

## **Appendix I – Public Comments to the 2021 Water Resources Plan with Response to the Comment**

Dear Reader:

Thank you for participating in the public review process.

The Division of Water Resources (Division) is grateful that you have taken the time to review the draft 2021 Water Resources Plan (Plan), provided constructive comments, and care about water issues the state faces. You are aware of the difficulties of balancing a limited resource, a growing population, the environment, and the uncertainty of our changing climate.

The diverse perspectives provided by commenters are valued and appreciated by the Division. Actions in the 2021 Water Resources Plan are limited in scope to those actions the Division can control. Our influence is limited to the authorities granted to the Division by Utah law.

Two hundred seventy-four unique comments were submitted using the Public Comment Survey during the public comment period. All comments received using the Public Comment Survey are included below.

Duplicated comments in the survey are only presented once in this document.

The comments are listed under topic headings by the author's name with the comment following (e.g. John Doe: Comment). Some comments addressed multiple topics. Those comments are divided by topic and included under the relevant topic.

In addition to comments submitted using the Public Comment Survey, some comments were submitted or duplicated by correspondence with a state official. Those comments were also reviewed and considered. The complete correspondence is included in the Comments by Correspondence document (Appendix I).

The most frequently submitted comments are on Great Salt Lake/Bear River Development, water conservation, and Lake Powell Pipeline.

- 100+ comments on combined topics of Bear River Development, Bear River Development relative to impacts on Great Salt Lake, and Great Salt Lake
- 50+ comments on conservation
- ~25 comments on the Lake Powell Pipeline

The Plan is focused on actions the Division can take in the next five years. The Division has no authority over agricultural activities, water rights, local laws and ordinances, enforcement of laws, assessing penalties for non-compliance, or legislative funding. Accordingly, this Plan doesn't recommend actions outside the Division's authority.

Several comments promote specific products, organizations, or reading material. These comments are included in the comment document as they appeared in the submitted comment. Please note, inclusion of promotional material isn't an endorsement from the Division, and the Division does not promote or endorse specific products or industries.

The Division appreciates the time and consideration dedicated to review and constructive comments on the draft Plan. Although many comments were not specific to the Plan, the comments reflect a high level of interest and concern with water issues in Utah. The Division appreciates the perspectives and involvement of diverse people and organizations with a goal to address and resolve water concerns in Utah's future.

With gratitude,  
Candice Hasenyager, Director  
Utah Division of Water Resources

## Navigation Tips

Comments submitted on the 2021 Water Resources Plan have been sorted by topic. The Division of Water Resources has written responses to address comment topics. A response to each individual comment isn't provided.

Comments have been sorted in alphabetical order by topic. Background colors alternate to indicate a change in topic. A line border identifies subtopics with similar comments grouped together.

Comments which share one response are grouped with the response in **red text** before the group of comments. When a response to an individual comment is provided, it immediately follows the comment with an **\*** and **red text**.

You can search for comments using a **Find** feature (**Ctrl-F**). When the dialogue box opens, type a keyword or name in the window. If the word is found, use the up and down arrows to find the previous or next occurrence.

You can search for different key words, topics, or names by changing the text on the dialogue window. When finished with the search, click on the X to close the dialogue box.

## Association Backgrounds

**These notes provide background on entities providing comments. No change was made to the Plan in relation to these background descriptions.**

**League of Women Voters of Salt Lake (Jan Striefel):** The League of Women Voters is a nonpartisan political organization that encourages informed and active participation in government, works to increase understanding of major public policy issues, and influences public policy through education and advocacy. One of those issues is addressed in the League of Women Voters of Utah Water Study (September 2009) which addresses the full range of water issues and water sources in Utah. In light of our demonstrated interest, we have reviewed the Utah Water Resources Plan (September 2021) and have several comments which we submit for your consideration before finalizing the document. We are in general agreement with the strategies and recommendations in the plan, and applaud the Division's efforts to look at water comprehensively in Utah.

**National Audubon Society (Marcelle Shoop):** We appreciate the opportunity to submit comments to the Utah Division of Water Resources (DWR) concerning the Draft Water Resources Plan for the state of Utah. About Audubon and Interest in Water Resources in Utah Audubon's mission is to protect birds and the places they need to thrive today and tomorrow. Audubon works proactively with all stakeholders to ensure impacts to important avian habitats are avoided or minimized to the greatest extent possible. Water resources in the State of Utah are of great importance to Audubon. Riparian habitats like the forests and wetlands that line our rivers support some of the most abundant and diverse bird communities in the arid West. Wetland ecosystems, including reservoirs, marshes, and lakes like Utah Lake and Great Salt Lake support vast numbers of breeding and migratory waterfowl, shorebirds and other waterbirds. As an example, Great Salt Lake and its associated wetlands support over 10 million birds representing 338 species each year. Audubon in Utah has devoted considerable effort to working with state and federal agencies, private landowners, businesses, universities, other conservation organizations, water providers and users throughout the state to find solutions that work for both people and nature. I, as the Director of the Saline Lakes Program, also appreciate the prior opportunities I have had to provide input and comments as a member of the advisory committee and recognize the progress that has been made in the development of this draft plan.

**Sageland Collaborative's Stream & Riparian Restoration Program (Rose Smith):** Our mission is to provide data and science-based strategies to support wildlife and wildlands. Our Stream & Riparian Restoration Program monitors and restores streams across Utah using evidence-based methods.

**Simplyscapes (Scott Bradley):** Simplyscapes is a Utah-based tech startup. We will provide online landscape design software and personalized landscape design services to Utah residents in early 2022, then expand to other states. Our mission is to bring together homeowners and gardening professionals to create communities that are both beautiful and sustainable. See a short demo video at <https://youtu.be/EjwT2dNctYE>.

**Western Resource Advocates (Nick Schou):** WRA recognizes the critical role that Utah's Water Resources Plan (the Plan) will play in shaping water management priorities in the years to come and we commend the Division of Water Resources (DWR) for undertaking this important, collaborative Planning effort. There were many elements of the Plan that WRA was pleased to see included, notably, recognition of the water challenges Utah faces from climate change and intensified drought conditions, a state commitment to strong municipal water conservation measures and integrated water and land use planning efforts, an identified opportunity to expand water reuse, and an emphasis on watersheds and the importance of environmental flows. However, there were also elements of the

Plan that we believe included inaccurate information and data, topics that would benefit from more detailed explanation and measurable actions, and some important topics missing from the Plan. These elements, described in much more detail below, include such topics as: water supply and demand calculations, climate change assumptions, water conservation and reuse programs and policy opportunities, demand management program prioritization, Tribal water rights, and instream flow opportunities.

## Survey Comments

**General Response:** The Division of Water Resources designed the Public Comment Survey to solicit comments specific to 2021 Water Resources Plan content and topics. We recognize the format wasn't accommodating to long comments on current issues nor all Division programs. The Division will use a different approach to receive comments from the public in the future. No change was made to the Plan in response to these comments.

**David Rosenberg (Utah State University):** NOTE: This form does not allow submission of figures to support comments. I emailed water@utah.gov with the figure and fully copy of my comments: a) 9 strengths b) 7 suggested improvements c) 2 additional notes.

**Janice Gardner (Sageland Collaborative):** I appreciate the amount of work that goes into managing public scoping and comments. I understand the comment portal was crafted to categorized comments, however it is overly complicated and I find it discouraging to submit comments. Please note I am in favor of the comments provided in the letter submitted by FRIENDS of Great Salt Lake.

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** The Utah Division of Water Resources (UDWRe) has limited commenters to an on-line form and database structure. Navigating that form, however, is overly complex and limiting. Commenters must supply an email address, disclose any affiliation, and organize their comments by "General," "Formatting," or "Specific Content," or "Topical Areas." They must specify which chapter they're commenting on, and then have 10,000 characters for comments. The UDWRe basically wants to make it easier on themselves by forcing the public into a structured database with no publicized mechanism to accept comments in traditional forms, such as PDF documents. Graphic unaccepted by this website, illustrating failure of this approach to accept meaningful comments from the public.

## General Comments

**General Response:** All comments were reviewed and taken into consideration. Most comments in this section are general and didn't result in changes to the Plan. Where possible, changes were incorporated in the final Plan.

**Ashleigh Albrechtsen:** This plan should function as the roadmap for how the state will face an uncertain future, and as such it needs to be based in reality – and not myths or wishful thinking. The Division should be upfront with the public by acknowledging that we can't have it all and that hard choices will have to be made. A plan based on myths and wishful thinking is merely a fantasy, and while fantasies can be comforting, real life plans based on fantasies lead to disasters.

**Barbara Glines:** I think we all can or should agree that the welfare of the general population's drinking water should be of primary concern.

**Chad Spector:** It comes as no surprise that the WRP takes such a myopic view of the future of water in SW Utah, yet the incessant drumbeat towards the inevitable is nevertheless still disappointing given the bleak outlook. When will we realize that growing sod and pecans in the desert is something that can no longer be tolerated? When will we realize that using our water to grow feed for livestock is not sustainable? When will we realize that building a multi billion dollar straw to suck water out an empty container is simply not viable? Unfortunately the answer appears to be stuck on stupid as our leaders continue to believe that divine intervention will deliver the water they need while taking no steps towards curbing waste, use or growth. Time to sell my real estate and get out of here before this charade comes crashing down and the residents of Washington and Iron Counties get stuck holding the bag for your ignorant hubris.

**Chelsea Hafer:** Please protect the air quality in Utah. We cannot lower the water level from the lake any more, as it will submit Utah's air quality to even more dust and toxic materials. It is also vital that we protect the micro biome in the lake. The repercussions of this plan will be tremendously dangerous to human and environmental health, and there are still many potential unforeseen consequences. Please protect Utahns and alter this plan to take our futures into consideration. This plan is dangerous and does not have our best interest in mind.

**Dan Watt (Water for the West LLC):** Thanks for all the work put into this document, now we need to think differently to address our future and the growth we would like to see.

**David Rosenberg (Utah State University):** Change the infographic on p. 35 to correctly represent water use in Washington County. This infographic says a person only uses 15 gallons per day. The UDWR data show St. George and Hurricane use more than 300 gallons per person per day (Figure 1). *\*Based on this comment and others, it was apparent the graphic raised more questions than it answered This infographic has been removed from the Plan.*

**David Rosenberg (Utah State University):** For the first time, the plan acknowledges uncertainty in two factors that have a large impact on demand forecasts (Figure 6-2). The uncertain factors are: Per-capita water use. This uncertainty is represented by three scenarios that differ in: No change: 2015 rates of use, no climate change. Baseline: 2019 conservation practices continued, partial conversion to more efficient household appliances and landscapes, climate change. Regional water conservation goals: meet state's regional conservation goals that vary from 11% to 20% reductions and climate change. Agricultural to urban conversions. Low and high rates. Acknowledging this uncertainty is important. We do not know what future demand will be. We need to plan for different scenarios. And many future demand scenarios stay within the available supply – they do not require Bear River or other development.

The state's demand model is expanded to include 9 factors of household size, net evapotranspiration, lot size, green space, home type, commercial industrial, institutional use, population, sprinkler efficiency, and climate change. Each factor is qualitatively described.

I was excited to see the plan state that Bear River development is not needed for 30 years or longer. This statement allows state water planning efforts to focus on efforts that deliver water sooner, at lower cost, with fewer environmental impacts, and are less controversial. These efforts include water conservation, water banking, aquifer storage and recovery, and agricultural water use efficiency.

**Douglas Fox:** Utah needs more Reservoirs. Unfortunately those that I have heard about failed Environmental impact study approval. Until such time as our water retention capacity is increased substantially, All new Construction should be stopped. Also, what has happened to Cloud seeding? Has there been issues or restrictions placed on that as well? We need lots of water and Layered Snow to bring aquifer levels back up to adequate amount before new Construction should be allowed. With some long term residents, telling us to stop watering lawns so another 300 toilets can flush is not going well. Also, even the Governor will not touch this as I emailed him back in June about it with Zero Response. Seems like Utah Politics will sell everyone's soul for the almighty dollar. Enough said, I am just totally frustrated at the true lack of concern over water enough for Residents. Imagine what will happen if we turn our taps on and there is no water! You though Covid was Bad, people will be ready to start looking for all water to hoard.

**E. Amriott:** Do we anticipate expanded resources from the recently passed federal infrastructure bill? Does this plan need to be adapted to include those resources? *\*The Division of Water Resources (Division) received additional funds from the 2021 American Rescue Plan Act (ARPA). Those funds will be used to augment existing programs, such as metering of secondary water. No change was made to the Plan in response to this comment.*

**E. Amriott:** Does this reflect limits on what the DNR can enact (e.g. is DNR restricted without additional legislative or regional gov't action)? *\*Yes, the actions detailed in this plan are limited to actions the Division can accomplish without consensus from other entities, changes in funding, or changes to existing laws. The Division doesn't have authority to enforce ordinances or laws. Several comments recommended the Division mandate actions. The Division doesn't have authority to mandate actions to be taken by the public, a water provider, a county, a community, a municipality, nor the legislature. Although the Division doesn't mandate action, the content of the "mandate" comments is being considered by the Division.*

**E. Amriott:** not much or details in the plan - or estimates of what the content of the plan will achieve (or what the timeframe for the plan is).

**E. Amriott:** pg 45 link to drought mitigation plans gives an error. Please add a link for HCR10 in Chapter 9. *\*Broken links in the Plan have been corrected. Thank you for bringing these to our attention.*

**E. Amriott:** What/who is Prepare60 and are there other entities advising Utah's legislature? *\*Prepare 60 is a center established by the four largest water conservancy districts (WCD), Weber Basin Water Conservancy District, Jordan Valley WCD, Central Utah WCD, and Washington County WCD, in Utah. Information about Prepare 60 can be found on the Prepare 60 website at: <http://prepare60.com/>. No change was made to the Plan in response to this comment.*

**Eileen Hilton:** Given the urgency of our situation and the big picture (beyond water), we need the Utah Division of Water Resources to think big, and think outside the box. Multiple agencies, and our legislature, need to work together to take big steps.

**Eric Sorensen (Metropolitan Water District of Salt Lake & Sandy):** Page 23 – In the last bullet point in the Chapter Highlights table the word “available” is misspelled. \*This typographical error as well as several other errors were corrected.

**Ingrid Akerblom:** The WRP must place more attention on how to educate, inspire, incentivize the public with water conservation practices along with implementing and enforcing crucial conservation policies. The state is facing a water crisis, and citizens need to know what they can do individually to make a difference. Utah citizens deserve a statewide plan for how Utahns will successfully manage our current water resources and develop a vibrant economy without taking more water from the Colorado River.

**Kelly Hannah:** Thank you for the opportunity to comment on the 2021 Draft Water Resources Plan. I appreciate your diligent efforts in the drafting of this document, your navigation of extremely complex issues and the attention to detail throughout. Indeed, this may be one of our state’s most important guiding documents as we strive to find balance without our most precious natural resource, water.... thank you once again for your work putting together this critical document. Numbers matter. Words matter. Pictures matter. Let’s be accurate through them all!

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** Page 25: Graphic 3-1 is confusing. Would it be possible to present this information in a different way? A written explanation of the information may be clearer, particularly if an example is used to illustrate how reliable water sources are quantified.

Page 27: “Assumed” secondary water supply and potable reliable supply are added together to determine total reliable supply. We recognize that some assumptions are necessary for determining water supply and use. However, the state should be working toward more accurate quantification of supply and use from every source. \*The Division's first choice for reliable supply data is to obtain it from the water provider. In cases when the Division needs to estimate reliable supply because we weren't able to obtain it from a water provider, we research data provided to the Division of Water Rights. Graphic 3-1 is illustrating that the Division takes more than one step to estimate reliable supply. We are taking these comments into consideration; however, no change was made to the Plan before publication.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** Page 30: Graphic 3-3 is misleading in several respects. If it is intended to represent the larger hydrologic cycle, then the use side should include evapotranspiration from all land surfaces, natural water bodies, and storage reservoirs and not just evaporation from the Great Salt Lake. It should also include the industrial use not included in M&I systems from Table 2-2. More useful for a state water management document might be the supplies of water legally available to humans under state law and the uses for which people claim rights and access and put water to beneficial use. This is the actual water that the state seeks to manage in order to bring supplies and demands into alignment for future planning purposes, and it includes water rights and uses that the rest of the document focuses on. As it stands, the figure is an odd hybrid and the point of including it is unclear. \*We are taking this comment into consideration; however, no change was made to the Plan before publication.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** Pages 32-33: We strongly support the evaluation of existing stream gage and weather station networks in the state to determine where additional resources are needed.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** We appreciate the inclusion of important information that helps to put the State Water Resources Plan into a larger geographic and temporal context in this chapter. It presents information on water law and the expectations that it has established for people’s ability to develop and access water. It reviews the multiple and competing claims on water from state water law, interstate compacts, and other aspects of “the law of the river” for various rivers throughout the state. It is in this section that the flaw in not including physical water availability and how climate change is impacting it as one of the constraints in Chapter 3 comes into full view.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** We recommend removal of the Prepare60 information included in the Plan as it “only considers M&I water and excludes stormwater, wastewater, and agricultural needs” which certainly must be considered as part of the state’s Water Plan.

**Lindsey Hutchison (Utah Rivers Council):** Utah Rivers Council has reviewed the Division of Water Resource’s Draft Water Resources Plan and finds it to have some significant defects. The Division is not recognizing the reality of Utah’s water situation and appears to be more focused on building new infrastructure than meaningful conservation efforts. Throughout the Plan, the Division’s objectives surrounding new infrastructure projects are

clearly outlined and have set goals, while the conservation plans are more general without specific goals. This comment letter will go over six areas of concern: the Division's inability to admit that Utah is one of the largest water users in the United States; the effect climate change has, and will continue to have, on the Colorado River System; the Division's ineffective conservation efforts; the Division's focus on destructive new development, including a section on the Pine Valley Project and a section on the Lake Powell Pipeline; and the Division's mixed messages surrounding Great Salt Lake priorities.

**Lisa Rutherford & Paul Van Dam:** We appreciate the effort that has gone into this Water Resources Plan (Plan) and commend the Utah Division of Natural Resources for all that is being done to help protect our water resources and communicate with the public. It's obvious that a lot of work went into this effort. But that does not mean that the contents of this Plan are what the public deserves. The document makes it clear that "this plan is not a drought response plan." But that is exactly what we need. In fact, rather than a "drought response" plan we need an "aridification response" plan because that is what is happening and is predicted for our state and particularly our area in southern Utah.

**Lynn de Freitas (Friends of Great Salt Lake):** ....there are some obvious inconsistencies in the Division's approach to the very real choices that will have to be made in the face of climate change and the impacts that climate change will have on the future of our water supply. This plan should function as the roadmap for how the state will face an uncertain future, and as such it needs to be based in reality – and not myths or wishful thinking.

The Division should be upfront with the public by acknowledging that we can't have it all and that hard choices will have to be made. A plan based on myths and wishful thinking is merely a fantasy, and while fantasies can be comforting, real life plans based on fantasies lead to disasters. With that in mind, we would like to offer some high-level criticisms of the Division's approach in its plan.

**Marcelle Shoop (National Audubon Society):** Page 17 – The following two sentences are not complete sentences and the point being made could use further clarification: "For example, the city of St. George compared to the entire state of Nevada or New Mexico. Or the State of Utah compared to cities such as Tucson, Las Vegas, and Albuquerque."

**Marcelle Shoop (National Audubon Society):** The National Audubon Society appreciates the approach taken by the Utah Division of Water Resources (Division) to develop a new type of water plan that includes focused goals and recommendations. We also understand that this plan is specifically a plan of the Division of Water Resources and that other state agencies also have priorities and focus areas for water in relationship to their specific statutory charges, and that the coordination of the various priorities of different agencies is part of another governmental coordination process through the Governor's Office of Budget and Planning (GOBP). The need for coordinating across government agencies is extremely important, as is the need for each agency to focus on its statutory directives in implementing those focus areas. We hope to see these coordination efforts benefit the environment and needs of wildlife and natural processes as well as the needs of people. **\*Coordination between state agencies is improving. It will continue to require a conscious effort from within each agency to be productive. This Division is committed to that effort to better inform the work we do. No change was made to the Plan in response to this comment.**

**Marcelle Shoop (National Audubon Society):** With respect to the Division's specific recommendations and goal setting, we urge the Division to provide an annual update describing progress on the goals and recommendations. The recommendations and goals will be strengthened if the Division can also set some clear and reasonable timelines for implementation. The Division should also consider to what the extent implementation is hampered by limitations on staffing or other agency resources, and how those constraints will affect implementation and whether additional resources are required. **\*We agree: Tracking progress toward meeting goals is valuable information. This recommendation is being considered for implementation on the 2021 Water Plan page of the Division's website. No change was made to the Plan prior to publication.**

**MaryAnne Russell:** This plan should focus on how to navigate uncertain and unprecedented futures. We are facing a climate crisis, with more frequent and more severe droughts expected.

**Megan Nelson (The Nature Conservancy):** Goals/Recommendations wording throughout the document are not consistent. For example, Table 1-1 is not consistent with all of the recommendations or the restatement of recommendations in Chapter 10. **\*Goal statements were changed to be consistent throughout the document.**

**Natejije Hamilton:** Please stop funneling money into water projects instead of limiting growth, conserving water, charging the public more for using/ wasting a precious resource. Don't fill us full of propaganda about need for more expensive and environment ruining water projects.

