Baseline (gpcd)	2030 Goal		2040 Projection		2065 Projection	
		Goal (gpcd)	Reduction from 2015	Projection (gpcd)	Reduction from 2015	Projection (gpcd)	Reduction from 2015
Bear River	304	249	18%	232	24%	219	28%
Green River	284	234	18%	225	21%	225	21%
Lower Colorado River North	284	231	19%	216	24%	205	28%
Lower Colorado River South	305	262	14%	247	19%	237	22%
Provo River	222	179	20%	162	27%	152	32%
Salt Lake	210	187	11%	178	15%	169	19%
Sevier River	400	321	20%	301	25%	302	24%
Upper Colorado River	333	267	20%	251	25%	248	25%
Weber River	250	200	20%	184	26%	175	30%
Statewide	240	202	16%	188	22%	179	26%

Note M&I = municipal and industrial; gpcd = gallons per capita per day based on permanent population. Reported per-capita use includes all residential, commercial, institutional, and industrial uses averaged over the permanent population in each region.

In 2015, Utah's M&I water use was about 240 gpcd. When considering all regional results together, the resulting water use for the entire state is 202 gpcd by 2030 (16% reduction from 2015), 188 gpcd by 2040 (22% reduction from 2015), and 179 gpcd by 2065 (26% reduction from 2015). Meeting the initial 2030 goal will save nearly 165,000 acre-feet of water annually across the state.

PRACTICES

The following practices are recommended to help achieve the proposed regional M&I water conservation goals. Of necessity, these practices are limited to broad categories that may have different applications in different areas of the state. Local water suppliers, communities, and businesses are encouraged to adapt and refine these recommendations, as well as implement others, in their own water conservation efforts and in pursuit of the regional goals.



GENERAL

- **Water conservation education.** Continued emphasis and funding of education and outreach must be fundamental components of any water conservation plan.
- **Conservation pricing.** Financial impacts will help motivate water conservation. Important features are lowering base rates, increasing tiers for usage, reviewing funding sources, and using customer feedback technology.



INDOOR

- **Fixture conversion.** This will happen naturally with new construction and as old fixtures are replaced, but may be accelerated through incentives and policies.
- **Other measures.** Fixing indoor leaks and inspiring a change in indoor water use habits will reduce consumption.



OUTDOOR

- **Improved irrigation efficiency.** Secondary metering, smart irrigation controls, and drip irrigation systems will improve irrigation efficiency for any landscape.
- **Water-wise landscaping.** New construction can be water-wise from the beginning, while existing landscapes can be converted.
- **Lot size and density guidelines.** Smaller lot sizes and less irrigated area will reduce the amount of water needed outdoors in new developments.

Recommended M&I Water Conservation Practices

(Drawing at top by B. Banner from Salt Lake County)

COSTS

Achieving the goals identified in this report will require a major investment. As with past and current water conservation efforts, the costs are assumed to be borne by all Utahns; however, effective conservation strategies will closely connect water costs to water use.

IMPLEMENTATION

The pursuit of the regional M&I water conservation goals will be an endeavor of immense magnitude but is nonetheless worthwhile for the future of our state. By engaging all parts of our community—not just water suppliers—over extended time periods, this is a challenge we can meet. We can and must do better. Since changing water use behavior, policies, and technologies will become more difficult and expensive with time, prompt action on water conservation will bring the most benefit. A few starting actions are recommended here.

State and Local Policy Leaders

Policy plays a vital role in motivating and enabling water conservation. State, county, and local policy leaders should establish policies which require accountability for efficient water use. Policy leaders' support must consider universal metering, water loss control, education, and other water conservation activities, as well as the necessary funds for success. Policy leaders must also decide whether they are willing to support the necessary land use changes that will be required to reach the water conservation goals. This will include working with and being responsive to market forces to reduce both overall lot sizes for residential development and the amount of turf grass allowed. Water suppliers should be consulted in land-use decisions to ensure alignment with water conservation efforts. Policy leaders can set or influence the pricing of water to promote conservation and reflect the cost of water scarcity. State and local governments should consider the water use impacts of proposed businesses and their plans for water-efficient fixtures, landscaping, and operations before approving construction or incentives.

State Agencies

The Division of Water Resources and other state agencies should continue to support water suppliers' and end users' efforts by analyzing M&I water use data, administering funding programs, reviewing water conservation plans, and promoting education and outreach. It is recommended that the Division evaluate achievement of the 2030 goals and refine the 2040 and 2065 projections accordingly as new data, practices, and technologies develop.

Water Suppliers

Water suppliers have a public responsibility to provide sufficient, safe water to their customers and to carefully manage this invaluable resource. In fulfilling this responsibility, water suppliers are responsible for developing and implementing their own Water Conservation Plans that define local goals, practices, pricing, and accountability. This report recommends several practices which water suppliers may consider, supported by the other parties described here.

Water Users

The water conservation mindset begins with individual water users. By recognizing water as a limited resource and changing their water use practices accordingly, water users will directly impact the overall water situation and the achievement of the regional goals. All Utahns are encouraged to do their part in conserving water for Utah's future.