**Nick Schou (Western Resource Advocates):** Improve Calculating Water Use (p. 19) - WRA recommends removing Washington County Water Conservancy District's graphic around calculating per capita water use. The graphic contains numerous errors. For example, the explanation provided for the first GPCD calculation method is inaccurate as it only provides an example for a 1-person household and neglects to mention that this number will average out when accounting for larger households. This graphic likely will be interpreted by readers as a state resource, so we encourage DWR to ensure that all state-sanctioned materials are held to a high standard of accuracy and reliability. *\*This page was removed in response to comments.*

**Richard Spotts:** I believe that there is a "credibility gap" in Utah when it comes to water issues. When relevant experts provide positive recommendations for necessary water reforms they tend to be ignored or given short shrift by Utah's generally regressive political leaders. On the one hand, the experts recognize that solving water problems requires exploring all feasible demand and supply side opportunities, and evaluating them objectively in terms of their relative costs, risks, and benefits. On the other hand, many Utah politicians primarily focus on large, expensive, and risky supply side projects like the proposed Bear River Development and Lake Powell Pipeline. They waste limited public dollars chasing these supply-side traditional projects while obvious demand side remedies receive inadequate support. Worsening climate change and the mega drought are only amplifying the danger from Utah politicians' myopic bias. The best final WRP won't have much practical traction in the real world if this political bias remains dominant. Unfortunately, I did not see anything in the WRP that may help to close this "credibility gap" between what the experts recommend versus what the politicians do. In the WRP itself, this "credibility gap" creates inherent conflicts in the recommendations. Perhaps the experts must figuratively bow to the politics.

I hope that my comments are helpful. I wish you every success in your work to address Utah water needs in an objective, scientific, and sustainable manner. Thank you very much for your consideration.

**Richard Spotts:** This recommendation from the State Water Strategy team's July of 2017 50-year water plan that is in Envision Utah's water report still remains timely and appropriate: "Provide adequate funding and investments for effective water efficiency and conservation. Funding and investments are needed to fully realize the potential contributions and return on investment that water efficiency and conservation efforts can make to provide for Utah's water future. Water agencies should budget for water conservation programs similarly to how they budget to develop new water supplies. Funding for conservation measures also should be made available on an ongoing basis. Investments should be made in water demand management infrastructure to measure, track, report, and implement efficiency standards. Needed resources also include agency staffing and budgeting to better integrate conservation into water systems, enhance ongoing interactions with the public, deliver conservation programs, and conduct research and evaluation. Many different states, regional, and local entities can help promote water conservation, so funding and resources from multiple sources need to be allocated to these efforts. Ongoing and sufficient support for water efficiency and conservation should be prioritized and forthcoming to make these efforts effective at contributing to Utah's water future." *\*Each year the Division director prepares a budget request which is included in the Department of Natural Resources budget. The budget request is sent to the Governor's office and the Utah legislature for consideration. The legislature appropriates funding for Division programs.*

**Steve Erickson:** I recognize that the Division (DWRe) is constrained in its ability to implement major changes in water systems and practices, in state and local government policy choices, and in funding for actions. This can be reason to limit options and recommendations, to stay within prescribed parameters. Or it can be seen as an opportunity to stretch the vision for future change. The draft plan leans too much to the former. DWRe should seize the chance to really lead and educate, not to revert to bureaucratic norms.

The underlying problems here are the continued support and funding by the political establishment – and the Division - for the Lake Powell Pipeline and Bear River Development, and the underestimation of the severity of climate change. These stances undermine the credibility of and trust in the DWRe's recommendations to work cooperatively with the other Compact states to address drought and climate change-driven shortages on the Colorado River system, and to keep Great Salt Lake great and get more water to the lake.

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** This "Plan" is not really a plan; it's missing measurable objectives and mileposts for implementation, an assessment of alternatives, or any process for evaluation.

The Plan is to be commended for recognizing that there isn't any one simple fix for addressing consumption by Utah's burgeoning population. It recognizes a need for a comprehensive approach, involving "water conservation, water development, conversion of agricultural water to municipal and industrial water uses as agricultural land transitions to urban uses, agricultural water use optimization, and a combination of other innovative water management strategies such as water reuse, aquifer storage and recovery, and water banking."

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** The Plan's presentation is overwhelmed by pretty pictures, ostensibly to satisfy the cursory reader, but data on many aspects is lacking....The "Plan" appears to be basically a cover for politicians and land developers who want easy and endless growth.

## Agriculture

**Allen James:** On graphic 3-2 it is claimed that 79% of diverted water is used by agriculture and that 65% of this is depleted leading to  $(0.65 \times 0.79 \times 100 =)$  51% of diverted water being depleted by agriculture. This is equivalent to  $(4,751,000 \times 0.51 =)$  2,423,010 acre feet, or  $(2,423,010 / 2,957,000 \times 100 =)$  82% of all water lost by diversion. For reference 2,423,010 acre-feet is = 789,500,000,000 gallons, and with the population of Utah being 3,200,000 that is  $(789,500,000,000 / 3,200,000) / (365) = 676$  gallons per person per day lost, compare this to figure 2-4 claiming that 239 gallons per capita per day is used for municipal and industrial use. There seems to be something going on here as it would appear at a casual glance that the water lost to agriculture is nearly 3x the water used by all municipal and industrial reporting agencies use (not depletions). This would lead one to believe that focusing on reducing this large loss would be a area of high interest and returns for the state as is shown in graphic 3-3. Where is this water actually ending up? What crops are being grown to justify this enormous use of water in the state? Where are these crops going? Why is this not the focus of reducing water use in the state given the current drought? The fact that the usage in chapter 2 is in gallons per capita per day and the water supply is given in acre-feet per year is also obfuscating and I could recommend having at a minimum a equal unit comparison so these volumes can be compared in a meaningful way without needing unit conversions. **\*Agricultural water use isn't "public" water provided by public water systems. Agricultural water is a separate category of water use and is tracked differently than water provided by public water systems. Differences between water categories was a common theme in comments to the Plan. The Division is writing a white paper to explain water categories and their uses. No change was made to the Plan in response to these comments.**

**General Response:** Agricultural water is separate from municipal and industrial water provided by public water providers. It is used to produce a commercial plant product or animal product. Typically, water rights used for agriculture are privately held. Annually, the Division conducts a land use survey, including agricultural land use. The Board of Water Resources works with private irrigation companies to provide loans for agricultural irrigation improvements. Beyond those activities, the Division doesn't have authority regarding agricultural water use. No changes were made in the Plan in response to these comments.

**Cheri I.:** Agriculture and farming is still very important, as this supplies food for us. There still needs to be a mix of agriculture and farming land available as this is what supplies our food, which is a basic need and water is important to this industry. I'm concerned that the agriculture and farming land will be converted to residential and commercial and we need this land to survive.

**Dan Watt (Water for the West LLC):** ...we need to attack conservation where the majority of the water is being used. Currently, as you know that is with agriculture. 70% of our water goes to agriculture, so conserving on the domestic front, moving to highdensity housing alone is not going to solve our water shortages, yet the document states it is the solution. Farms in the west are being shut down because farmers can no longer make money or are denied water completely. Utah is following in their (California's) footsteps. Farmers are calling it quits in Utah because of water.

**Eileen Hilton:** While continuing our conservation efforts with homes and businesses (and there is plenty of room for improvement there), why aren't we focusing more on agriculture, where approximately 75% of our water usage goes? Chapter 7, on agriculture, did have a line stating "Selecting a crop that has a lower water demand" is one of our options. The USU Extension states: "Alfalfa is the most important crop in Utah, both in terms of acreage and revenue." Alfalfa is also one of the most water-intensive crops, and is largely used for dairy and beef cattle. We know that cows are problematic for the environment (water usage, methane emissions, carbon footprint to transport products, etc.) Spend money now to offer farmers an incentive to move their alfalfa crops to crops using far less water. Provide a disincentive for exporting alfalfa/hay. Surveys show that Utahns want farms and orchards to remain; we want food grown close to us (I don't see alfalfa in that category). Spend money now to offer ranchers an incentive to stop raising dairy and beef cattle. If we can slash the amount of alfalfa grown and the number of dairy and beef cattle, we'll slash the amount of water being used (and see other environmental improvements). The market would react with higher prices and many would complain, but it's the right thing to do, even if it's not the easy thing to do. We can figure out a way to ensure farmers and ranchers aren't the ones paying the price (literally) while doing what is best for the state as a whole. I hope this is something being considered at the state level.

**Erin Smeeding:** Incentivize agricultural water users to conserve.

**James Tetton:** I have no agriculture experience or direct knowledge. I have observed that irrigation is the most wasteful of all water supply systems. In Denmark they have converted many vegetable fields into greenhouses that reduce water consumption up to 90% and can produce year round. I know not all crops can be produced this way. Irrigation is the only way that is more labor efficient for some crops. But if drought tolerant crops such as quinoa that is a high source of protein it can also serve the other purpose of regenerating nutrients in the soil. This reduces



the runoff full of fertilizer that produces algae in the lakes and streams. Also, crop rotation is the best way to revitalize the soil without having to use fertilizers, insecticides and pesticides that devastate the insects that so many birds and animals survive on. It used to be you could drive by a field and the car windshield would be the demise of several insects. Now days you drive by a field and you are lucky to get one. Last year a report of over 1 million birds dropped dead from the sky because they could not eat enough before the migration.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** We appreciate the state-level efforts to prioritize agricultural water use optimization in its planning efforts, particularly since this sector accounts for 75% of diverted water in Utah. We also support funding for demonstration projects, canal company conveyance system improvements, on-farm improvements, and metering and distribution infrastructure to secure, track, and document agricultural water savings.

**Lisa Rutherford & Paul Van Dam:** The Plan notes that "Over the last few years, the state has invested approximately \$7.3 million in agricultural optimization research and projects. Continued investment will help the state evaluate ways to improve agricultural water use practices, create benefits for farmers, optimize water use, and protect water quantity and quality for all uses in the system." However, studies have shown that optimizing water use on an agricultural area saves money and water, but in some cases just makes the remaining water used on additional agricultural area to maximize profits. This must be addressed. An article provided in the Science Daily revealed: In a paper in Environmental Research Letters, the international research team reviewed more than 200 supporting research articles and found technology adoption as a water-saving method for improving irrigation efficiency is ineffective, and can actually worsen water scarcity. "This is because, while water may be saved per hectare on a farm, it typically encourages taking those water savings and putting them back into production, thus there are no 'savings' from the total water use equation," said co-author Adam Loch, Associate Professor at the University of Adelaide's Centre for Global Food and Resources. Water-use efficiency investments can actually increase local water consumption and contribute to aquifer depletion. If agricultural users are left with a "use it, or lose it" system, this will undoubtedly be the result. **\*Although the Division doesn't have authority to oversee agricultural water use, we are very conscious of the complexities and cascading impacts of changing water uses. We continue to research, learn, and refine our modelling to reflect the relationship between water uses. No change was made to the Plan in response to this comment.**

**Lisa Rutherford & Paul Van Dam:** On the 2019 Utah Agricultural Statistics and Annual Summary Report Utah Department of Agriculture and Food there is a chart titled County Estimates: Select Items & Years – Utah where counties are listed along with their irrigated acres. Class 3-6 counties make up 80% of the irrigated land in Utah: 876,824 acres of Utah's total 1,097,219 acres irrigated land. That is a lot of land to exempt from secondary metering when the problem of knowing how much secondary water is being used has been hanging over our head for these twenty-one years of drought. Add to that the exemption of towns such as LaVerkin in Class 2 Washington County and perhaps many others in Class 1 or 2 counties, and it seems the state has missed an opportunity to really make a difference in metering secondary water accurately. **\*The Secondary Metering Act is specific to secondary water for municipal and industrial use. The Division doesn't have authority to expand the application of the Act to agricultural water use. No change was made to the Plan in response to this comment.**

**Megan Nelson (The Nature Conservancy):** The co-benefits of keeping water use in agriculture to the environment should be discussed. **\*This is a topic that may be researched in the future. At this time, no change was made to the Plan in response to this comment.**

**General Response:** Annually, the Division conducts a land use survey, including agricultural land use. The Board of Water Resources works with private irrigation companies to provide loans for agricultural irrigation improvements. Beyond those activities, the Division doesn't have authority regarding agricultural water use. **No changes were made in the Plan in response to these comments.**

**Nick Schou (Western Resource Advocates):** Agricultural optimization funding for exploration of alternative transfer methods (pg. 62)– Utah should earmark some of the \$7.3 million in dedicated funding for agricultural optimization research and projects to explore the opportunity for creating alternative transfer method agreements. These are flexible and temporary water sharing agreements that can support the water demands of municipal, environmental and other users while preventing buy-and-dry. Funds could be used for regulatory research, demonstration projects, developing a water bank, and/or administrative costs.

**Nobel Keck:** Why don't you limit the amount of Alfalfa grown to be exported outside the State, alfalfa needs 4.18 acre Ft. to be raised, excessive.

**Richard Gorton:** As a resident of Iron county, I am amazed our alfalfa farms pump ground water 24/7 without regard to our future. Although the aquifer is large it continues to drop. We survive on a well ourselves and fear one of these days it will dry up. State water resources must begin to regulate unabated water use for alfalfa just

because they can. They farmers do not take into account how their unabated use impacts the rest of us including Washington. I do not deny someone making a living, but over use is being greedy and foolhardy; eventually this ground water resource will come to an end. Loss of these aquifers create other issues such as sink-holes, ground subsidence, earthquakes, among other geological impacts. I haven't read the draft in its entirety, but am passionate about everyone having a future with water.

**Paul Burnett (Trout Unlimited):** PG 107 Our general comments about agricultural water mirror those of outdoor water use in municipal areas. Water that is already in use is more difficult and expensive to change than water that has not yet been developed. Although on-farm and conveyance optimization projects are beneficial, a key missing strategy is incentivizing markets for lower water-consumption crops such as grains. The market currently favors alfalfa because it is profitable to produce and the water is cheap. Crop change incentives and investments in locally-consumed agricultural products will keep the agricultural products local and increase the public support for agriculture. This chapter treats all agriculture the same, when some farmland is more productive than others.

A drought early warning system that identifies marginal agricultural land could provide water during drought periods. Marginal acreage could be temporarily retired through demand management or drought contingency plans.

## Agriculture – Conversion

**General Response:** Projecting conversion of agricultural land to M&I use is as much an art as it is based on science. The Division used a consistent methodology to estimate agricultural land to M&I use cross all areas of the state. However, the estimates are dependent on factors unique to each basin. The Division's method takes into consideration projected growth in an area, agriculture land with water rights near a population center, and market considerations which make a land sale attractive. Each of these factors has an element of error associated with the base assumptions. Obviously, assumptions used for the LPP DEIS were different than assumptions used by the Division for this Plan. The Division acknowledges that our methodology is based on assumptions and can be improved. We are working to refine our methodology and improve the estimate results.

**Glenn Robinson:** The Agriculture to M&I Conversion Model is seriously flawed. The words market, price and sale are absent in the text not only of this chapter but are scarce or missing throughout the entire draft plan. Instead we see words like transfer and conversion. Rather than a model where price is determined by the intersection of a supply curve and a demand curve as in Economics 101 we see a model where water moves from Agriculture to M&I only when underlying land is developed and the move is assumed to be one way and permanent. Both of these assumptions are flawed. At the appropriate price and with the appropriate regulatory and market mechanisms and infrastructure in place, water in Utah would move dynamically between Agricultural and other users within each basin or interconnected region as needed. The objective function should be to allow water to be find its highest and best use as determined by the price buyers are willing to pay and sellers willing to accept. Water demand and supply both fluctuate dynamically and dramatically based on weather and other factors. Agriculture users would willingly sell water when it was more beneficial to them than using it to grow crops, and they have the additional option to grow less water intensive crops. Water would be available for agricultural uses when abundant water is available. Other arid countries have developed just such an efficient market system. For example, the Murray River Basin of Australia has dynamic sales of water between owners and users of all types with dramatically fluctuating prices based on supply and demand conditions, allowing water to flow to its highest and best use as defined by price. Governor Cox frequently and appropriately extols the virtues of competitive markets and the free enterprise system. These concepts are almost entirely missing in this plan. Rather we see statements like "Water development decisions should be made using the best science, engineering, data, system management, and accounting practices." I lived in Russia for a year. I had an economist friend who had worked as a central planner building models during Soviet Union times. She had real nostalgia for a time in her life when she was paid an attractive salary to use tools like "the best science, engineering, data, system management, and accounting practices" to plan resource allocation for the central government. This was the best that could be done since competitive markets were not part of the system. In hindsight it did not work very well for the Soviet Union. We can do better.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** We support continued efforts toward agricultural water use optimization and recognize the important role that agriculture plays in the state's economy and quality of life. We also recognize the reality of the market-driven inevitability of agricultural land conversion that has been happening for a long time, and the right of agricultural producers to decide to sell their land and water rights. We think that the water transferred from agriculture to M&I use in these conversions has been greatly underestimated for the contributions it will make to future M&I supplies.

**Lisa Rutherford & Paul Van Dam:** Regarding agricultural land conversions to M&I use from 2020 through 2070, Table 6-2 shows "Potential Conversion from Agricultural to Municipal and Industrial (M&I) Use" with a low range and a high range. Table 6-2 shows Washington County with a potential of 6,900 af (high range) conversion of Ag to M&I. However, the state and district's information concerning future AG water conversions for development shows 10,080 afy. How do you explain the discrepancy between these two numbers? Table 4.2-2 Local Planned Projects

by Washington County Water Conservancy District from the June 2020 Lake Powell Pipeline Project Appendix B: Purpose and Need Report shows the 10,080 Agricultural Conversion from Development 10,080 figure. Why are you using numbers that are different from the official LPP DEIS number? In fact, a recent report provided by Western Resource Advocates and Water Demand Management, The Local Waters Alternative to the Lake Powell Pipeline 2.0, shows that there is potential for 23,300 af of ag conversion water. It's clear that with proper management and even considering climate change there is enough water locally to support our growth for many decades. However, reuse must be a big part of that water.

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** Agricultural conversion in the Kanab/Virgin River watershed is forecast to be relatively low (presumably because there's not that much agriculture to begin with). Even by 2070, agricultural water conversion ranges from a low of 3,800 acre-feet per year to a high of 6,900 acre-feet per year. (We find it interesting that UDWR can model agriculture conversion (with all the economic and family economic uncertainties involved but claims they can't model comparisons in demand between Utah and other places.) It's prudent of the UDWR to recognize the value of water reuse, and the Plan notes several reuse programs in Washington County, including St. George golf courses. The Plan keeps returning to the tired justification for big water projects, based on the notion that more population necessarily needs more water, which has proven false in many southwest communities (even in Utah—and even in St. George).

## Climate Change

**General Response:** Analysis of climate change is evolving. The University of Utah looked at several studies on climate change for different river basins around the west and projected 9% - 10% decline in those areas. A Bureau of Reclamation study on the Colorado River estimates the flow of the river will decline 9% over the next 50 - 60 years. Weber Basin Water Conservancy District conducted a study to assess the vulnerability of their supplies to climate change. They estimated a 9% decline in their water supply into the future 50 years.

The Division's assumptions are based on research conducted by K. Khatri, as cited in the Plan. We've considered climate change impacts on supply as well as demand. When we incorporate a 9% reduction, we estimate about a 10% increase in transpiration. We looked at how increasing temperatures and variance in precipitation might impact water demand. As research continues on climate change, the Division's assumptions will reflect accepted application practices. No change was made to the Plan in response to these comments.

**Brooke Larsen:** We must make choices that help Utah adapt to climate change and protect our water resources.

**Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** Climate change has come home to roost, and they seem unable to adapt. To its credit, the Plan now acknowledges increasing effects of climate change: "The climate-warming rate in Utah in recent decades (2000 to 2017) is higher compared to records from 1950 to 2000." And "The climate-warming rate in Utah in recent decades (2000 to 2017) is higher compared to records from 1950 to 2000." And even, "The majority of the regional future climate studies indicate decreases in snow accumulation and earlier snowmelt in the future. It is also predicted that changes in the frequency, duration, and magnitude of extreme weather events will be some of the consequences of a changing climate." This is what Al Gore referred to as "global weirding" more than twenty years ago. It's clear that climate change is occurring at an accelerated rate, but that doesn't seem to matter very much to Utah's water planners. The Plan estimates the Kanab Creek/Virgin River watershed to provide only 79,100 acre-feet per year (afy), whereas the recent Western Resource Advocates report, titled "Local Waters Alternative 2.0," estimated current and planned culinary supplies at 95,842 afy and additional secondary water at 26,063 afy. Rather than simply discount WRA's work—as the lpputah.org website attempts to do, the Plan should address WRA's concerns and postulates head-on.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** ...shouldn't climate change be considered as a water supply constraint in a planning document that looks 50 years into the future in addition to the mechanical, hydrologic (reliable streamflow or safe groundwater yield), and legal constraints identified on the chapter's first page? This chapter appears to treat the uncertainties of climate change more as a constraint to producing reliable water supply estimates than as a real constraint on the security of future water supplies.

The chapter does include a discussion of drought response and mitigation planning, but it does not include a discussion of planning related to climate change mitigation and adaptation, or a discussion of what it means, over the long-term, to live in and sustain communities in an arid region. These are oversights in terms of long-term visioning and planning.

**Nick Schou (Western Resource Advocates):** Citations associated with Climate Change section (p. 41-42) - We commend DWR for including a robust climate change section that includes current temperature increases and future projections, as well as current and projected changes in precipitation and their resulting effects on water supplies. WRA recommends that the Plan include thorough citations to support the climate data included in the

Section. In particular, there are no citations available for DWR's assumption of a 10% net increase in evapotranspiration by 2065 and a possible reduction of 10% in future reliable supplies.

**Steve Erickson:** DWRe should push the science to the public and decision-makers, not just give lukewarm acknowledgement that climate change is real and must be considered in planning, but that it is urgent and is worsening at a pace that requires dramatic action now! The goal to "continue to incorporate climate change in planning models" is vague lip service. Consider that forecasts for the Colorado River may be off by 30% or more: [https://tucson.com/news/local/subscriber/gloomier-forecasts-for-colorado-river-still-too-rosy-expert-says/article\\_afc7e3e8-38fe-11ec-9ea7-63ced3caae22.html#tracking-source=home-top-story-1](https://tucson.com/news/local/subscriber/gloomier-forecasts-for-colorado-river-still-too-rosy-expert-says/article_afc7e3e8-38fe-11ec-9ea7-63ced3caae22.html#tracking-source=home-top-story-1).

**Zeppelin Zeerip:** It is said that this is not a drought response plan. That is fair, but if not a drought response plan, then it should be a climate change response plan, which at points throughout the report it is, and it is appreciated.

## Cloud Seeding

**General Response:** Cloud seeding is used to increase snow pack in the higher elevations of Utah mountains. Cloud seeding has been investigated for decades at research institutions and universities. On-going research is conducted at the universities of Wyoming, Colorado Boulder, Illinois at Urbana-Champaign, the Desert Research Institute and the National Center for Atmospheric Research, to name a few. Research to investigate the relationship between cloud seeding and climate change is ongoing. Future updates of this Plan will reflect accepted practices at that time. Silver iodide exists naturally in the environment at low concentrations, and is not known to be harmful to humans or wildlife [https://www.countyofsb.org/uploadedFiles/pwd/Content/Water/WaterAgency/WMA%20AGI\\_toxicity.pdf](https://www.countyofsb.org/uploadedFiles/pwd/Content/Water/WaterAgency/WMA%20AGI_toxicity.pdf) No change was made to the plan in response to these comments.

**Colleen Winters:** Cloud seeding seems like an incredibly expensive and not necessarily reliable way to avoid water conservation. Also a kind of creepy one. It makes me think of the James Bond movie with the villain who was going to control the world with his weather machine. Then there is the fact that if we force it to rain HERE, then it won't rain THERE. Has anyone researched the long-term effects of long-term cloud seeding? If not, they should.

**Deborah B:** As a citizen of Utah, and after reading the Water Resources Plan I felt like I had to speak up! I have noticed over the past 40 years or so that our skies are becoming more & more polluted with "Cloud Seeding", Weather Modification Programs to try and increase water to the desert! But I have noticed through the years, the damage to plants, animals, insects and humans! There are many toxic chemicals being dispersed through various means that cannot be good for our planet or the people! In my opinion, I think these programs need to CEASE IMMEDIATELY! as we have no idea what the consequences will be for humanity if this continues! We do not need our sun blocked out and we do not need to breath toxic chemical being released into our atmosphere! We do not need to belong to the UN or the WHO or be governed or threatened by the powers that be any more! These crazy programs need to stop! Please grow a brain and think of what has already occurred as a result of these ongoing stupid programs to the trees on the mountain that have died (not from pine beetles), the ground water is contaminated, the insects & the bees are dying. Birds are falling from the skies dead! The frogs are disappearing and we are next! Please take into consideration the peoples lives you are affecting and how many people have respiratory illness, asthma etc., and how many people may have died as a result of these crazy experiments into our skies with weather modification and the stupidity of Cloud Seeding! Nature can take care of itself, it does not need to be micro-managed in every area of existence! Man needs to step out of the way, if we want to see a planet left for the next generations!

**Fiona Summers:** Woah, had no idea Utah used cloud seeding so often. WOW! Well, that being said, I think it is important for the public to understand the unknown repercussions of cloud seeding. Such as, how will this change future climate conditions? Does this practice have the ability to alter climate conditions? What are the implications of adding silver iodide to the health of ecosystems, animals (humans?), plants, fungi. How does cloud seeding influence air pollution? How does cloud seeding in Northern Utah influence the surrounding states and their climate? This chapter does not convince me that cloud seeding is a viable option.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** Pages 37-40: Cloud seeding is presented as the lowest cost water supply per acre foot. However, weather modification such as cloud seeding is controversial because it is effective at changing climate. How does the Division reconcile the potential for unintended negative consequences of weather modification with recommended approaches for dealing with climate change?

## Colorado River

**General Response:** Ten comments submitted for the 2021 Water Resources Plan (Plan) are specific to the Colorado River, including proposed revisions. Thank you for being actively involved in water issues and sending us comments and suggestions regarding the Colorado River. The Division of Water Resources (Division) acknowledges and appreciates the public's interest in the management and use of interstate rivers, especially the Colorado River. This Plan isn't an interstate river planning document and no substantive changes were made to the Plan in response to these comments; some editing changes were incorporated. The Division hosts a web page (<https://water.utah.gov/interstate-streams/>) dedicated to providing information specific to ongoing interstate stream efforts. Information specific to the Colorado River is found at <https://water.utah.gov/interstate-streams/colorado-river/>.

**Colleen Winters:** Utah is fond of loudly asserting its "right" to water under the Colorado River Pact to justify the building of the Lake Powell pipeline. There is evidence that this pact was inaccurate from the start, having been formed in a wet period of history. Even had it been perfectly accurate for THEN, this is NOW. Because of the time it took us to accept climate change, the world is much warmer and much drier. Because of climate change and exploding population, the Colorado River is much emptier. It was already over-allocated to begin with and it's worse now. THERE IS NO MORE WATER TO COME. The river needs to be re-allocated based on modern knowledge and consideration for what life depends on it through its ENTIRE course, from its headwaters to the Sea of Cortez and all parts in between. Utah has long had a philosophy of "If we don't take it, somebody else will." What a dishonorable and selfish philosophy, helped along by "use it or lose it" policies. We live in a large world. We are morally and ethically obligated to consider our water partners. How about trying, "Share and share alike" for once?

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** Water is over appropriated under state water law in Utah. Water was over promised for the long-term through the Colorado River Compact. Priority and equity concerns related to tribal rights and the U.S. treaty with Mexico were never accounted for in the initial legal divvying up of the region's water supply. And now climate change, as the newest constraint in the water system, threatens to waylay the best laid water planning efforts if they are not attentive to the need to be adaptable and live within the region's increasingly variable and diminishing water supply. We support efforts to work cooperatively with other states in shared river basins, to settle the water rights claims of Native American tribes, and to adjust our expectations to match the realities of future reliable supplies so the state can accurately and fairly confront the trade-offs that will be involved in determining its water future.

**Lisa Rutherford & Paul Van Dam:** ....in 2006 the legislature and apparently the Division of Water Resources were moving forward with the proposed Lake Powell Pipeline plans, while a year earlier the Utah Division of Water Rights had communicated that there was not enough water to fulfill all the state's Upper Colorado Basin water allocations – one of which was the LPP water right. To have one agency pushing to use a large portion of that CR allocation while another was asking "how will we manage?" seems very counterproductive.

**Lynn de Freitas (Friends of Great Salt Lake):** One of the major myths entertained by the plan is that there will be enough water in the Colorado River going forward for Utah to be able to develop its "share" of the river and that we should do everything possible, including building the Lake Powell Pipeline, to ensure that we use every last bit of our allocation. The problems with this approach are obvious. There are currently shortages in Colorado River allocations that are likely to deepen as time goes on, and planning based on water that probably will not exist is a waste of resources. The better approach would be to stop spending water we don't have and live within our means.

**Martha Ham:** The Plan is based on a faulty premise. The plan should be based on how the state of Utah is going to develop a vibrant economy and positive quality of life for Utahns while taking LESS water from the Colorado River than it has in the past. The plan ignores the reality of the climate emergency we are now experiencing and the acidification of the West.

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**Rachel Wittmann:** There isn't enough water in the dwindling Colorado River for an expensive and wasteful water pipeline to St. George (and the rest of Washington County). Additionally, the state is shutting out Ute and Navajo people, who have been trying to develop their water rights to Colorado River Compact water. **\*The Division doesn't have authority to negotiate with tribes regarding water rights. No change was made to the Plan in response to this comment.**

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**Nick Schou (Western Resource Advocates):** We appreciate and support the inclusion within the draft Water Plan of a chapter providing an overview of important water law concepts. These concepts help frame and give context to the Plan. However, we also believe the discussion of these concepts is incorrect with respect to the amount of water Utah has legally available for development under the Colorado River Compact. As a result, the

discussion could prove detrimental to Utah's water future by creating the mistaken impression with respect to the amount of Colorado River water, if any, Utah has available for future water projects. The draft Water Plan discussion of Water Law includes only perfunctory references to development of a Demand Management program and to consultation with federally recognized Indian Tribes. The draft plan includes limited discussion of the ongoing 2007 Interim Guidelines renegotiations, which will decide administration and management for the Colorado River post-2026. The importance of these issues to Utah's water future suggests the need for more in-depth coverage. \*The description of water law in this Plan is provided to establish a basic foundation for the reader. No change was made to the Plan in response to this comment.

**Nick Schou (Western Resource Advocates):** Include broad representation on Colorado River Authority of Utah (p. 115) - The Water Plan discusses the recently created Colorado River Authority of Utah. While we fully recognize the CRAU and its' advisory councils are still being created and planned, we recommend including language in the Water Plan about the importance of including broad representation on the advisory councils. Most notably this would include tribal representatives and NGO groups. \*The Division is committed to diversifying representation on committees and advisory councils. However, we don't have authority to define representation on advisory councils to the Colorado River Authority of Utah. No change was made to the Plan in response to this comment.

## Colorado River Flow

**General Response:** Comments specific to the Colorado River flow received during the public comment period for this Plan public comment period were forwarded to the Executive Director, Ms. Amy Haas, and Commissioner, Mr. Gene Shawcroft, for the Colorado River Authority (<https://cra-utah.org/>).

**Response from Amy Haas, Executive Director, Utah Colorado River Authority:**

Under the 1948 Upper Colorado River Basin Compact, the state of Utah is allocated 23% of the supply of the Colorado River available for consumption by the Upper Basin. Because hydrology is variable, the amount of available water fluctuates annually. The recent natural flows of the Colorado River have been greatly impacted by the 21-year drought of record, exacerbated by the impacts of climate change. Therefore, all water development in the Colorado River basin carries a degree of risk due to uncertain hydrology. In the event of any shortage of supply, the Utah State Engineer will administer such a shortfall in accordance with law.

Narrative in the Plan was simplified in response to these comments. References to flow volumes were removed.

**Lindsey Hutchison (Utah Rivers Council):** Numerous scientific articles have established that climate change is significantly depleting the flows of the Colorado River. This has become especially evident in the last 20 years where flows declined close to 20%, producing the second driest period since the year 1200. Recent modeling efforts indicate that climate change will continue to reduce Colorado River flows, leading to future declines of up to 40 percent by the mid-century and potentially 55% by the end of the century. In other words, over last two decades, the Colorado River has undergone a nearly-unprecedented hydrological change that is likely to result in a "new normal" of substantially lower river flows. Yet, the Division failed to acknowledge this change in the Draft Water Resources Plan. Worse, the Division claimed that current Colorado River flows are 14.6 million acre-feet, an erroneously high figure that does not accurately represent the current, climate-change-afflicted state of the Colorado River. The Bureau of Reclamation reports that from 2000 – 2018, the natural flow of the Colorado River at Lees Ferry was just 12.4 million acre-feet, roughly 15 percent lower than what the Division reported in the Plan. As mentioned above, recent science suggests that these flows will continue to decline, potentially dropping to levels below 11 million acre-feet in the next few decades. These figures – both the 21st century average of 12.4 million acre-feet and the expected future average of less than 11 million acre-feet – do a better job of conveying the actual state of the Colorado River as they capture the long-term effects climate change is having and is expected to have on the River. Additionally, the Division points to a 2007 determination to argue that the Upper Colorado River Basin is entitled to use up to 6 million acre-feet of Colorado River water annually. However, that 2007 determination also fails to fully account for the significant drying that has occurred in the Colorado River Basin over the past two decades. This is due in part to the fact that the determination was made in 2007 when the current climate-change megadrought was less pronounced and due in part to the fact that the 2007 determination based its modeling on River flows from 1906-2000, which effectively excludes the hydrological shift that has occurred after the year 2000. For these reasons, the 2007 determination is outdated and does not paint an accurate picture of the current state of the Colorado River Basin or its likely future. The Division should update the plan to include a robust discussion of the effects climate change is having on the Colorado River System. This discussion should make a special effort to note the hydrological shift that occurred in the System around the year 2000, how flows in the Colorado River have declined substantially since the year 2000, that many scientists expect these declines to continue, and that previous plans and studies (such as the 2007 determination) do not accurately reflect the current or likely future state of the Colorado River System. Failing to properly discuss the effects that climate change is having on the Colorado River in a plan designed to guide Utah's water policy into the future paints the false picture that climate

change is not having a substantial effect on the Colorado River. This is extremely reckless, as it prevents or slows Utah and its residents from preparing for, and adapting to, our new hot and dry normal.

Page 112 – We suggest simplifying the first paragraph describing the Colorado River Compact as follows: “The Colorado River Compact is a 1922 among the seven Colorado River Basin states to divide the Colorado River’s water between the Upper and Lower Basins. Utah, Colorado, Wyoming, New Mexico comprise the Upper Basin, and California, Arizona and Nevada comprise the Lower Basin. Subsequent agreements further divided each basin’s allotment between member states, and allowed adaptations of the river’s regulation and use as needed. In 1944, Mexico signed a treaty with the U.S. regarding Colorado River allocations. These compacts and agreements, along with other decisions are collectively known as The Law of the River.” The Law of the River is dynamic and is adapted to changing conditions.”

Page 112 -113 – We recommend adding a clarifying sentence after the first sentence in the second paragraph, so it reads: “The compact allocates an annual 7.5 million acre-feet (maf) to both the upper and lower basins and was based on the 1905 to 1922 average annual flow of 16.4 maf at Lee Ferry (the measuring point, as designated by the 1922 Compact for meeting the Lower Basin’s allocation). Section III (d) of the Compact requires that Upper Basin states not deplete the flow at Lee Ferry below 7.5 maf for any period of ten consecutive years. Mexico receives 1.5 maf of the total flow.

Page 113 – Suggest rewording the beginning of the sentence that states: “In a typical year, the Upper Basin depletion would be 8.23 maf, calculated as 7.5 maf to the lower basin, 0.75 maf to Mexico less .02 maf from the Paria below Glen Canyon Dam.” To read: “The Upper Basin downstream delivery would be 8.23 maf calculated as...”

Page 113 – Suggest adding the word “lower” before “basin states” in the following sentence. “In addition to reductions for the lower basin states during shortages as outlined in the 2007 Interim Guidelines” Page 113 – In addition to correcting the spelling of “amendment” in the following sentence, we suggest that the term “storage in the U.S.” be modified to: “storage in Lake Mead.” “Mexico has agreed to reductions in its 1.5 maf annual treaty allotment in exchange for water storage in the U.S. Lake Mead through a 2012 ammendment to the 1944 treaty, titled “Minute 319.”

Page 113 – Suggest the following sentence be modified: “This minute, along with “Minute 323” signed in 2017, specifies how surplus water will be shared with Mexico and provides for repairs and improvements to Mexico’s canal system, which delivers water from the Colorado River to Tijuana and other parts of Mexico.” Suggested modification: “This minute, along with “Minute 323” signed in 2017, specifies how surplus water will be shared with Mexico, and provides for repairs and improvements to Mexico’s canal system, which delivers water from the Colorado River to Tijuana and other parts of Mexico irrigation infrastructure as well as binational commitments to restore habitat in the Colorado River Delta.”

**Marcelle Shoop (National Audubon Society):** Page 113 – Suggest replacing the term “storage” with the term “water” in the following sentence: “Because of this, the seven Colorado River Compact states have been working out agreements that will help preserve storage water in Lake Powell and Lake Mead, and protect river operations.” Page 115 – The first sentence under the heading “Utah’s Colorado River Use” states that “Utah’s allocation of the Colorado River is 23% of the Upper Basin’s total, currently estimated to be 1.369 million acre-feet.” We recommend revising this statement to clarify the implications of changing water availability. Utah’s allocation of the Colorado River is 23% of the Upper Basin’s total, estimated to be 1.369 million acre-feet if one assumes that the annual average flow of the Colorado River is more than 14 million acre-feet, of which 6 million acre-feet available to the Upper Basin. If, however, the Colorado River’s annual average flow is less than that (the average 2000-2020 is approximately 12 million acre-feet), the volume available to the Upper Basin would also be less, as would Utah’s share of that total.

**Nick Schou (Western Resource Advocates):** Expand on Colorado River Compact depletion provision (p. 112) - the Plan states that “[t]he [Colorado River Compact] allocates an annual 7.5 million acre-feet (maf) [of Colorado River water] to both the upper and lower basins . . .” Although the compact does in theory so allocate the Colorado River, the compact also includes an additional provision stating that “the States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000-acre feet for any period of ten consecutive years.” Because, as is discussed below, the Colorado River averages much lower flow than would be sufficient to provide 7.5 maf to both the upper and lower basins, it is this “no depletion” provision rather than the 7.5 maf allocation that governs the amount of water available for use in the Upper Basin. The draft Water Plan does reference this “no depletion” provision at page 113, but includes this reference only in the context of a discussion of shortage sharing under the 2007 Interim Guidelines. It is important to be clear that this “no depletion” provision is not part of any shortage sharing agreement, but a central tenet of the Colorado River Compact providing a very real limitation on the amount of water available to the Upper Basin, and by extension, Utah for future development: that amount that does not result in the Colorado River at Lee Ferry being depleted below 75 maf over any ten-year period. Revise Colorado River water availability (p. 113) - The draft Plan states that “[r]ecent estimates indicate the

river's current flows are approximately 14.6 maf, according to the 2019 Upper Colorado River Commission's 71st Annual Report . . ." Importantly, the latest and most accurate estimates of the Colorado Rivers' flows are well below this 14.6 maf figure, research shows that since 2000 the average flow in the river has been only ~12.4 maf. Further, recent estimates indicate that as a result of climate change Colorado River average flows could shrink by as much as another 20% percent by 2050:

<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2016WR019638>. These flow estimates, viewed in light of the "no depletion" provision, make it exceedingly unlikely that the Upper Basin will receive the theoretical 7.5 maf allocation awarded the Upper Basin under the Colorado River Compact. Colorado River water availability estimates (p. 115) - the draft Plan states: "Utah's allocation of the Colorado River is 23% of the Upper Basin's total, currently estimated to be 1.369 million acre-feet. Of this, Utah is currently using about 1 million acre-feet. The remaining 369,000 acre-feet is expected to be fully used in the future." This statement disregards the hydrology of the past 20 years and what scientists overwhelmingly predict our future holds. As noted, flow in the Colorado River is currently averaging 12.4 maf and is expected to further decrease over the next thirty years. If this 12.4 maf average flow continues, Utah's allocation of the Colorado River would be below 1-million-acre feet. This means not only that Utah would have no water available under the Colorado River Compact, but also that Utah may currently be exceeding its allocation. Utah should plan for the future based on accurate estimates of the amount of Colorado River available for development. The entire intent of the Upper Colorado River Basin Compact of 1948 was to use percentage allocations for Upper Division states because the compact commissioners knew there was great uncertainty in the quantity of water available.

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** ...the Plan exposes Utah's erroneous thinking when it claims: "Consequently, the 2007 Upper Basin's Hydrologic Determination is closer to 6.0 maf inclusive of Colorado River Storage Project evaporations." So, the Plan does recognize that flows are not what the boosters thought in 1922, but apparently Utah still thinks flows are higher than other credible researchers who expect flows to decline to 12 or even 10 mafy (e.g., Center for Colorado River Studies 2021), and the Plan understates expected dramatic decreases in flows expected due to climate change, which could reach 20-30%.

This Plan spreads a false interpretation of the Colorado River Compact and the Upper Colorado River Compact: "The compact allocates an annual 7.5 million acre-feet (maf) to both the upper and lower basins and was based on the 1905 to 1922 average annual flow of 16.4 maf at Lee Ferry..." This is patently false: the Upper Basin states are not allocated a fixed amount of water, but they split by percentages (Utah was granted 23%) of the water remaining after the Lower Basin states are provided their allocation. If Utah officials believe they have the political power to forcibly take water from California or Arizona, they are delusional. In fact, the plan recognizes that "[r]ecent estimates indicate the [Colorado] river's current flows are approximately 14.6 mafy, according to the 2019 Upper Colorado River Commission's 71st Annual Report"—although others in the field of monitoring the Colorado River are finding it's been more like 12.4 mafy—which means Utah's allocation is even smaller. The arithmetic is pretty simple: even if flows are 14.6 mafy, once the Lower Basin states receive their 7.5 mafy and Mexico is granted its 1.5 mafy, the Upper Basin states must share a balance of 5.6 mafy, and Utah's 23% would be 1.288 mafy. Utah has already granted more than 1 million afy and approved other projects of 493,000 afy, meaning there is no water available from the Colorado River for the LPP. P. 115 notes "Climatic conditions may impact the amount of water available for use by the Colorado River Basin states. Taking this into consideration, along with the water reserved for the Ute Indian Tribe and Navajo Nation based on negotiated settlements and the need for water for the Lake Powell Pipeline, energy development, agriculture, and municipalities in Utah, most, if not all, of Utah's Colorado River apportionment is committed." But, what if climate change models underestimate reductions in flows? What does this do to priorities for CR water?

## Colorado River Water Rights

**General Response:** The Division of Water Rights has authority to allocate and adjudicate water rights. No change was made to the Plan in response to these comments.

**Nick Schou (Western Resource Advocates):** Prioritize Indian Tribes Colorado River allocations (p. 115 & 119) - The Water Plan includes little discussion of future efforts to coordinate with federally recognized Indian Tribes in Utah, other than generally stating at page 119 that Utah should "[d]evelop a policy to establish a process for consultation" with such Tribes. On page 115 the Water Plan notes that some of Utah's Colorado River allocation must be utilized to satisfy water right settlements for the Ute Tribe and portion of the Navajo Nation. We wholeheartedly agree that the state needs to satisfy these settlements, but are concerned they are juxtaposed with the Lake Powell Pipeline, energy development, agriculture, and municipalities. Unresolved tribal water rights are a historical inequity that demands priority over other non-tribal uses. We strongly urge the state to be explicit with that prioritization. More broadly speaking across the Colorado River Basin, federally recognized Indian Tribes have senior rights to over 20% of Colorado River water. These water rights will have an enormous impact on future use of Colorado River water.



**Steve Erickson:** The continued insistence that Utah has not used its Colorado River allocation – its God-given right according to some - under the 100-year old Compact is a roadblock to progress in solving the biggest crisis in the West. The reality is that the River is over-allocated from the mountains to the sea, and Utah has maxed out the wet water available regardless arbitrary and outdated rights under the Compact. Continuing to deny this fact and to be obstinate in insisting upon developing water that isn't there is contrary to the verbiage of cooperation with the other Compact states. That cooperation is not defined in the WRP, and so far we've seen very little of cooperative projects recently. Utah should be exploring water storage agreements with neighboring lower basin states rather than taking an adversarial stance in pushing the Lake Powell and Pine Valley projects. The WRP fails to address the severity of the problem and the consequences.

**Marcelle Shoop (National Audubon Society):** Page 115 – the plan states: "Taking this into consideration, along with the water reserved for the Ute Indian Tribe and Navajo Nation based on negotiated settlements and the need for water for the Lake Powell Pipeline, energy development, agriculture, and municipalities in Utah, most, if not all, of Utah's Colorado River apportionment is committed." The foregoing sentence is unclear in how the pending reserved water rights negotiations listed on page 112 are factored into the list in that sentence and it would be helpful to make that clarification. Additionally, we suggest that the sentence be modified to acknowledge that water availability in the Colorado River may constrain the amount of water that actually could be available to Utah. Page 116 – Suggest deleting the last part of the following sentence after the word implementation because the Yuma Desalting Plant is not currently operational and is not part of the US operations to comply with Minute 242. "As part of the Act, salinity control projects in the Colorado River Basin have been implemented." along with the construction of a desalinization plant near Yuma, Arizona." Suggest adding discussion of the ongoing 2026 negotiations since this plan will go through 2026.

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** It's commendable that the Plan expects to adjudicate Virgin River basin (and 4 others) in next five years. And it discusses federal reserved water rights, but the tone is that those nasty feds think they aren't subservient to Utah, typical of what has become a classic Utah persecution complex that we've seen in other issues.

## Conservation

**Janice Gardner (Sageland Collaborative):** I ask that in the final Water Resources Plan, you remove all images that idealize water-wasting practices. The images the Division of Water Resources selects need to promote the recommendations made in the Water Resources Plan. The images selected for this report continue to promote land use policies that the draft Water Resources Plan states are not sustainable. For example, on Page 81 there is a photo that shows an affluent residential development, with an emeraldgreen golf course. Every single home in this image has a green, irrigated lawn. From the content in the draft Water Resources Plan, this seems contrary.

*\*Thank you for providing a fresh perspective on the images in the Plan. Some images have been changed in the Plan in response to this comment. We will keep this in mind as we write future plans.*

**General Response:** The Division appreciates comments in support of conservation. Water conservation is one approach to providing water for the future. The Division is taking advantage of renewed interest in water conservation to expand our existing water conservation programs.

We provide resources (training, example documents, and funding) to assist water providers with conservation efforts. The Utah legislature is funding rebate programs, and promoting metering of secondary water. Governor Cox was a vocal advocate for water conservation this past summer and he continues to support the Division's conservation efforts.

The Division doesn't have authority to mandate or enforce water conservation ordinances. The conservation goals set by the Division were designed to increase water conservation efforts across the state, starting with regional uses showing the greatest potential for conservation. The recommendations were developed by a consultant based on potential for conservation by area.

We encourage communities to surpass the established goal. When conservation goals are met, a new goal will be established to encourage conservation until best practices for all water uses are achieved.

No change was made to the Plan in response to these comments.

**Barbara Glines:** Asking the residents to conserve is of course a given, but it is also necessary not to sell off any of our water to entities outside of our state, or any business within our state where an over use of water would be necessary to keep that business viable.

**Dan Watt (Water for the West LLC):** We need to keep conserving like the document suggests and continue our plans on doing so. I applaud the conservation efforts and plans and all we are doing.

**David Rosenberg (Utah State University):** The plan describes state wide conservation efforts such as flip your strip, linked land use and water planning, water efficient standards for new development, secondary water meters, agricultural optimization, a weekly lawn watering guide. These conservation efforts help reduce per capita water use and delay the need for new projects such as Bear River development or Lake Powell Pipeline. The plan listed specific conservation actions for individuals, state government, UDWR, municipalities, water systems, and organizations. Everyone has a role to promote conservation. These action items are great because they tell parties how to conserve water now and how to grow conservation efforts over time.

**E. Amriott:** Let's work on other conservation and use efforts before implementing new development projects not 'needed' for another 20 plus years - even if already legislated.

**Laurie Mecham:** Rather than diverting water that would flow into the Great Salt Lake through the proposed Bear River development, the state must first put more resources toward conservation. This should include meaningful, reasonable pricing of water, commercial and residential turf reduction, and improved agricultural methods.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** The Plan notes four main approaches to water conservation. However, there are other demand management tools available to maximize water saved through conservation, including conservation pricing structures, that the state should also incorporate. We wonder why, though, there is not more effort to help Utah's address other irrigation system inefficiencies on individual properties. It is the infrastructure at the end of the pipe that matters in this case, not just the plant material, that is the key to landscape water conservation. Data from the Water Check program has shown that irrigation systems in the state rarely exceed 50% efficiency, although industry standards indicate that 70-90% efficiency is possible, depending on the type of irrigation utilized. Expansion of the WaterMAPS™ and Water Check programs, additional demand management tools developed by Utah State University, would also help to determine the capacity of communities to conserve water and provide them the means to do so. Page 49: Sprinkler application efficiencies as measured by the long-running Water Check program (irrigation system audits) average 50%, not 60%, and represent more capacity to conserve in these systems.

**Kristen Banzh:** There are simple ways that we can conserve water. It was reported that every year, we have water deficits and have to use water from our supply. We should have implemented restrictions and building guidelines long ago. Here are simple, real, immediate solutions that could be implemented. Businesses do not need grass. Almost every business around Utah seems to be landscaped with a large span of grass and a grass strip that is never actually used. Zero scaping for businesses should be required, grass removed and water restrictions placed. We need to stop watering the sidewalks- this can be done by requiring everyone to do away with the grass strip on adjacent to their lawn. The flip your strip is good, now lets make it required and combine the two. The strip is unusable and a total waste of water, most of which ends up on the sidewalk.

**Lindsey Hutchison (Utah Rivers Council):** Thousands of water suppliers across the United States have implemented water conservation and efficiency programs which have greatly reduced water demand among their customers, reduced utility operating expenses, lowered operation and maintenance costs, and reduced water rates for customers over the long term by avoiding or deferring the need for additional water supplies. Among many water suppliers in the American West, demand management has become a major component of their operations which include an array of sophisticated water conservation measures designed to reduce the water use of their customers. U.S. per person water use has declined significantly in the last several decades because of the popularity of water conservation programming. The American Water Works Association (AWWA), is an international non-profit, scientific and educational association founded to improve water quality and supply. Founded in 1881, the AWWA is the largest organization of water supply professionals in the world and their membership includes over 4,300 utilities that supply roughly 80 percent of the nation's drinking water. The AWWA's Manual 52, Water Conservation Programs, A Planning Manual, lists a comprehensive overview of why water conservation should be considered by utilities and water planning agencies. It is the foremost publication in the world regarding water conservation. The manual provides peer reviewed insight on conservation, setting goals, water use & water savings, and program planning & execution that is used by cities and towns around the world because as stated on page 3: Conservation, implemented as a long-term water management practice, is fiscally responsible and can enhance our ability to grow. AWWA begins their 217- page manual with 13 case studies comparing water conservation programs across the United States and Canada. On page 4, the AWWA notes the reasons why water conservation programs should be implemented, including cost savings and avoiding the need for new development.

**Lisa Rutherford & Paul Van Dam:** Regarding conservation efforts, Localscapes is a good first step, but we don't think it goes far enough. Even the Localscapes home page still shows a home with front yard grass and grass on the street strip, too. And, their video and designs still show grass in front. Grass may still be necessary in the back yard for kids to play on, but certainly not the front. We see huge amounts of grass in front yards with no child in

sight! Also, desert landscaping is much more interesting and attractive than large lawn areas and will enhance property values as water becomes scarcer. It will also become more expensive to transition as water becomes more expensive and more see the need to change: demand equals more expense. Those who are interested would do well to make the change now.

**Lisa Rutherford & Paul Van Dam:** The water-wise ideas included in this Plan should have been in place long before now: Reductions for the drought emergency could, according to the plan, include advancing turf removal rebate programs, adopting land-use plans that encourage desert-friendly landscaping, optimizing agricultural use by improving technology or converting land to other uses, improving our ability to monitor secondary water use and track water loss and expanding education about water limitations. The Plan states that "Utah wants to be the first state to expand the turf buyback program statewide." That is a worthy goal but with legislators controlling the purse strings and apparently wanting our water use to stay high to help justify the LPP, this may be a worthy but unattainable goal. However, many people want to convert their grassy areas to desert landscaping to save water but either don't know how or don't have the resources to do it. The state will do citizens a great favor by doing whatever they can to help teach and provide funding to help with the transition.

**Lisa Rutherford & Paul Van Dam:** According to the Plan "Water Conservation Plans help water providers and suppliers prepare for their future water needs by creating goals and implementing water efficiency and conservation management strategies." And, "By statute, the plan "shall contain a clearly stated overall water use reduction goal and an implementation plan for each of the water conservation measures it chooses to use, including a timeline for action and an evaluation process to measure progress." The water conservation plans we've seen in Utah are not really plans. They have no way of measuring the success and no timelines are provided for achieving success. Ivins, the city where we live, has an upto-date conservation document with conservation best management practices, but they seem very "general" and most rely on what the water district is doing or plans to do. The best management practice "Use reclaimed or recycled water when feasible" is very nebulous and only states: "Ivins City is considering installing a larger reservoir that can hold the recycled water during the winter time for use in the summer time." This vague language gives the city much leeway in achieving this goal rather than actually putting a date at which they will get this done. To many of us in Ivins it seems that there is more emphasis on approving developments than dealing with our water future to provide water to those developments. In fact, the city council recently voted to put a disclaimer on development plans saying the water may not be available. "Buyer beware" is certainly becoming the message of the day in southern Utah.

**Maggie Franz:** Whatever we can do to help, I am willing. This includes taxes, voting, service, donations.

**Martha Ham:** The WRP must place more attention on how to educate, inspire, incentivize, and support the public with embracing individual water conservation practice. The state must invest in practices that change users' behaviors, resulting in significant conservation. The state is facing a crisis and citizens need to know what they can do individually to make a difference. Expanding the Utah Water Savers program is crucial. Programs like Flip Your Strip have been wildly successful.

**MaryAnne Russell:** We need to be conserving what water we have.

**Meagan Leigh:** Water conservation, incentives to reduce water usage, etc. We need to focus on water conservation, incentives to reduce water usage, xeriscape instead of lawns, charge more for excess water usage. I moved to IVINS in 2013 & xeriscaped our property, not a new build. We then moved to Sun River again not a new build & also xeriscaped. People & businesses need to monitor irrigation systems better. The rare times we get rain, I will see sprinklers going & often water running down driveways & roads. We can make this work if elected officials get their heads out of the sand & find & implement logical conservation & look for water alternatives right here in Washington County & not look to the depleted Colorado River to supplement our water wasting ways. Water parks, man made lakes & the like should be nonstarters. Golf courses should follow Arizona's lead with less green fairways. I golf & would support this. Thank you

**Nick Schou (Western Resource Advocates):** We applaud the Division for utilizing social media to disseminate information about the Weekly Lawn Watering Guide, but additional avenues for outreach would be useful, such as local news networks, print media, and local events (e.g., farmers markets, sporting events). Outreach is even more effective if done in coordination with local water agencies and municipalities. We commend the Division for emphasizing the critical importance of municipal water conservation to addressing future water needs amid population growth and intensifying drought conditions in Utah. That being said, we found many areas of this chapter that could be improved or modified to align with industry best practices and standards. Expand education and outreach of the Weekly Lawn Watering Guide (pg. 64). Expand list of municipal water conservation actions (pg. 69) - This list should include: Develop water efficiency incentive and rebate programs for water wise landscaping, irrigation equipment and indoor fixtures, develop water education programs for youth and adults, including water conservation in General Plans, incorporate land use planning tools in Water Conservation Plans and promote graywater reuse and rainwater capture. Fast-tracking water conservation & water supply modeling (pg. 62) -

Governor Cox' priorities for fast-tracking water conservation are all critically important and should be fully implemented as expeditiously as possible. These strategies have the potential to significantly reduce statewide water demand, and projected savings from these solutions should be factored into water supply and demand modeling projections in this Plan. Turf buyback implementation considerations (pg. 62) - Implementation of a state turf buyback program must be done strategically and in coordination with water agencies who currently offer a buyback program, to avoid undercutting those programs or disincentivizing other water agencies from developing their own buyback programs. To be the most efficient and garner the most water savings, there must be coordination between the top down and bottom up.

**Rachel Wittmann:** There should be more support for homeowners to xeriscape lawns. Rebates are nice, but there are still a lot of barriers for homeowners, especially elderly or financially challenged, to xeriscape their park strip and/or lawn. To do this there is planning, paying for supplies upfront, and physical labor. A rebate is not enough motivation to take on the task of xeriscaping.

**Scott Bradley (Simplyscapes):** Simplyscapes is in favor of a statewide turf buyback program (page 62). This will help us promote the program via a state-wide marketing campaign. We think the state should provide a base rebate amount (e.g. \$1.00) for every square foot of turf, regardless of region. Individual regions can add to the amount. The plan doesn't provide rebates for new water efficient installs. Only retrofits. We feel this is a mistake. We recommend that the plan include a statewide rebate program for new installs that meet minimum water efficiency standards. The Localscapes standard is good for Northern Utah. Drier areas should adopt a regionally-adjusted standard. Unattractive landscapes don't qualify. This rebate will help offset the higher upfront costs of such landscapes. The rebate amount per square foot should be lower than the turf buyback program.

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** The Plan commendably proposes four proven approaches to water conservation: a turf buy-back program, secondary water metering, integrated land use and water planning, and adopting agricultural optimization practices. There are even some program details, such as promoting the idea that local water suppliers adopt water conservation plans and follow Utah's Water Conservation Plan Act, advertising an online Weekly Lawn Watering Guide, encouraging water loss accounting and auditing (though still has Washington and Kane counties at a high level of watering), and "water education" (anything that educates the public about facts regarding water use would be good).

**Steven Nielsen:** Hello, I'm a Journeyman plumber and wonder why you haven't asked any plumbers how to save water? There are so many different options to explore. One of my favorite is PHYN. I would like to see this installed in each new construction house as part of the impact fees. I also would like some sort of subsidized plan or tax break for those who get this installed in their already existing home. I am a preferred installer of these products and have seen how much water they can save in the numerous homes I have installed them. Please call me with any questions. Let's get this done! *\*The Division recommends and encourages leak detection to minimize water loss. The Division has overlooked a valuable source of information by not including plumbing professionals in planning and implementation discussions. In the future we will include plumbers in water conservation discussions. State agencies don't endorse or promote specific brands of proven technology. Building codes and ordinances are implemented at a local level.*

## Conservation - More Ambitious

**David Rosenberg (Utah State University):** Make state conservation goals more aggressive than 20% reductions from current use (Figure 5-2). The UDWR shared 2018 Total gallons per capita per day (gpcd) data in their data portal for 468 Utah water providers (UDWR, 2020). I see that Utahns use from less than 100 to more than 4,000 gpcd!!!! (Figure 1). Utah water providers can reduce their current water use by 20% and achieve the 191 gpcd level of Salt Lake City. Utah providers exceeded 239 gpcd. A 20% reduction will still keep their use higher than the present Salt Lake City level. Utah water providers have lots of opportunities to conserve water. Make state conservation goals much more aggressive, see Figure 1. Utah water providers ranked by 2018 total per capita water use. Water providers between the two dashed vertical lines can reduce their use by the 20% state conservation target and reach Salt Lake City's current level. Data from UDWR (2020). Target conservation efforts to the Utah customers and Utah water providers that can save the most water. For example, The UDWR reports that Garden City, Wellsville, Brigham City, Park City, and Green River use more than double the amount of Salt Lake City on a per-capita basis (Figure 1). Cities in Washington County like Hurricane and St. George also use 160% or more water on a per capita basis than Salt Lake City and have opportunities to conserve. In the section on the Lake Powell Pipeline (pp. 87-88), point out these numerous targeted conservation opportunities so Utahns get a balanced perspective on the pipeline project and alternatives. Similarly, celebrate accomplishments of providers with low per capita use like Draper and Capital Reef National Park. *\*GPCD is based on full-time permanent population. Communities with a high percentage of second homes (homes with no population associated with the residence) and have an economy where tourism is a large economic sector, water use is higher. The Division recognizes the calculated GPCD is biased against these communities, however, we haven't developed an alternative metric to evaluate water use.*

**General Response:** The Division's conservation program promotes and supports conservation efforts throughout the state. The program continues to grow and offer new incentives as resources become available to support those efforts. Successful conservation efforts are celebrated on the Division's website at <https://conservewater.utah.gov/>. As new programs become available, they are featured on this site. We recommend every Utahn visit this site and return often. We agree our conservation efforts can be more aggressive. When the Regional Water Conservation Goals were created, the regional goals were more aggressive than the existing goal, which some communities had reached. Review, evaluation, and revision of the regional goals are planned for every five years, or as communities meet their goal. Goals will also be adapted as communities realize they have more success in an area of conservation which wasn't anticipated. Our consistent message about conservation is: Conservation is here to stay. How we use water in Utah will continue to change and we need to use conservation practices to be responsive to those changes. No change was made to the Plan in response to these comments.

**Brittany Parry:** I have never seen a much needed call to action to conserve water for our desert state. It seems legislature and development act as if we have unlimited supply. It is more than apparent we are all in dire need of major water conservation if any of us are to keep living here.

**Erin Smeeding:** Stricter rules for water conservation are needed. Do not make changes optional. These need to be enforceable standards.

**James Teton:** Water Conservation education is good. But how many people really go to the website after watching a PSA on television? It's long overdue to have local governments require zero scaping for new construction. But the reality is that our population has loved the Kentucky bluegrass and other water consumers for a long time. I have seen very few conversions to drought tolerant gardens. As of your 2015 timeline we are still the 2nd most water consuming state per household 169 gallons per day. Only Idaho had used more. Most of that is probably due to the green lawns and we have the most people per household in the country. Long ago Nevada required either the front or back yard can be green. Now most new construction is all zero scaped unless the green is for a specific purpose. It is time to bite the bullet and REQUIRE all homeowners to choose which lawn they want to be green and convert the other. And commercial properties to have drought tolerant trees. We still need trees. Require all households and hotels to have shower heads that are 1.75 gpm or less, etc., West Jordan has the highest water rates and yet the reason people don't convert their yards is that water is dirt cheap. Especially those who use irrigation to water their lawns. That is the most inefficient and wasteful watering system. I see one owner lets hundreds if not a few thousand gallons of water go down the storm drain. At least it goes out to the Great Salt Lake that really needs it.

**Janice Gardner (Sageland Collaborative):** Conserving water in Utah is a major cultural and paradigm shift. Utahans are accustomed to using water without financial or other recourse. Our water is inexpensive and there are no regulations in place and very few incentives to conserve water. I believe this is why Utah has one of the highest gallons per capita per day, compared to other states. The Utah Division of Water Resources and Governor's Office should invest more in its program to shift this culture and paradigm. I find the goals to lower gallons per capita per day at 11-20% by 2030 are not enough. For example, in the Salt Lake Water Conservation Region, only a 11% reduction by 2030 is referenced. I find this unacceptable, especially transposed against the many serious issues the draft Water Resources Plan outlines. For example, as a resident of Salt Lake County, I see how much water is wasted on lawn watering alone. Please consider creating more targets that align with the issues the Water Resource Plan identifies.

**Katie Newburn:** The Great Salt Lake Advisory Council has already outlined how we can meet our water needs without the Bear River Development through conservation. The October 2020 "Conservation Impacts Study" states, "[i]f Utahns want to achieve the level of conservation required to postpone the Bear River Development project beyond 2065, it will require some dramatic changes to current water use habits and the way we develop land. Reaching this level of conservation will require active participation and acceptance by homeowners, businesses, municipalities, and legislators" (pg. 3, Executive Summary). The Division of Water Resources needs to lead this forceful pivot to conservation as an alternative to development. Intensive conservation can do so much to alleviate the strain on supply and demand for our limited water resources.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** The Plan notes several areas of focus for "fast tracking" water conservation. Expanding Turf Buybacks - We support "Flip Your Strip" efforts because they remove grass from areas in which it is not being used in a functional way. However, the grass itself does not determine how much water Utah's citizens apply in the form of irrigation. In fact, data from the Water Check program has shown that most Utahn's water their grass twice as much as is required. Therefore, if Utahn's were to water appropriately, an immediate 50% irrigation water savings could be achieved. For this reason, we commend the Division's efforts toward and the legislature's support of rebates which subsidize the purchase of smart irrigation controllers for Utah's citizens. Other approaches also exist for achieving meaningful landscape irrigation water conservation. For example, CWEL is cooperating with Salt Lake City on a "Turf Trade" program in which the city's residents will be able to purchase low water use grass seed at cost, similar to the state's controller rebate program. The program encourages the city's residents to "Trade Up, Dry Out, and Stay Green" in the

interest of conserving water and maintaining the environmental benefits and ecosystem services of grass in the landscape. Other accountability standards, for example the US Environmental Protection Agency's WaterSense labeled homes and fixtures programs and other sustainable infrastructure programs should be implemented in the state. The Alliance for Water Efficiency has also developed the Net Blue: Supporting Water-Neutral Growth program.

**Laurie Anne Karren:** ....the Division of Water Resources should plan to meet the needs of current and future Utah residents by implementing more robust and comprehensive water conservation programs, policies and incentives.

**Lindsey Hutchison (Utah Rivers Council):** The Division of Water Resources is not working towards robust conservation measures, and this failure needs to be remedied to ensure that Utah has a sustainable water future. While we support expanding turf buyback programs, installing secondary water meters, and optimizing agricultural water use, those efforts are not enough, and Utah needs to be looking to the other Colorado River Basin states and their water conservation programs to find ways to increase the state's conservation efforts.

**Nick Schou (Western Resource Advocates):** Link climate change to the need for enhanced water conservation efforts (p.60) - The Plan clearly explains that climate change will lead to changes in water supply reliability (Chapter 3). We recommend including explicit language that connects climate change in Utah to the need for more aggressive water conservation methods. The Plan should recognize water conservation and reduced water waste as the cheapest, fastest, and most reliable ways to secure water supplies and protect the health of the State's rivers and lakes in the face of climate change.

**Nick Schou (Western Resource Advocates):** Enhanced regional water conservation goals (pg. 61) - While the State of Utah has made important strides in recent years to reduce water demand through conservation, per capita water use remains among the highest in the nation. Given the State's high per capita demand, significant future population growth, and historic drought conditions, it's critical that DWR set ambitious water conservation goals to meet future water demands. Most of the regional water goals included in the Plan represent an approximately 0.7 - 1.4% gpcd reduction per year. WRA recommends that regional water conservation goals be increased by at least 1% per capita water use reductions per year in each region, so that revised goals fall between 1.7% to 2.4%. This is especially important in regions of the state that are expecting significant future shortages. While ambitious, these reductions are more than feasible. For example, through conservation efforts Southern Nevada Water Authority in Nevada reduced its per capita demand by 47% between 2002 and 2020 or 2.6% per year and the City of Aurora in Colorado reduced per capita demand by 36% between 2002 and 2014 or 3% per year.

**Paul Burnett (Trout Unlimited):** For example, as written, the plan assumes that human population growth comes with it a set amount of water use that is baked-in. This deterministic perspective discounts the value and necessity making policy that shapes how the growth happens in the state. Incentivizing water-conserving appliances and fixtures, and implementing waterwise outdoor landscapes are two key practices that will significantly reduce per-capita water use. The 2020-2021 drought clearly indicated how vulnerable and unprepared we are for a string of lean water years. We know that droughts are a sure thing in the future, and sustainable water development planning identifies the key stress-points under drought conditions and identifies strategies to reduce the burden on the people and natural river systems. Examples include early warning systems, large-scale implementation of waterwise landscapes, agricultural incentives to reduce consumptive use, and watershed restoration. PG 61 The Water Conservation Goals can and should be more aggressive than this. As a family of 4 we average 143 gallons used per day total for our household. Incentives for low water use fixture and especially appliances can dramatically reduce GPCD use. PG 62 Turf buyback is an incredibly important component of water management and water conservation, but it comes at a cost. Replacing turf with hardscaping or waterwise landscaping is about double the cost of preventing that water from being applied in the first place. This estimate was based on the cost of \$3.40 per square foot for landscaping stone, plus the assumed labor of another \$3.40 per square foot of labor. In tandem with the turf buyback programs it is incredibly important to place restrictions on outdoor uses for new development. The case-in-point is Herriman example above, and also the massive new developments in non-irrigated landscapes such as new ski resorts being planned in northern Utah.

**Sierra DeVuyst:** We must start aggressively conserving water now.

**Steve Erickson:** The new water conservation goals are welcome, but are set too low to get the attention of the water using public. Expanding turf removal rebates is positive but not aggressive enough. Integrating water use and availability with land use plans - long overdue - should include single family subdivision development as well as multi-family development (whose residents use far less water per capita day). DWRE should recommend municipalities consider adopting water concurrency ordinances that require proofs that water for new residential development is actually available. This is not a stretch - there is precedent. Not only do Bryce and Snyderville Basin have such ordinances, the State Engineer has administratively closed basins to new water rights applications due to a lack of unappropriated/unallocated water.

**Tyler Christensen:** Greater emphasis must be placed on conserving water resources.

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** UDWRRe touts their "Regional Water Conservation Goals" plan, but those goals are not very conserving. The Plan hopes Box Elder, Cache, and Rich counties will River Basin will adopt conservation to decrease use from 304 gpcd in 2015 to 249 gpcd in 2030, and in Washington and Kane counties from 305 gpcd in 2015 to 262 gpcd in 2030. ....the underlying rationale continues to assume simply that more people use more water. It largely ignores the potential for serious conservation. The Plan recognizes some limits on water supply and promotes the need for conservation. Nowhere does the Plan attempt to compare water use in Utah with water use in other states or regions so the public has some idea of what may be possible.

## Conservation - Regional Goals

**General Response:** Regional conservation goals were set through a collaborative process that considered input from the general public and a variety of key stakeholders across the state. Attainable conservation goals were based on the water conservation potential for each region. Water conservation potential was determined for each region by calculating current and projected future water use, assessing the influence of policy changes, identifying applicable water conservation practices, as well as predicting changes in market and social trends.

Regional conservation goals were set with an adaptive management approach in mind. Goals will be evaluated and modified as new data become available, conservation practices and technology develop and evolve, and change in conservation policies, attitudes, and behavior occurs.

In 2025, progress towards meeting the 2030 regional goals will be reviewed and evaluated. Feedback/changes in strategy will be recommended in regions where goals have not yet been met. Regions that have already met the 2030 goal will be reevaluated to determine additional conservation measures that could be considered for implementation. The Division of Water Resources continues to support water suppliers' and end users' conservation efforts by analyzing M&I water use data, administering funding programs, reviewing water conservation plans, and promoting education and outreach.

For details on how the regional goals were set, see Utah's Regional M&I Water Conservation Goals - <https://water.utah.gov/wpcontent/uploads/2019/12/Regional-Water-Conservation-Goals-Report-Final.pdf>. To learn more about the water conservation resources available through the Division of Water Resources, please visit the water conservation website at <https://conservewater.utah.gov/>.

**Allen James:** On page 17 it is stated "It's more relevant to compare current numbers against past performance and ensure the state sees improved conservation and efficiency." when discussing how historically Utah (and especially Washington county) are criticized regarding the water use. I do not think that this argument is valid as it assumes performance is referenced on some arbitrary baseline use that the state or county originated from and does not take into consideration the validity or the reasonableness of this baseline. I would suggest that these types of uses are referenced against a standard of measurement for water use instead of being self referential. The fact that Washington county is projected to have the most growth (figure 2-2) as well as being one of two counties that have a recommended three irrigations per week (graphic 5-4) leaves much to be desired in terms of sustainable growth. Why are there conventional lawns in such a place with such heavy water requirements in such an arid drought ridden climate? I would recommend stronger policy for reducing the use of conventional residential and city/state supported lawns in times of severe drought as these are largely an unnecessary luxury given the current water situation.

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** It is commendable that on page 49, the Plan provides a state-wide estimate of evapotranspiration, "In the Baseline and Regional Conservation Goal (RCG) scenarios, ETNet is progressively increased to 11% at 2070." But those values should be calculated differently for different parts of the state; it must be higher in Washington County than in Rich County. P. 51: Table 4-1 Projected Municipal and Industrial Water Demands summarizes findings of when water demand will exceed reliable supply. First, it is disingenuous to propose the No Change Demand Model that doesn't consider climate change because climate change has already begun decades ago. Even under the No Change model, the Bear River Basin demand (130,600 afy) would not exceed supply (154,800 afy) until well after 2070. In the Kanab/Virgin watershed: 2030-2040 w/ only 79,100 acft supply (Note that even the LPP DEIS estimated more than 98,000 afy in supply for Washington County, and LWA 2.0 suggests have ~100,000 acft), it doesn't include planned projects. CSU calculated in our response to the LPP DEIS that we could get down to 100,000 acft; DWRe has basin at 146,000 acft demand in 2070. The Utah 2015 Legislative Audit used gpcd as a metric and found that Utah's use at 248 gpcd was higher than any of the other western states (WA 159 gpcd, NM 161 gpcd, OR 166 gpcd, CO 180 gpcd, CA 181 gpcd, MT 196 gpcd, AZ 196 gpcd, ID 210 gpcd, WY 220 gpcd, NV 229 gpcd). And Colorado River water diversions by Nevada, Arizona, and California have been declining, even as populations are increasing; even in St. George, increased population has used less water per capita over the past five years without any severe

water conservation efforts. The Plan touts how the Washington County Water Conservancy District has done a good job: "This trend indicates the recommended water conservation measures are already being used in the Kanab/Virgin River Basin. "But it ignores how poorly the basin is really doing compared to other southwest communities. The Plan tries to skirt this issue by claiming that gpcd metrics in Utah's communities can't be compared to those outside of Utah—though any engineering graduate from a reputable school could probably develop an appropriate comparison.

## Conservation - Specific Area

**General Response:** We appreciate your concern for the area where you live. The Division doesn't have authority to implement or enforce water conservation measures at a local level. Water conservation is done at the local level for their area. Please continue to actively participate with local governments on conservation implementation. Adoption of ordinances and water efficient standards occurs at the local level. In the specific case of Washington County, how Gallons Per Capita per Day (GPCD) is calculated matters. GPCD is all municipal and industrial (M&I) water used at the customer level divided by the population. M&I water is potable water supplied by public water systems for residential, municipal, institutional, and industrial uses. It includes secondary water supplied to those same users.

The Division counts municipal and industrial (M&I) water use every time it is used. When water is reused, it is counted each time it is used, even though additional water isn't diverted to meet the second or third uses. Washington County Water Conservancy District reuses water for some outdoor applications. The Division counts that water when it was first used and again when it is reused.

Utah counts only full-time, permanent residents in "per capita" number. The population count is limited to the people who live in Washington County as their primary residence for more than six months of the year. The Division doesn't give credit for visitors, tourists, and second home residents as "equivalent" residents.

The Division is tasked with setting an evaluation metric that is applied consistently throughout the state. Both of these practices are standard and applied to every system throughout the state. However, the Division acknowledges in the specific case of Washington County, both practices result in an inflated GPCD compared to different practices.

The Division considers different practices. To date, we've not identified a different metric that can be consistently applied to all water systems across the state. We are certainly open to suggestions and some were offered in comments to this Plan.

The Division recognizes Washington County's commitment to addressing water use concerns in the county by actively working to reduce use and conserve water. Acknowledgement of challenges introduced by our evaluation metric doesn't imply there isn't more work that can be done in Washington County, and throughout the state. No change was made to the Plan in response to these comments.

**Colleen Winters:** In the 2017/2018 governor-declared drought emergency, Washington County neither took any large measures nor recommended any to its citizenry. The best it could do were a few timid suggestions. These are not the actions of an entity that is committed to smart use of its water. Over and over, the question is begged: If it can't manage what it has, why should it get more? ....several points are made through the report of different actions that must be taken in order to manage water in the state. Washington County does not seem to be doing a good job and exploring or acting upon any of these....I just cannot see that southwest Utah has made any honest and forthright attempt to use its water in any conservation-conscious manner at all. Lots of lip service; very little action. I contend that if it made a good effort toward both population control and water conservation, it would not "need" to keep looking for more water. Rapid growth is again mentioned. Table 1-1, goal #1, "increase water conservation efforts...": Washington county makes almost no effort to conserve! It needs to explore and develop how to do so before even beginning to consider grabbing more. Graphic on pg 62, "Expanding Turf Buyback" and others: Why are things like this not in Washington County, of all places? Frankly, Washington County does not seem to have any programs to incentivize water conservation and does not seem to promote it beyond the barest minimum. If programs exist, the are very poorly publicized. We need to do very much better at this. Pg 69, Municipalities: Washington County and St. George in particular sends a very weak message about water conversation. I'm not sure about bullet 5, but regarding the others, the county courthouse and many of the city-owned buildings are loaded with water-heavy landscaping which could be changed to set a better example. There is the torrent of water flowing down downtown that I mentioned earlier. I'm not sure about HOAs, but by city ordinance, public street medians are heavily planted and are regularly watered. Although desert plants are largely used, thirsty pine trees are used as well. All of this is not in line with a city that cares about its water usage. All of this is quite easily actionable with solutions that would still be in line with its seeming goal of beautification.



**Ingrid Akerblom:** Meanwhile, we are wasting time by not adopting sound conservation measures including smart growth strategies to alleviate the coming water constraints particularly in Washington County. For example, The WRP targets a very modest residential water use reduction for Washington County, and the plan suggests that the county reduce water use to 240 gpcd by 2040 with no improvement to 2075. Similar desert communities are currently using 140 gpcd. Washington County will not run out of water in 10 years (as stated within the WRP) if it develops other local water supplies and implements meaningful water conservation practices throughout the county. Excerpted From a St George news article 2020- 'since 1990, the population has more than tripled in the Las Vegas area, which gets nearly 90% of its water from the Colorado River. But by treating and recycling almost all water used indoors – for flushing toilets and running dishwashers, for example – and replacing nearly 305,000 square miles (790,000 square kilometers) of grass with desert-friendly landscaping, the area has consumed far less than it's allocated (from the river)'. Washington county's excessive water use—302 gallons per capita per day (GPCD)—is more than twice that of Phoenix and nearly three times that of Tucson (!). Both in my own neighborhood and when visiting Washington County, I observe the extreme waste of watering lawns to excess and then track the water flowing like rivers down the streets and into sewers. Clearly there is a LOT of room for conservation to help meet future water needs. Water conservation alternatives could be implemented incrementally at lower cost and with greater reliability eliminating the need for the LPP altogether; such water conservation practices have been very successful in other western cities as noted above. It appears that alternatives involving conservation were not taken seriously in the WRP. It is critical that the WRP be modified to focus on conservation. The WRP should incorporate elements of the 2017 State Water Strategy plan: "Provide adequate funding and investments for effective water efficiency and conservation. Funding and investments are needed to fully realize the potential contributions and return on investment that water efficiency and conservation efforts can make to provide for Utah's water future".

**Lisa Rutherford & Paul Van Dam:** The regional goal for the Lower Colorado River South area of Utah that includes Washington County is still much more than we should be using. We don't care how you count the apples and oranges!

**Nobel Keck:** I have seen Golf courses watering in the heat of the day, don't they get the message. I have seen wet sidewalks in areas where the city and or county is watering. Why have grass in Washington County, why not go to desert vegetation. Why doesn't the State or county set water rates that discourage waste, like Tucson, AZ has done.

**Richard Spotts:** ....highly successful lawn conversion xeriscape incentive programs that have been underway in other cities for years have yet to be initiated in Washington County.

**Sarah Longoria:** I believe that before starting on development projects like the Lake Powell pipeline and Bear River diversion, the State of Utah should focus on reducing the water usage of its residents. There are many ways that other states incentivize and/or mandate water conservation that could be used in Utah as well. Development projects should be a last resort, used only once all conservation efforts have proven not to be enough.

**Tom Coburn:** I have lived in Washington City, Utah since October 2018. Our family moved here from Las Vegas where, despite very advanced and robust commercial and residential water conservation measures, we witnessed the serious drain of water from Lake Mead. In contrast, living in Utah, we do not see or feel a daily culture to conserve water. The explosion of large housing developments with huge homes and yards; extensive multiplex units spreading over the county, and new commercial buildings all with grass landscaping requiring precious water. The 7 state Colorado river water treaty is almost 100 years old and population forecasts, droughts, climate change and water volume assumptions are all outdated and exclusive. There is NO common sense in planning for a billion dollars pipeline to bring water to greedy developers and ignorant politicians and then tax whatever cost on all southern Utah residents. The solution is not a pipeline but a moratorium on development without a neutral conservation and water recycle plan in place. Also, the current idea to drain Lake Powell in favor of filling Lake Mead and it's water conserving justification has to be considered above inserting a straw in an empty pond. The legal fight for water is going to take years to reach some sort of new plan for the upper and lower Colorado river states, but we must CONSERVE NOW and slow the pace of development straining our southern Utah water resources.

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** The Plan touts regional conservation goals, but in the Kanab/Virgin River watershed it only proposes decreasing usage by 14% over the next 20 years (from 305 gpcd in 2015 to 262 gpcd in 2030). This is the second smallest reduction in the state in one of the driest regions. That "goal" is wholly unacceptable. Many communities in other parts of the southwest have proven that more population doesn't necessarily translate into more water demand.

## Demand - Integrated Planning

**General Response:** We acknowledge there is a "sweet spot" of housing density. Language was added to clarify that high-density housing alone is not a solution to Utah's water issues. The water and land planning integration program will help communities consider this element into their planning and redevelopment efforts.

**Eric Sorensen (Metropolitan Water District of Salt Lake & Sandy):** Page 10 – The last paragraph mentions higher density housing projects as way for Utah to have sufficient water to meet projected growth. Higher density housing may be part of a solution to Utah's water supply issues, but this type of development needs careful consideration. High density housing reduces per capita water use by reducing seasonal outdoor water use but year-round indoor water use increases. Water supply does not benefit if housing density is high enough to increase water use per unit area.

**Jake Alvey:** We should consider water use by residential areas in these future plans.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** ....the Plan is focused on agricultural and municipal water use, but the commercial driver of development in Utah is CII. Should Utah be courting higher water use industries given our water supply constraints? For example, the Point of the Mountain state land is being retained and re-developed by the public in a water-wise fashion. Whatever industries and companies help to develop that site and seek to locate there should be required to help foster sustainability, including efficient water use, in a broader sense. Their sustainability policies as companies should be considered and made an important criterion for their inclusion as partners with the state in that project. \*Commercial, industrial, and institutional (CII) use is reported to the Division of Water Rights and is included in our municipal and industrial (M&I) use. Projecting CII water use is challenging because it is specific to the user. The Division doesn't have good data to project additional CII water use as the population grows. Considering CII users who have their own water rights further complicates projecting CII use. As Utah encourages new CII development, we have to revise projections to reflect water use for those new uses. The Division acknowledges these challenges and is working to improve our estimates and projections.

**General Response:** Including water considerations at the beginning of the planning process will improve the design of water infrastructure and efficiency of water management. An effort to integrate water use considerations into land use planning was funded by the Utah legislature in 2020. The Division has contracted with the Babbitt Center for Land and Water Policy (Babbitt Center) to develop and implement the program in Utah. The Babbitt Center is teaming with Utah State University's Center for Water efficient Landscaping) and Western Resources Advocates on the project for the Division.

The program will begin with pilot programs in at least two communities to assist with integrating water use considerations into local land planning. The pilot program will also allow staff to practice using the resources developed specifically for Utah. Division staff will be working with communities to implement the program with the intention of being able to continue the program with interested communities in the future. No changes were made to the Plan in response to these comments.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** We fully support the Division's efforts toward integrating land use and water planning and the emphasis on new development. However, opportunities for integrating land use and water planning extend far beyond the landscape ordinances that are specifically mentioned.

**Lisa Rutherford & Paul Van Dam:** Land use planning and water planning must work hand in hand and should have been that way before now. It's good for the state to enlist the help of local officials but given the reluctance of local officials particularly in Washington County to make truly conservation-based decisions that seems farfetched. At the rate Washington County is growing this planning will be far behind the growth.

**Nick Schou (Western Resource Advocates):** Address specific tools for integrated water and land use planning (pg. 62) – This section of the Plan currently limits integrating water and land use planning to landscape ordinances, which greatly underrepresents the available planning tools for which water efficiency can be integrated. This includes general planning, land development codes, ordinances, zoning, water connection charges, and many more. Water efficiency can be integrated throughout the development process. See: <https://westernresourceadvocates.org/publications/integrating-water-efficiency-into-land-use-planning/> Further, the Plan should expand upon its commitment to integrated water and land use planning by explaining the steps it has taken – in partnership with the Babbitt Center for Land and Water Policy and Western Resource Advocates – to develop a Framework for Community Action <https://water.utah.gov/integrated-water-land-planning/>. The Framework illustrates the many ways communities can better integrate water and land use planning. It includes four stages and resources to aid in implementation. Two additional components – a Stakeholder Checklist and the Community Self-Assessment – provide tangible guidance for communities to form a team for integrating water and

land use and to track their progress on integration activities. Finally, the Plan should better explain the State's financial commitment over the coming years to providing trainings for Utah communities on how to integrate their water and land use planning processes. Include a new integrated water and land use planning goal (p. 62) - An important opportunity for ensuring progress is made on the Governor's priority to integrate water and land use planning, is to set a statewide measurable objective. WRA's recommended objective is that by 2030, all Utahns will live in communities that have incorporated water savings into their land use planning. Include a water element requirement in General Plans (p. 62) - Utah should take steps to implement regulations that require a comprehensive, water element in all new General Plans. Standards should be developed what to include in the water element include supply and demand forecasts, conservation tools and water-related policy actions to implement.

**Paul Burnett (Trout Unlimited):** PG 12 If you look at the historical imagery of Herriman, most of what is now part of the city was not traditionally irrigated land. It was either rangeland or dryland farming. This type of development pattern is leading to the serious water crunch because developers are just filing for exchange applications on reservoir storage, putting additional pressure on water resources. Until we solve this development pattern, water management is going to continue to be development focused.

## Demand - Limit Growth

**General Response:** Counties, communities, municipalities, cities, and towns plan for growth within their boundaries. The Division doesn't have the authority to direct those planning efforts. The Division acknowledges our water use projections are directly related to population. We will consider trends identified in the review to revise water use projections in the future. The Division is working on a program to help communities integrate water use considerations into their planning processes. At this time, no change was made to the Plan in response to this comment.

**E. Amriott:** Do water demand projections necessitate thinking about caps on population growth within the state, rather than more water demand development projects such as Bear River?

**Cheri I.:** Washington County is slated for a huge population growth. I am truly concerned about the overdevelopment that is being allowed. Someone needs to wake up and put a stop to the overdevelopment and realize there just isn't enough water to support the slated increased population. I don't feel like the current water conservation plan addresses the issue of overdevelopment in this area. The Governor wants Utahns to conserve water, but yet you are allowing way too much development and there is not enough water to allow for the increased population.

**Colleen Winters:** Far from living within its resources, Washington County is actively promoting growth. The best way to ensure water for the future is not to take someone else's water (which is what it is because we all share) is to LIMIT growth, not promote it. Even though population growth is beyond the purview of this plan, it is well within the purview of the Utah government and general citizenry, from the top to the bottom and every place in between. On top of that, growth is being actively and aggressively pursued! More growth = more water demand. The best answer to that is, STOP PROMOTING SUCH GROWTH!!

**James Teton:** Since your models are based on 2015 data the population has exploded along the Wasatch front. Almost every block of central SLC has a new multi-story apartments or condos. The home building in the south Salt Lake County and Utah County has exploded. The result of the unbridled growth and the reduced precipitation is that the Great Salt Lake's inflows from the Bear and Jordan Rivers is half of what is normal. To try and sustain such unbridled growth is impractical and impossible without dire consequences.

**Jerry Winters:** please for the well binning of all man kind STOP THE OVER POPULATION OF THE WORLD. And pacifically the Mohave desert. Washington county is just fine as a retirement, vacation and golfing destination. there is no need to spend billions of tax dollars on a straw to a mud hole. That money would be better spent on climate change than the watering of million dollar homes for the rich that only live in them part time.

**Kristen Banzh:** Politicians need to stop pushing for growth and trying to turn Utah into NYC. Not only do we not want that, but we simply do not have the resources. That is a blaring fact that should be undeniable this year. At this rate of growth, our children will not be able to live in Utah and raise their own families here. There will not be room. The people of Utah have no desire for the record breaking growth that is being imposed upon them and we do not have the water for it. No one needs a golf course for a lawn. Despite having a extreme lack of affordable housing we continue to build massive, space and resource stealing houses with huge lawns. Wealth should not equal being given more water to keep ones palatial grounds looking green. There should absolutely be restrictions put on how much water and land a residence can use for the purpose of landscaping. Its completely wrong to be in a drought and see someone wasting gallons of water on a lawn that is three times bigger and uses five times as much water.

**Leslie Kovach:** As a citizen of Salt Lake County I am concerned that in this water draft there is only talk about restricting or trying to get water from other areas. I would like to see the plan to talk more about restricting the uncontrolled growth and how any new developments need to have all the costs and some of the future cost placed on each new project. It seems that the if we don't control the water we currently have and continue to grow with out understanding and restrictions of water and water resources we are doomed to fail as a state. Comments about converting agricultural land to municipal and industrial water use seems to undermine the quality and open space that we are wanting in our state. Not developing land is an option that needs to be considered when we talk about what we want to pass on in the future. Be realistic we live in a desert, and in the Great Basin all of our water evaporates, just like our future, if we as residents and citizen of this state bow to the continual development pressure.

**Meagan Leigh:** We need to curtail development, it is out of control in Washington County.

**Owen Shiverdecker:** As such a building freeze should immediately be put in effect unless water recycling improvements show a net zero increase in water use. If and when the water forecast improves limited growth could be studied but unlimited growth in a desert cannot be sustained.

**Paul Burnett (Trout Unlimited):** Page 73 Utah has significant decisions to make in the face of continued human population growth. This chapter takes the deterministic approach that our water resources must continue to be developed to meet future population growth assuming that the per-capita water use is baked in. Per-capita water use is a modifiable variable and one that should be emphasized through more aggressive conservation initiatives before undertaking expensive, controversial and ecologically destructive projects such as the Bear River Pipeline, Lake Powell Pipeline or Iron County development. This chapter should take the perspective that new development should be a last resort after major efforts are made to reduce consumption. Many of the natural systems that provide our water are already at a tipping point. Lake Powell continues to drop, and Great Salt Lake, a bellwether of sustainability on the Wasatch Front, has reached historical low water levels. Society is not disconnected from the watersheds that feed these systems. Expanding development at the expense of these systems represents an imbalance in management and a key these systems should be considered as a key component to basin planning.

**Richard Gorton:** Another issue is over building, which has a enormous impact on water and other resources. A plan of limited growth must be in place to protect the existing environment and the people of Utah as a whole. Sara Curry: Considering the plans for high density housing in Salt Lake County and Sandy, I am very concerned that Utah just doesn't have the water to support the population. My fear is that big business will boon at the expensive of our property values when the water usage is (and now at) is no longer sustainable. There is a lot less snow and rain now.

**Stephanie Smith:** My husband and I moved to St. George from northern Utah twelve years ago. We came here to retire---to stay here until we die. However, the explosive growth over the last ten years coupled with the drought has now made us worry that we may not have a good future here. We understand that young people, born here, who want to stay here, need opportunities for jobs, etc. But if we keep growing at this rate there will not be enough water to continue the lifestyle we came here for. At what point does Washington County apply a growth moritorium?

**Zeppelin Zeerip:** St. George and the Logan area cannot continue to grow at their current rates and must face the reality that growth for the sake of growth is the ideology of the cancer cell. I am of the opinion that the state of Utah should take a page for Oakley's play book and enact a moratorium on new building, or that all new homes must be water neutral.

## **Demand - Management**

**Colleen Winters:** St. George does not seem to have any management of its demand. It just wants more. Washington County does not demonstrate responsible, sustainable use of the water it currently has. Its unchecked new construction nearly always includes grass yards. Every spring and summer there is a torrent of water running through downtown streets in St. George that the City excuses as being acceptable because of it "just" being "gray water," not treated potable water. It has announced a plan to construct a water park in the future -- undoubtedly using water obtained from the pipeline. In view of all this, since it cannot be responsible for the water it has, why should it receive more water, and at such a financial and environmental cost? Numerous mentions are made throughout the report of "new" water development being needed because of Utah's rapid growth (and in Washington County, very rapid growth). Just as children must learn to live within their allowance and just as adults must learn to live within their own financial constraints, Utah must learn to live within its water resource restraints. Just as profligate spenders can end up being bankrupt, so will Utah be bankrupt of water if we do not learn to budget ourselves on a very large scale, and in particular Washington County. Living within one's resources is basically at the opposite end of the scale from finding ways to get more and more and more. Southwest Utah will never have "enough" water because it would prefer to simply keep demanding more. Page 83 states that the

proposed Lake Powell pipeline would [only] DELAY water shortages. It is time we recognized that what we HAVE will HAVE to be "enough" because sooner or later, there will be no more of this finite resource. The pipeline would not solve anything for Utah and would create FAR worse problems for others. Lake Powell was already over-allocated at its outset and it has only gotten worse since then. Water consumption in the desert: As humans demand more and more water and more space, that leaves less and less water and space for the non-human things that live in the desert. In St. George, this specifically includes the desert tortoise and the Bear Claw poppy, both of which are endangered. \*Counties, communities, municipalities, cities, and towns plan for growth within their boundaries. The Division doesn't have the authority to direct those planning efforts or to limit growth. The Division is working with communities to plan for growth and to integrate water use considerations into their land planning processes. No change was made to the Plan in response to these comments.

**Katie Newburn:** This plan is an opportunity to recognize and prepare for the reality that Utah is experiencing alarming pressure to both the supply and demand sides of our limited water resources. Utah is far behind in modernizing our water consumption habits and culture. The days of unmetered secondary water use and "use it or lose it" water rights must end, and the Division of Water Resources needs to use this plan as a roadmap to bring Utah's water management into the 21st century.

**Gregory Wilson:** I am a geographer via the University of Utah, with a Master's in Integrated Water Resources Management from McGill University. I am also a Great Salt Lake researcher, particularly in the context of management. I'm grateful to have the opportunity to submit a public comment. Although I would love to offer something and contribute professionally, I comment rather as a member of the community and an activist. In general, reading the 2021 Water Resources Plan, the idea of "management" is missing from the perspective of the DNR. It is very hard to disagree with any of the priorities of the DNR for conservation and preservation. However, when discussing the supply of water, it seems the DNR is content to let "demand" dictate the management of water. This, despite the fact that 21st century water management concepts emphasize managing the demand for water, rather than managing the supply. As such, it seems this Water Resources Plan takes an outdated approach to water resources management. Rather, the DNR seems content to be told what demands are and will be, via the use of models and projections. Such useful projections ought to be used as scenarios to water use reduction plans. I suggest the creation of a Water Resources Management Plan rather than simply a Water Resources Plan. This passive approach to management assures that demands will inevitably increase with growth while conservation becomes an afterthought. The situation in Utah demands a stronger approach to decreasing overall water use. Utah already uses water at a deficit. As a state, and per watershed, we should be doing all we can to decrease that deficit. Putting resources and policy in place to aggressively address these issues ought to be more of a priority of the Water Resources Plan and of the DNR. Thank you. \*The Division appreciates comments from different perspectives. Thank you for providing your thoughtful review. We acknowledge our water use projections are linearly associated with population. We will consider trends identified in the review. No change was made to the Plan in response to these comments.

**General Response:** The Division recognizes the complexity of water management. Managing water demands requires balancing available resources with a wide spectrum of needs. A single best path forward doesn't exist and the best path for one area isn't the best path for other areas. The Division doesn't have authority to implement nor enforce water management actions. The Division provides information and makes recommendations.

The Division appreciates that agricultural land conversion to municipal uses will be different than our estimates. The Division isn't predicting how much land area and associated water will transition to municipal use. We are indicating there is a potential that some land and water may become available, if circumstances allow. We hope water conservation will be greater than we projected. We recognize that demands may be curtailed in the future as a result of thoughtful and intentional development.

This Plan reflects current practices and conditions. It isn't prudent for the Division to base our models and resulting projections on actions that have yet to be demonstrated. We are responsible to identify, based on available data, where we anticipate challenges. Utahns hasn't fully embraced conservation in past decades. Developing communities in Utah haven't taken water availability into consideration during planning or when negotiating companies to locate in Utah.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** The Plan notes that future water supply and demand uncertainties make predicting future needs challenging. Assuming "for simplicity's sake", however, that reliable water supplies will remain constant through 2070 given the pace of climate change is aspirational at best. The Plan also states that "while water conservation is important" it will not be enough to meet future needs. However, since the true potential for water savings through conservation is not adequately or accurately quantified by the Plan, how can this be a certainty? The amount of agricultural water conversion to M&I water uses also seems much lower than is possible, which is to say that the potential of water conservation is not fully realized by the Plan. The Plan itself notes that need for Bear River Development was originally anticipated for 2015, yet we have reached 2021 without having to develop this water due to "conservation efforts, technology

improvements, and smaller water development projects” and now do not anticipate needing it for three more decades, if then. Large water development projects, therefore, should not be accepted as inevitable solutions to Utah’s water challenges.

**Marcelle Shoop (National Audubon Society):** The Division’s focus in general on reducing water consumption is critical to solving the water limitations and challenges facing the state of Utah as it grows at unprecedented rates. Addressing the current and future water demands and over consumption in the municipal, industrial, and institutional settings as well as optimizing agricultural water use are vital to finding the pathway to sustainable water resources to meet sustainable and responsible growth. Long-term efforts to change water consumption dynamics, particularly in the face of climate change are essential in protecting the irreplaceable Great Salt Lake. To the extent that additional resources are needed to achieve those goals in reducing water consumption we attempt to provide support where appropriate. While we recognize the Division’s responsibilities are subject to certain legislatively mandated water development projects, the Division’s role in planning and improving its water supply and demand models, as well as other water planning efforts are also essential to ensuring that the State is making good water management decisions, which do not need to rely on large water development projects. This includes pursuing integrated water planning efforts in coordination with many other stakeholders, not just water providers, in recognition that the State’s water future and its water security is linked, and particularly linked with the preservation of Great Salt Lake. We encourage the Division to continue its focus in helping to change and reduce the water consumption dynamic across the State as the primary way of meeting the State’s water demands and living within the means of its water supply.

**Megan Nelson (The Nature Conservancy):** Basing need on population growth may not adequately cover demand for all areas of the state, such as Grand County, whose population isn’t necessarily increasing as much as other parts of the state but the rate of second home growth, hotels, and a pending university means we will need significant water. Although Grand County’s population is around 7,000, a recent audit noted there are 2.4 visitors, on average, in Grand County for every permanent resident. Over 1.8 million visitors recreated in the national parks of Southeast Utah last year all drinking water and taking showers.

**Nick Schou (Western Water Resources):** Projected M&I water demand overstated, p. 52 - While every state, region, and municipality is different, we feel it is important to note just how common it is for overall water use to decline, despite significant population growth. This has been occurring for a variety of reasons, including general water conservation, market trends in fixtures, demographic shifts, and changes in housing stock such as denser development. In other words, we can expect these trends to continue. See, for example, Table 1 (page 5) of the 2020 article, “Decoupling Urban Water Use and Growth in Response to Water Scarcity”: <https://www.mdpi.com/2073-4441/12/10/2868>. The data clearly demonstrates that almost all municipalities studied from across the West experienced significant declines in not just per capita, but overall water use. The Water Plan should acknowledge this trend in decoupling water use and population growth, as it can be expected for Utah communities, particularly given Utah’s strong commitment to active water conservation outlined in Chapter 5. Projections that run completely counter to these trends, such as the graphs on pages 54-55, don’t reflect the significant declines in water usage we’re seeing throughout the West. For example, in a data-driven analysis conducted by WRA and WaterDM, while Washington County’s overall water use is projected to increase overall by 2075 - in the face of nearly 300% projected population growth - analysis showed overall water demand of 122,232 AF, an increase of approximately 47,000AF or 63% compared to today’s water demand. This demonstrates that despite significant population increases, it is unrealistic to assume overall water demands will also significantly increase. An increase of 63% is much more in line with market trends and conservation efforts, as opposed to the Lake Powell Pipeline DEIS which projects a demand of 184,500 AF (or a 146% increase): <https://westernresourceadvocates.org/publications/local-waters-alternative-to-the-lake-powell-pipeline-2-0/> (p. 68). Demand management program (p. 114 & 119) - The Water Plan includes little discussion of a Demand Management program other than mentioning the program is “ongoing” on page 114 and generally stating at page 119 that Utah should “research and engage stakeholders” in developing such a program. Given the likelihood of decreased Colorado River flows, Utah (like all Upper Basin states) must make increased efforts to develop such a program. We expect this will include additional work by staff at the Colorado River Authority of Utah, the Utah Division of Water Resources or another state agency with the tasks of researching and developing the outlines of a potential Demand Management plan, ensuring there is sufficient staff capacity and funding for such research, engaging with stakeholders to identify potential projects, securing relevant funding, and developing metrics for tracking project outcomes.

**Nobel Keck:** The information in your report was all subjective and maybe nice to know but your are not addressing the problems. Development in area with subject supplies of water needs to be limited and stopped. They say they are replacing farmland water with houses. I don't see any farmland in the "colorland" development! Once Lake Powell and Lake Mead are below the generator intakes Vegas, AZ and CA will take a big hit, the water shortage will not be slow but sudden!

## Demand Model

**General Response:** 2015 is the best dataset available. The 2015 data was reviewed by legislative auditors and a third-party engineer. It provides a strong basis for the Divisions modeling. The Division recognizes projection models have inherent flaws. For this reason, the Division considers project model results - including the population projections provided by the Gardner Policy Institutes - as trend indicators not as absolute values.

Climate change acceleration wasn't included in our projections. The Division used a linear distribution over the projection period. This Plan projects 50 years into the future for context only. It is a Plan to guide the Division's activities for the next five years. In 2026, progress will be evaluated. The Division is aware of these challenges. Over the next five years the Division will refine assumptions and models to reflect current conditions. No change was made to the Plan in response to these comments.

**Colleen Winters:** Graphic 4-1: For southwest Utah, the graphic for when use exceeds reliable supply shows 2040 as the projected year for both Baseline and Using RCG. This suggests to me that the RCG is too modest for the expected growth rate. Therefore, action would be to reset the goal and/or take action to reduce the expected growth rate. This posit is supported by graphic 5-2 on page 61. Southwestern Utah should be the place where water use is the LEAST, not the MOST. Usage should be in line with conditions. Several projection estimates in this chapter are based on 2015 data. Both growth and climate change have changed in an accelerating manner since then. Did projections factor this in? If not, then projections are overly optimistic and possibly invalid altogether.

**David Rosenberg (Utah State University):** Better emphasize Utah's promising water situation. Most demand/supply plots for the baseline and regional conservation scenarios in chapter 5 and Appendix G show demand within supply through 2045 and beyond. Tout this finding! Further improve Utah's situation by conserving more water. An exception is the Jordan River basin in 2070 (Figure 4-2). Here the plan can discuss the basin-specific water management strategies to help Jordan River water users. Remove the "No change" demand scenario from all plots (Chapter 4 and Appendix G). The no change scenario references 2015. The "baseline" scenario references 2019. Water use changed - decreased - from 2015 to 2019 (UDWR data, results not shown). The 2015 no change scenario is no longer valid or possible. The 2015 scenario inflates and overstates future water demand. Keep the scenarios for 2019 baseline and regional conservation goals that are possible. Add a new third scenario that is also possible - more aggressive conservation than the regional goals. Provide a quantitative analysis that shows how the 9 demand factors affect future water demand. Make the analysis interactive so Utahns can see and learn how demand factors shape future demand. See an interactive example for the Weber Basin (Everitt, 2020; Figure 7 and <https://rpubs.com/Jeveritt/612064>). To further build credibility with the public, compare prior population and demand forecasts to subsequent observations. Explain what was learned from the comparisons and what was improved.

**Megan Nelson (The Nature Conservancy):** Climate change should be considered in the No Change Scenario. The Plan acknowledges a steady and even increasing impact of climate change on evapotranspiration and precipitation. Additionally, Chapter 3 states what the Division is using for increase in evapotranspiration and reduction of future supplies in planning to accommodate for climate change. The conservation or demand changes are variable, but climate change impacts to water supply are a constant not impacted by water management decisions. The dashed line showing potentially diminished reliable supply due to climate change should be on all of the modeling graphs.

**General Response:** The Demand Model projects a water demand associated with municipal and industrial water use for an increasing population. Agricultural water isn't provided by M&I water providers and isn't included in the Division's M&I Demand Model. The Division doesn't compile agricultural water use data. Agricultural water use estimates are calculated from an average water allocation value and the acres of irrigated agricultural land area. Please note: The Division of Water Rights would like to see this calculation refined to more accurately reflect actual agricultural water use. More resources are needed for that effort.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** This chapter provides a description of the Division's Water Demand model as it pertains to municipal and industrial water demand but does not account for agricultural water use. This is a significant weakness considering that fully 75% of total water used in the state is used by the agricultural sector and that the conversion of agricultural water to M&I uses is recognized by the Plan. In addition, the CII water included in the model does not include the self-supplied industrial water reported in Table 2-2. Why doesn't the Water Demand model include system losses? And why is future growth projected without considering the reductions in use that have been achieved in other western communities? The Plan considers the effects of climate change, so why not consider the effects of conservation? By using this model, the state greatly underestimates the capacity of conservation to meet future water supply needs.

**Lisa Rutherford & Paul Van Dam:** The state's Water Demand Model does not account for agricultural use and yet much of the water will end up being M&I as this state grows. It seems essential that the projections for agricultural conversion be adequately incorporated into the Water Demand Model. The Plan states that "Where possible, it identifies water use trends and makes projections of water use" and states that the projections of M&I water need are "based on current and historical data reported." Again, this is apparently untrue since the projections are based on 2015 data.

**Marcelle Shoop (National Audubon Society):** The Foreword states that "This Water Resources Plan is a planning document that looks 50 years into the future . . ." The Foreword also explains that the plan "provides a comprehensive look at Utah's current water use and supply conditions and future demand scenarios." An important aspect of the water resources plan for a 50-year outlook is to consider a range of factors that can affect water supply and demand in those 50 years and further out as well. The plan focuses a great deal on future municipal and agricultural demand. While the discussion in several Chapters indicates that industrial use is lumped with municipal (M&I), it is not apparent from the discussion on water supply and demand whether all industrial water demands – particularly future water demands have been accounted for in the modelling and whether and how those may impact demand and supply estimates. **\* The Division's projections will be updated whenever this Plan and conservation goals are updated. The further a projection is made into the future, the less reliable it is. The Division acknowledges water use will change in the future. We are committed to characterizing water use as accurately as possible and adjusting our projections at regular short intervals (5 years or less) to bring them in line with actual conditions.**

**General Response:** The Demand Model used both the audited 2015 M&I Water Use Report data and data used to establish regional conservation goals. The 2015 M&I data is the most current independently reviewed data available to the Division. The projections are based on actions the Division and a consultant anticipate Utah residents will adopt as informed by past use and trends. Our assumptions recognize some residents will adopt aggressive conservation measures, while others won't change their behavior. The Division agrees water conservation could be more aggressive, however, the Division doesn't have authority to require compliance with recommended actions. It would be irresponsible of the Division to plan for water use less than trends project based on hopes Utah residents will conserve more water than projected. When a conservation goal is met, it will be reevaluated, the Division will recommend additional conservation measures, and the Demand Model will be run with new data and assumptions. No change was made in the Plan in response to this comment.

**Lisa Rutherford & Paul Van Dam:** The Plan asserts that "Future water supply and demand uncertainties make predicting future needs challenging. However, when you put the Division's best estimates of 2015 reliable supplies (from Chapter 3) and the demand projections (from Chapter 4) together, a picture of possible future water needs begins to take shape." The 2015 reliable supplies and the demand projections based on excessive use provide the "possible future water" picture but not a reliable one. The 2020 Lake Powell Pipeline DEIS shows our Washington County water consumption lowering to 240gpcd in 2040 and then not getting any better. That is without justification since other vibrant cities have been growing and already use much less water than we do.

**Lisa Rutherford & Paul Van Dam:** Graphic 4-2 depicts when river basins will run short of M&I water supply based on customer demands but that demand – high gpcd usage – does not reflect the reality of conservation that can be achieved. Table 4-1 show that Virgin/Kanab has a reliable supply of 79,100 af as of 2015. However, it omits the fact that the state and district have projected a reliable supply of 98,727 af with planned projects, excluding the Lake Powell Pipeline. Because that 98,727 af is omitted from the future projections, it makes the situation look more dire than it really is. With Regional Conservation Goals that would take us out to almost 2050, and that is without extreme – what many consider "reasonable"! – conservation. Add to that the fact that the project includes water consumption that will be no lower than 240gpcd and it's clear that warning residents in this area that they will run out of water in ten years it outrageous!

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** The Plan models three scenarios of future demand: "no change," "baseline system demand," and implementing the state's "Regional Conservation Goals," the most aggressive scenario. But the Regional Conservation Goals are not very aggressive in reducing gpcd. In fact, goals for conservation still yield usage in the range of the mid-200s gpcd. Proposals from 2015 to 2030 include: Bear River from 304 gpcd to 249 gpcd; Kanab/Virgin River from 305 gpcd to 262 gpcd (smallest reduction at 14% other than SL at 11%); and Statewide from 240 gpcd to 202 gpcd. The tenor of the text is that this is just terrific, when in some parts of the state it's below the available supply and usage is still higher than it should be when comparing to other southwest communities.



## Development

**General Response:** This Plan presents actions the Division is taking within the next five years. It isn't intended to provide a full description or evaluation of projects. The Division website is a resource to learn about projects mandated by the Utah legislature or being pursued by other entities. The Division supports development projects when appropriate. The Division has well established process for obtaining support from the Division for projects. Comments concerning projects which are not the focus of the 2021 Water Resources Plan are included in this appendix and a general response is provided.

**Lisa Rutherford and Paul Van Dam:** The exception to our favorable response is the continued support for water development plans that are not currently needed and will not be for several decades. Many of these are ill-conceived and benefit specific regions that have to date not demonstrated a commitment to conservation or water management strategies that are critical first steps in managing the State's water resources. We cannot agree with continued support for these projects at this time. How is this plan going to be implemented and where do you start? We are concerned that without an action plan attached, there will be little incentive to take responsibility, to act, and to achieve results. The plan would be much stronger if timelines for specific action items were added, including an annual reporting on progress. One of our concerns, and one that the entire State should be concerned with is assuring that water gets to Great Salt Lake and that a minimum elevation be established and maintained. The negative consequences to the environment and costs to human health and air quality are huge and critical. And, the inevitable costs to mitigate the effects of a dry lake will be monumental as we know from the experiences in California of a dry Owen's Lake. Several millions are spent each year to "contain" the hazardous dust and keep it from blowing into heavily populated areas. There are numerous other consequences that cannot be overlooked including the loss of a vital aspect of our economy, migratory birds and wildlife, the loss of "lake affect" and its impact on snow pack, not to mention the social consequences of reconciling the death of a nationally known natural feature. We are also concerned that much of the data used in producing the plan is from 2015. There is more recent information about water resources and use that could and should be used to make plans and decisions. While there is a rationale provided for using 2015, there is additional "reliable data" that might paint a clearer, more accurate picture. Thank you again for your efforts in producing this planning document. Water and its proper management are some of the biggest challenges we face as a state, a nation, and as a planet.

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** The Plan keeps returning to the tired justification for big water projects, based on the notion that more population necessarily needs more water, which has proven false in many southwest communities (even in Utah—and even in St. George).

## Bear River Development and Great Salt Lake Comments

**General Response:** If you are commenting about Bear River Development (BRD) and Great Salt Lake (GSL), you are likely aware of the difficulties of trying to share a limited resource with a growing population and the environment in a desert climate. We are grateful that you have taken the time to study these issues and to reach out to the Division.

Delivering safe, clean water to millions of people and planning for the future growth is challenging and complicated. Many who live in Utah aren't aware of the unique attributes and benefits of GSL: lake-effect snow, migratory birds, mineral mining, brine shrimp industry, and tourism. They may be unaware of the challenges GSL is already facing and don't realize how their water use affects GSL. Additionally, water law, legislation, local and state policies, interstate compacts, ordinances and rules governing water use and supply are established by various entities, including the Utah Legislature, municipalities, water districts, home owner associations, private water companies, and irrigation or canal companies. All of these factors into planning efforts.

Planning for the future is based on current projections of population growth, water use, and water supplies. Ultimately hard decisions will be made to balance water uses. However, Bear River water is used in the future, planning begins decades ahead of actual growth because developing water from a large project takes at least 20 years to plan, design, and construct. During the planning period, the Division of Water Resources (Division) and the four water districts that would deliver water from a BRD project are continually looking for solutions that can push out the need for water from a BRD project. When the Bear River Development Act was passed in 1991, the projected need for BRD water was in 2015. The Bear River Development Act, enacted as Utah code title 73 chapter 26 (UC73-26), directs the Division to "develop the surface waters of the Bear River ... as authorized and funded by the Legislature [Utah Legislature]". The Division is mandated by law to continue monitoring conditions along the Bear River for potential development as it becomes necessary. The Division's activities are aligned with requirements of UC73-26. Due to the focused efforts of water districts, the projected need for BRD water is now 2050 or later. Progress in water conservation and education, smaller water projects, and secondary meter installation have aided in pushing out the need for BRD water.

Projections used in planning efforts are moving targets that are consistently changing. Chapters 2 and 3 explain how projections of water use, supply, and population are used to plan for future growth. Chapter 4 also describes different scenarios that affect these projections based on water use and customer demand. The Division continues to look at all options to supply water for future growth.

**Amber Adams:** The Great Salt Lake is one of the most unique ecosystems on our planet. Furthermore, a loss of 8.5 in of depth could have significant impacts on the health of the ecosystem, as well as the health of inhabitants of the Salt Lake Valley. This plan has unacceptable risks. It cannot move forward.

**Amy Shafer:** I do not approve the Bear River Development Project. It will have a negative impact on the great Salt Lake and we need preserve that habitat. It is stated that the salt lake will loose an average of 8 1/2 inches. That impact on such a shallow lake like the Salt Lake could be devastating. Please do not move forward with that or any project that will have such a long term negative effect on our fragile ecosystem.

**Ashleigh Albrechtsen:** The biggest fantasy of all is acting as if it's perfectly feasible for the Division to pursue the goal of getting more water to Great Salt Lake at the same time it is pursuing the goal of developing the Bear River. The Division does the public a great disservice by holding those two goals up side-by-side and implying that both are possible. They are not, and the Division needs to be upfront and acknowledge that they are not. The citizens of Utah have a choice: they can either help save Great Salt Lake, or they can move forward with development of the Bear River. They cannot do both. There is no scenario where both are possible short of a complete reversal of the impacts of climate change on the state. It is nothing short of audacity for the Division to advocate "Keeping the 'Great' in Great Salt Lake" in the same document where it outlines how it is going to destroy the Lake through the Bear River development. It is equally audacious for the Division to estimate that the impact on the Lake of the Bear River development will be a mere 8.5 inches drop in elevation, without acknowledging the cumulative impact over time on the Lake of this diversion. The Division must also acknowledge that the size of the proposed diversion has to be significantly greater than the 220,000 acre-feet it intends to provide users due to system losses and evaporation.

**Bonnie Cooper:** While recognizing that an ever growing population in Box Elder, Cache and Weber counties demands creative approaches toward future municipal water needs, the Bear River Development in its current form and projected environmental impacts is untenable. Plans for the BRD project should be halted immediately until the state adopts a more proactive plan to allocate enough water toward the Great Salt Lake to keep water levels up and it's ecosystems intact. All of Northern Utah's population benefits from a healthy and sustained Great Salt Lake, and none of us living along its shores can afford the potentially devastating public health and air quality repercussions of a diminishing lake. Moving forward on water projects like the Bear River Development fails to recognize that environmental degradation and ecological collapse will have a profound impact on quality of life in Northern Utah, and ultimately reduce the public's desire to live in these areas, perhaps even making some locations uninhabitable. Please continue to research more creative solutions to Utah's water needs without adopting the Bear River Development.

**Brittany Parry:** The Bear River Development project will divert way too much water from the Great Salt Lake, which will only dry it up faster & create an unlivable state. Our air has already been rated as the worst in the world on certain days. How can you reside in a place that will most likely have the worst air more days than not if toxic dust from a dried up lake is what is circulating as well. Please reconsider the Bear River project & start considering treating our water here as the precious rare desert resource it is.

**Brooke Larsen:** The plan to develop the Bear River is out of line with the Division's goal to preserve and get more water to the Great Salt Lake. As climate change puts Utah in consistent drought, the lake cannot handle decreased inflows from the Bear River. It is not possible to save the Great Salt Lake and move forward with the Bear River development. Losing the Great Salt Lake is not an option for the health of our people, millions of birds, and the economic vitality of the Salt Lake Valley. It is nothing short of audacity for the Division to advocate "Keeping the 'Great' in Great Salt Lake" in the same document where it outlines how it is going to destroy the Lake through the Bear River development. It is equally audacious for the Division to estimate that the impact on the Lake of the Bear River development will be a mere 8.5 inches drop in elevation, without acknowledging the cumulative impact over time on the Lake of this diversion. The Division must also acknowledge that the size of the proposed diversion has to be significantly greater than the 220,000 acre-feet it intends to provide users due to system losses and evaporation.

**Calvin Holgate:** This plan will help further destroy the great salt lake forever, and prioritize human greed over sustainable husbandry of our land. It represents the ambitions of developers, not the interest of the public. Native peoples have been cut out of the process and once again have been treated as second class citizens by the pioneer elite of Utah, a continuation of a long pattern which we have never reckoned with. Please reconsider this proposal. Thank you.

**Caroline Nilsson:** Fully against this development, we as Utahns have GOT to start caring more about the health of the Salt Lake, otherwise this entire valley will become inhospitable for everyone in the horrifyingly near future. Health of current communities and ecosystems over the future profit for a select few. Please. We need to care, for the sake of all of us.

**Claire Adler:** The Bear River plan will condemn the already shrinking Great Salt Lake to disappearance, and as a native Utahn I am strongly opposed to it. The example of Owens Lake in California should give a stark reminder: the dry lake bed will pollute the air and cost millions of tax payer dollars in pollution mitigation. The loss of the Great Salt Lake will also destroy the habitat of numerous birds and other species whose survival is already threatened by climate change. Utah is a desert, and it's vital that our elected leaders prioritize our communities, rather than real estate profit, in how they choose to allocate our limited supply of water.

**Claire Taylor:** I ask that you prioritize the water flow to the Great Salt Lake, and do not proceed with the Bear River redevelopment plan. The 8.5" inches in water reduction will greatly deplete a lake that is already at a historic low.

**David Rosenberg (Utah State University):** The Lake is the namesake for our state's capital city. Keep the Great in Great Salt Lake requires more than passing a new law, asking parties to collaborate, and the UDWR provides model support. A vision should integrate across all the climate, supply, demand, agricultural, municipal, industrial, infrastructure, land use, development, water quality, legal, and watershed topics discussed in the plan. Further, engage parties in a process that leads to holistic, integrated, and systems management.

**Denise Cartwright:** Hello, thank you for the opportunity to comment on this issue. It's concerning to me as we experience the effects of extreme drought and climate change in real time that the DNR isn't taking seriously enough the potential for climate catastrophe in Utah. We are experiencing a mega-drought, and with Great Salt Lake drying up quickly it's clear that unnecessary and expensive projects like Bear River Development need to be taken off the table entirely. Bear River Development would cost taxpayers billions of dollars and would be catastrophic for Great Salt Lake and the citizens and wildlife in Utah. 8.5 inches, a conservative estimate, would be a devastating loss for GSL's ecosystems. I urge the DNR to take seriously the suggestions and expertise of FRIENDS of Great Salt Lake and Utah Rivers Council, who have dedicated decades to protecting Utah's water. Please take seriously our warming future in this desert climate and protect our water and Great Salt Lake.

**Douglas Tolman:** It is my belief that we should not continue any more studies or right-of-way efforts for the Bear River Development. This funding should be put towards assisting to local governments and land owners in conservation efforts which better utilize the water we are already using.

The issue which needs to be addressed is the Bear River Development, which reliable data shows would lower Great Salt Lake by nearly 1 foot. Great Salt Lake is already at a historical low, and is the keystone piece of our ecosystem. With new data coming forth about the microorganisms in GSL, and their part of the food chain which keeps our local ecosystem healthy, it is irrational to think that a plan which further lowers the level of GSL would be smart.

Additionally, the toxic particulate and heavy metals in the lake bed will be further exposed with a drop in lake levels. Wind storms kick these particulates into the air and into our lungs. With a vast majority of Utah's population living directly downwind of GSL, we cannot afford to expose more lake bed through our actions.

The issue which needs to be addressed is the Bear River Development, which reliable data shows would lower Great Salt Lake by nearly 1 foot. Great Salt Lake is already at a historical low, and is the keystone piece of our ecosystem.

**E. Amriott:** Great Salt Lake cannot withstand the impacts of the reuse program, any further diversion, nor the 8.5-plus inches proposed by the Bear River Development project. GSL and maintaining health water levels must be prioritized ASAP for many reasons but particularly air quality and quality of life along the wasatch front as well as the survival of this critical ecosystem, bird migration, etc. Please add 'Implement' to Chapter 9 recommendation/plan: Research and identify ways to get more water to GSL.

**Emily Horton:** I am writing to express my concern about the Bear River development project. While I appreciate the focus on water conservation throughout the State Water Plan. I am deeply concerned about a plan that would divert any water from reaching the Great Salt Lake. The Great Salt Lake is a vital and unique ecosystem and very valuable natural feature in our state. It has already reached levels that are dangerously low for the health of the lake and it's ecosystem and we must strive to help as much water reach it as possible to avoid further drops in lake level. The loss of the Great Salt Lake would be very detrimental to the local ecosystem, as a recreation opportunity, and will create toxic dust from the exposed lake bed threatening all of our health. Please reconsider this development project and prioritize this valuable and extremely unique natural resource.

**Emma Ryder:** The Bear River Development ... poses a direct threat to Great Salt Lake and the Salt Lake Valley. If we are to accommodate a growing population we must protect the resources vital to life—our water and the air we breathe. We simply cannot divert water from Great Salt Lake and maintain a healthy environment. The science is clear. There is no amount of water that can be diverted to support the Bear River Development. Great Salt Lake will not survive any amount of water diversion.

**Erik Groszyk:** The state must revisit the proposed Bear River Development Project in light of recent ecological developments at the Great Salt Lake. It is alarming that the state would continue to pursue plans to drastically reduce water flows to the Great Salt Lake, even as it reaches the lowest level since measurement began in 1875. The possibility of on-going drought conditions and subsequent level reductions at the Great Salt Lake pose a catastrophic threat to the air quality and health of existing Salt Lake Valley residents. The harmful pollutants, including arsenic, that accumulated in the Great Salt Lake for decades are now exposed to the wind, which can carry it many miles. This only increases the risk of serious respiratory illness. In 2018, the EPA designated the northern Wasatch Front airshed as violating federal air quality standards -- a situation that will only be worsened by the BRDP. This does not even begin to address the ecological collapse that puts the local brine shrimp industry, and thousands of migratory birds at risk, to name just a couple consequences. The BRDP is a reckless undertaking that endangers countless future generations of Utah residents, and undermines the potential of the Salt Lake City economy.

**Erin Smeeding:** According to the plan, a further loss in elevation of the Great Salt Lake from the Bear River Project will result in increased dust, impacts to ecosystem and wildlife, and reduced air quality. I would like to register my **STRONG OPPOSITION TO THE BEAR RIVER PROJECT**. The water supply is not endless, we need to make hard choices and the loss of the Great Salt Lake and bird wetlands of hemispheric importance and toxic dust storms can not be among them. Increased water conservation is the key to preventing damming the Bear River. If the Bear River is dammed the "Great" will not be kept in the Great Salt Lake as this plan outlines.

**Fiona Summers:** It has been thoroughly researched that the development of the Bear River will negatively impact the Great Salt Lake. However, in chapter six specifically on page 116, this report indicates that it is feasible that both the development of Bear River and increasing the amount water in Great Salt Lake. Both are not viable options. However, this document deceives people into thinking that both are possible. It is clear that the Division is **WITHOLDING** this information from the public and that is unethical, immoral, and untrustworthy.

**Gaelel Jones:** I am disappointed in our Utah Government officials for even suggesting this. There is very little left of the Great Salt Lake to begin with. Save this land!!! Depleting it's water supply further will cause even more permanent damage to the lakes ecosystem and our air. This is unacceptable. Push to save the land - represent what the people of this state actually want.

**Gregory Wilson:** .... drying of the Great Salt Lake must be regarded as the crisis that it is. As such, the Division needs to stop pursuing any development of the Bear River. Any further water reductions to the GSL threaten the lake's future, and threatens the future of our way of life in Utah. The drying of the Great Salt Lake affects our air quality, our health, our energy consumption, our snowfall, our economy, our wildlife, and the soul of our state. There is no scenario where the lake level recovers while the Bear River is developed further.

The Great Salt Lake is approaching an environmental tipping point similar to Lake Urmia or the Aral Sea. Where this point is, we do not fully know. Hopefully we have not already crossed it. But the flows from the Bear River must not be reduced any further. The lake should be seeing an increase in inflow from many if not all of its tributaries.

**Hannah Taub:** This report is inconsistent in that it maintains two goals that are incompatible: one goal of saving the Great Salt Lake, and the other of developing the Bear River. We cannot develop the Bear River further if that means diverting more water from flowing into the Great Salt Lake. Saving the GSL must be the state's priority given its vital ecosystem services and its economic and cultural importance to Utahns.

**Heidrun Kubiessa:** The Bear River Project is erroneously presented as a great move of water management. I understand that we need to meet growing demand, but especially the Bear River Development comes at such a unthinkable great cost of killing a vast and widely connected ecosystem with **SIGNIFICANT** ecosystem services such is Great Salt Lake, that the idea of following through with and starting to build pipelines for the Bear River Project means state suicide. We cannot save the lake by draining it. The inevitable loss of the lake would greatly jeopardize the viability of our great state on so many levels. Wake up people and think in real numbers and pull your heads out of the sand, add just a little more long term thinking to your plan! Just this one water management item may cost our livelihood as a state. Please be **GOOD** leaders!

**Hikmet Loe:** The magical thinking that some believe will serve the citizens of Utah and ecosystem of Great Salt Lake is a false reality. Real, science-based information should be provided and acknowledged at this late date: the depletion of Great Salt Lake's water is a health crisis for human, animal, and avian populations. Do not proceed

with plans to divert the Bear River: it will result in irreparable damage to a region and a lake in need of current repair and long-term sustainability. Thank you.

**Jake Alvey:** It appears we're trying to uphold the Bear River development while also preserving the Great Salt Lake.

**Janice Gardner:** The draft Water Resources Plan assumes the Bear River Development Project will proceed. As such, please modify the section "Keeping the "Great" in Great Salt Lake" to be more factual and honest about the future the Utah Division of Water Resources is creating for the Great Salt Lake. I disagree with how the draft Water Resources Plan promotes ways to "get more water" to Great Salt Lake, while also stating the Bear River Development Project is projected to lower Great Salt Lake by a 8.5 inches. Please update the Water Resources Plan with one to three sentences to emphasize how significant 8.5 inches in depth is to Great Salt Lake. Please include a more robust statement about the impact this water loss will have on Great Salt Lake, our economy, health, and environment. Please consider modifying the report to remove emphasis on "collaborations" as what is needed to keep the "Great" in Great Salt Lake. While collaborations are a strategy that will help us solve complex resource issues, this is not what is essential to save the Lake. Please revise to a more accurate statement such as "Reductions in diversions and depletions are what is needed to keep the "Great" in Great Salt Lake."

**Jared Harris:** I am vehemently against the Bear River water project.

**Jenna Fischer:** The development of Bear River will further jeopardize the dwindling, vital resource of water for the Great Salt Lake and the fragile ecosystems which it supports. In the face of the climate crisis, the state agencies whose actions impact the Lake have a moral, ethical, and legal obligation to ensure that those actions do not infringe on that resource. We cannot continue living in a fantasy reality in which water is an unlimited resource that can be exploited without consequence. The state has a responsibility to act in a way that preserves and protects the Great Salt Lake.

**Jessica Flores:** I completely disagree with diverting water from the great salt lake any longer. Our community and future communities depend on it. The life of salt lake valley depends on the great salt lake having water in it. I was born and raised here in salt lake, and frequent the salt lake often. At least twice a month. I love visiting the lake and cannot imagine my life without it. Please consider those that utilize the lake and cherish it like a member of their family, as I do.

**Jocelyn Fullmer:** I'm very concerned about the Bear River Development project's impact on The Great Salt Lake. The estimated water loss to the GSL per year after the diversion to the Bear River Development is over 8 inches. Under the water lies toxic dust which will be released into our already polluted air. These toxins include arsenic. Water loss in the GSL will also destroy existing ecosystems, completely disturbing the natural food chain. We must protect our state capitol's namesake. We must protect our air. We must protect our health and the health of our children. Insuring water access in the future is important, but the Bear River Development project is an irresponsible act to this need.

**Kat Nix:** Please do not pursue the bear River development project. We must be doing everything in our power to protect the Great Salt Lake so water levels do not decrease anymore. Protecting this amenity will benefit all of Utah and failing to protect puts ppl, wildlife, and the climate at risk.

**Katie Newburn:** ....the Division is still pushing forward with the Bear River Development project. The Bear River Development will be the final nail in Great Salt Lake's coffin, destroying a productive and hemispherically-critical ecosystem and exposing the 2.5 million residents along the Wasatch Front to toxic dust. I urge the Division to revise this plan and provide an alternative to the Bear River Development project.

**Katie Newburn:** To actively proceed with the Bear River Development will harm this resource and harm the people of Utah.

**Lindsey Hutchison (Utah Rivers Council):** A model should have been the Division's first step when the Act was signed, and instead, thirty years later, they are just now planning on creating a model. This should be the Division's first priority, and not because of Bear River Development, but because the Division should understand how this river affects the Great Salt Lake and they should be working to protect the river and its flows in order to protect the Great Salt Lake. As the Division notes, the "Great Salt Lake is an excellent example of how upstream actions can impact the entire watershed downstream." Despite this acknowledgement, the Division is seeking to build more dams on the river that provides the greatest amount of surface water to the Great Salt Lake. There appears to be a disconnect between what the Division says and what the Division does. A section of the Draft Water Resources Plan is titled "Keeping the 'Great' in Great Salt Lake." This section states "[i]f less water flows to Great Salt Lake, there could be serious impacts to the natural system, wildlife, and human health." So this again begs the question, why would the Division still be actively pursuing Bear River Development? The Division is saying that less water will hurt

the Great Salt Lake, and then tries to brush off the project as a measly 8.5 inches, which is already a number that severely underestimates the impact of Bear River Development on the Great Salt Lake as explained in subsection (c). The Division needs to decide if they are going to save the Great Salt Lake or if they are going to let development destroy it. The Division cannot continue hiding behind the Legislature and needs to step up and advocate for the Great Salt Lake and against Bear River Development. If the Division does not do this, it will instead oversee the demise of the Great Salt Lake which will lead to "increased dust, impacts to ecosystems and wildlife, and reduced air quality." b. The Division is understating how much water would be diverted from the Bear River by Bear River Development. In the Draft Water Resources Plan, the Division states that the "Bear River Development will provide 220,000 ac-ft of water at full development" and will distribute 60,000 acre-feet to both Bear River Water Conservancy District and Cache Water District and 50,000 acre-feet to both Jordan Valley Water Conservancy District and Weber Basin Water Conservancy District. What the Division fails to mention in the plan is that Bear River Development would actually divert 400,000 acre-feet, not 220,000 acre-feet. The Utah Division of Water Resources and the Idaho Water Resource Board filed a joint application to appropriate water that was received on March 23, 2018. In this application, the two entities state that they are applying to appropriate 2,000 cfs or 400,000 acre-feet of water.

The sources of this water supply are: "(1) Bear River tributary to Great Salt Lake, (2) Flood control releases tributary to Bear River, and (3) Bear Lake inflows to Bear River." The Division is purposefully understating how many acre-feet of water will be diverted away from the Great Salt Lake by Bear River Development and justifying it by thinking that they only need to talk about the water that will be used in Utah; however, this choice is purposefully misleading and the joint application shows that Utah and Idaho are working together to divert 400,000 acre-feet of water, almost half of the Bear River's flow into the Great Salt Lake. This fact must be stated in the Water Resources Plan and discussions on the impacts Bear River Development will have on the Great Salt Lake should include impacts associated with a 400,000 acre-foot diversion, not a 220,000 acre-foot diversion.

**Lindsey Hutchison (Utah Rivers Council):** Due to the ongoing drought, the Bear River has reduced from 1.2 million acre-feet to 850,000 acre-feet of water into the Great Salt Lake annually. According to the Division, evaporation on the Great Salt Lake "is about 2.6 million acre-feet per year," which will only increase as the Great Salt Lake continues to decline because shallow water is warmer, and warmer water evaporates at a faster rate. The Division is sending mixed signals on its priorities as it claims it wants to bring more water to the Great Salt Lake but also is actively pursuing Bear River Development; is underestimating how much water will be diverted from the Bear River if the project is completed; is underestimating how Bear River Development will affect the Great Salt Lake; and is not acknowledging that the water districts do not and will not need the water from Bear River Development, nor can they afford it. a. The Division's claim that it is trying to get more water to Great Salt Lake is hypocritical considering their active pursuit of Bear River Development. The Division is being hypocritical in its approach to the Great Salt Lake. The Great Salt Lake dropped to its lowest in recorded history in July 2021. Despite this, the Division does not appear to have any actual and concrete plans on how to bring more water into the Great Salt Lake, only on how to divert more water from the Great Salt Lake. Within the list of division goals, the Division states that it wants to "[r]esearch and collaborate with stakeholders on ways to get more water to Great Salt Lake;" "[c]omplete a comprehensive model of the Bear River;" and "[a]cquire right-of-way property for the proposed Bear River Development Project." The Division has a concrete goal towards building the disastrous Bear River Development Project, acquiring right-of-ways, which the Division has spent millions of dollars on already. However, when it comes to protecting the Great Salt Lake, they only have plans to "research and collaborate." There is already a significant amount of research done on the Great Salt Lake and the lake has been lowering due to drought for years. The fact that the Division does not have any concrete goals for getting water to the Great Salt Lake is an immense failure on their part. Dr. Kevin Perry, a professor at the University of Utah, says that "Utah diverts approximately 30% too much water for the long-term sustainability of the lake." Bear River Development will only further lower the Great Salt Lake and put Utahns at risk from increased air pollution. The many industries and species that rely on the Great Salt Lake would also suffer greatly if Bear River Development were built. Another item to note in the Division's goals is that they are seeking to complete a comprehensive model of the Bear River. A model of the Bear River is much needed, but what is shocking is that the Division has apparently not made one before. The Bear River Development Act was signed in 1991 and the Division has been pursuing this project ever since, yet they have never completed a model of the river they hope to add more dams to? The Division is purposefully underestimating how Bear River Development will affect the Great Salt Lake. The Division states that Bear River Development is "estimated to impact lake elevation by an average of 8.5 inches." However, the Division's own webpage dedicated to Bear River Development states that "[c]urrent modeling indicates this level of depletion from the Great Salt Lake watershed would reduce the lake level by an average of about 8.5 inches and as much as 14 inches..." In the Draft Water Resources Plan, the Division purposefully omits the higher range of their already too low estimate to make Bear River Development seem like it won't have a very big effect on the Great Salt Lake. Even if the Division did include the higher end of their estimate, the Division is still severely understating the effects Bear River Development will have on the Great Salt Lake. According to the Division's Bear River Development page, the 8.5-14 inch number is based on a 220,000 acre-feet appropriation, but as was explained in subsection (b), the Bear River Development project would actually appropriate 400,000 acre-feet of water, thus reducing the Great Salt Lake by twice the amount the Division claims, or more. This means

that the Bear River Development project could reduce the Great Salt Lake by over 2 feet. Additionally, in a presentation to the Infrastructure and General Government Appropriations Subcommittee on October 19th, 2021, Candice Hasenyager, the director of the Division of Water Resources, explained that the reduction is 8.5 inches on average annually. Again, the 8.5 inch number is far too low, and again, the Division did not state the “annually” part of the reduction in the Draft Water Resources Plan. Director Hasenyager did not even mention the impact to the Great Salt Lake until a legislator asked her directly about it. To back up the 8.5-14 inch effect, the Division cites a 2016 White Paper that they helped write. However, the white paper itself does not do any analysis or modeling to support the 8.5-14 inch range. Rather, the white paper simply cites the Division for the 8.5 inch number. This full circle citation shows that there is not actually any data to support the Division’s miniscule 8.5 inch number. The 11th footnote of the White Paper states: The Utah Division of Water Resources estimates that the proposed diversion of 220,000 acre-feet of Bear Water will result in a depletion of 85,670 acre-feet of water delivery to Great Salt Lake. They estimate that this will cause the lake to decrease a mean of 8.5 inches and a maximum of 14 inches in elevation. (C. Miller, personal communication). Assuming a mean decrease of 8.5 inches from the current lake level (4193.1 feet), an additional 30 square miles of lake bed would be exposed. If the decrease was 14 inches, 45 square miles would be exposed. The White Paper also underestimates how much water would be diverted from Bear River Development, using the 220,000 acre-feet number instead of the 400,000 acre-feet the Division actually applied for, but even the Division’s severe underestimate would expose an additional 30-45 square miles of lakebed, which would be a disaster for air quality, recreation, and the industries and animals that rely on the Great Salt Lake. The Division is purposefully underestimating the impact Bear River Development will have on the Great Salt Lake in an attempt to fool the public. The Division knows that Utahns are concerned about the Great Salt Lake and want it to be saved, and instead of actually doing so, the Division wants to divert 400,000 acre-feet of water away from the Great Salt Lake, and lie to the public while doing so.

The four water districts that will receive water from Bear River Development do not need the water and cannot afford the water. When the Bear River Development Act was signed in 1991, it was estimated that Bear River Development would be needed by 2015. The Division now estimates that Bear River Development water “will not be needed until after 2045-2050 or later.” The Division says that “[c]onservation efforts, technology improvements... and smaller water projects have delayed the need,” but as technology gets better and conservation efforts become more robust, the water districts Bear River Development is being built for will not need the water. For example, the 2010 Jordan Valley Water Plan includes a graph showing water supply vs. water demand over time for the Jordan River basin. The dark purple portion shows 2010 municipal water supply in thousands of acre-feet and the lighter purple and blue portions show estimated additional supplies from a range of sources including water reuse, agricultural conversion, and proposed Bear River Development. The solid red line – water demand with conservation – shows that with conservation efforts, Jordan Valley Water District and the Metropolitan Water District of Salt Lake & Sandy have no need for Bear River Development. Since the red line doesn’t encroach into the dark blue section of Bear River water, it’s clear the 50,000 acre-feet of water the Jordan Valley Water District is slated to receive from Bear River is unnecessary if they focus on cheaper options like demand reduction, agricultural water conversion, and smaller water transfer projects.

Figure 12: Jordan River Basin Projected Future Water Supply vs. Demand In 2006, Utah Rivers Council released its first Bear River Alternatives Report. In 2019, Utah Rivers Council released the fourth edition of the report. The first half of this report goes into the history of Bear River Development and the impacts it would have around the state, and the second half of the report describes eight different alternatives to Bear River Development.

These alternatives are far more affordable than the multi-billion-dollar Bear River Development Project and do not have the many negative consequences that Bear River Development does. In 2019, the Debt Repayment Obligations Created by the Proposed Bear River Development Project report authored by University of Utah professor Dr. Gabriel A. Lozada was published. The purpose of the report was to “ascertain what expenses the northern Utah cities slated to receive water from proposed Bear River Development would have to pay in return.” The report’s analysis showed that “if all four water conservancy districts participated in the proposed Bear River Development in the near future, none of these agencies would be able to make their annual debt payments for the project given their current net revenues.” Figure 14 shows the results of this economic analysis. It is clear that none of the water districts have annual revenues large enough to cover even half of their estimated Bear River Development annual debt payments. Some districts, like the Cache and Bear River districts, would need revenues over 150 times larger than their current levels just to cover their annual debt payment. Given these figures, Bear River Development is not just financially infeasible, it is incredibly reckless and irresponsible. Figure 13: Current Net Revenues Compared to Annual Debt Payments If the water districts do not need and cannot afford Bear River Development, it is incredibly worrisome that the Division of Water Resources continues to promote the project instead of informing the legislature that Bear River Development is not feasible and will hurt the water districts it claims to be helping.

**Lynn de Freitas (Friends of Great Salt Lake):** FRIENDS has made every attempt to work collaboratively within the water community to try and find ways to increase the water flowing to the Lake. However, all of those efforts combined will be a literal drop in the bucket compared to the negative impacts from developing the Bear River. For

the Division to casually state that “[w]ater development is projected to be needed on the Bear River” without acknowledging the true impact of that development is a disservice. It is also disheartening to read the section about the Bear River Compact and realize that the states are intent on divvying up every last drop of the river, regardless of the consequences.

The biggest fantasy of all is acting as if it’s perfectly feasible for the Division to pursue the goal of getting more water to Great Salt Lake at the same time it is pursuing the goal of developing the Bear River. The Division does the public a great disservice by holding those two goals up side-by-side and implying that both are possible. They are not, and the Division needs to be upfront and acknowledge that they are not. The citizens of Utah have a choice: they can either help save Great Salt Lake, or they can move forward with development of the Bear River. They cannot do both. There is no scenario where both are possible short of a complete reversal of the impacts of climate change on the state. It is nothing short of audacity for the Division to advocate “Keeping the ‘Great’ in Great Salt Lake” in the same document where it outlines how it is going to destroy the Lake through the Bear River development. It is equally audacious for the Division to estimate that the impact on the Lake of the Bear River development will be a mere 8.5 inches drop in elevation, without acknowledging the cumulative impact over time on the Lake of this diversion. The Division must also acknowledge that the size of the proposed diversion has to be significantly greater than the 220,000 acre-feet it intends to provide users due to system losses and evaporation.

**Mack Flannery:** I am extremely concerned about the impacts of the Bear River Development Project on the health of the Great Salt Lake. Great Salt Lake is already at a historically low level. The potential harm threatens our very way of life in the Salt Lake Valley, and Utah more generally. Our ecosystem depends on a healthy lake, and the more Great Salt Lake recedes and has its source waters diverted, the greater risk we face in terms of drought, exposure to dust and toxins in our already unhealthy air, and negative impacts on our snow. As a lifelong Utahn, I demand action to revitalize Great Salt Lake. I will not accept the impacts of the Bear River Development Project. I demand that you prioritize the protection of Great Salt Lake, and abandon projects that threaten the Lake, especially the Bear River Development Project. This plan is fundamentally flawed by advancing pure fantasies about what is actually possible for the future of our state. Acting as though it is a reasonable suggestion to propose that the Division can get more water to Great Salt Lake at the same time that it is developing the Bear River is irresponsible and false.

The Division does the public a great disservice by holding those two goals up side-by-side and implying that both are possible when they are not. I am disappointed in the Division for failing to be up front about this and acknowledge the reality of the situation we are in. There is no scenario where attempting to protect Great Salt Lake and developing Bear River are both possible short of a complete reversal of the impacts of climate change on the state. It is nothing short of audacity for the Division to advocate “Keeping the ‘Great’ in Great Salt Lake” in the same document where it outlines how it is going to destroy the Lake through the Bear River development. It is equally audacious for the Division to estimate that the impact on the Lake of the Bear River development will be a mere 8.5 inches drop in elevation, without acknowledging the cumulative impact over time on the Lake of this diversion. The Division must also acknowledge that the size of the proposed diversion has to be significantly greater than the 220,000 acre-feet it intends to provide users due to system losses and evaporation.

**Marcie Mehl:** The Bear River Development project would be disastrous for the health of the lake and the residents of the Salt Lake Valley. The ecological health and economic benefits of the Lake are paramount. The future of the Great Salt Lake depends on adequate inflows that maintain water levels. Bear River Development is an unparalleled threat to the Lake and the benefits it provides to all of us. To preserve the Great Salt Lake, we need legislators that will not bow to the demands of water development lobbyists and water agency staff who are driving massive spending. We instead need legislators courageous enough to oppose unnecessary and destructive diversions from drying up the Great Salt Lake.

**Margaret McGuirk:** I am concerned by the threat that continued development of the Bear River poses to the entire Great Salt Lake ecosystem. The Great Salt Lake has already been stretched beyond its limits in Utah's search for water, and can no longer afford to be exploited. Given the shallow nature of the Lake, lowering the water levels by even a few inches as the planned development of the the Bear River would will expose a great deal more lakebed with the according risks of toxic lakebed dust and further reducing unique habitat. It is important that the department does not ignore this threat in the interest of pursuing unlimited water resources.

**Mary Anne Karren:** The Water Resources Plan does not acknowledge that the Bear River Development Project and the Great Salt Lake cannot coexist. If the Bear River Development Project is built, the lake, which is already on the verge of ecosystem collapse, will be depleted at least another 8.5 inches below its current historic low level. Further depletion of the Great Salt Lake will endanger the health of millions of Americans due to toxic dust pollution, and will destroy the most important bird habitat in the American West. Sustaining and preserving the Great Salt Lake is a matter of public trust and must be top priority. Any actions by the state of Utah and the Division of Water Resources that further deplete the Great Salt Lake (including the Bear River Development Project) are unacceptable.



**Maya Kobe-Rundio:** We need to prioritize the protection of Great Salt Lake and abandon projects that threaten this critical ecosystem, especially the Bear River Development. The proposed Bear River development would further reduce flows to the Great Salt Lake, impacting an ecosystem already facing the threat of collapse. We can't have our cake and eat it too -- we can either save the Salt Lake or move forward with the Bear River Development, but we can't do both. It is hubris for the Division to advocate "Keeping the 'Great' in Great Salt Lake" in the same document where it outlines how it is going to destroy the Lake through the Bear River development.

**McKenna Taylor:** I have reviewed the proposed 2021 Division of Water Management Plan. I would like to state my deep concerns towards the management of the Great Salt Lake and fiercely oppose the Bear River Development Project. It is a proposal which would cause irreparable damage to the Great Salt Lake, causing more air pollution, destroy the local ecology and ultimately have a negative impact on the climate of the region.

I don't believe enough emphasis is placed on the importance for the 'Lake Effect' the mountains receive during the winter from the Great Salt Lake. Due to this unique geography, Salt Lake City and the surrounding mountain resorts have become global destinations for winter snow sports. Overtime people have migrated to the state to be closer to the incredible snow, leading to the development of a thriving outdoor and recreational industry, consistent annual tourism and attracted new residences to Utah. On top of that, we have recently seen explosive growth in tech sector, nicknamed 'Silicon Slopes.' Coined after very mountain resort slopes that make Utah an exciting alternative to the typical costal cities tech companies at often located in; many local companies leverage the region as a recruiting tactic to attract top tier talent and companies to relocate. Without 'the worlds greatest snow on earth,' we would see a negative chain reaction; a possible exodus, of both companies and people from the Wasatch Range, as well as crippled local economies when seasonal tourism dries up. The economic impact would be widespread and potentially irreversible. Proceeding forward with The Bear River Development project would be knowingly negligent on the part of the Utah Division of Natural Resources.

We have seen outcries from scientific community, conservation specialist, and the a concerned public. Please protect The Great Salt Lake, which will in turn, directly and indirection, continue to support our local economy. There is no justification to proceed with the unnecessary \$2.9 B Bear River Development Project.

**Meagan Pickett:** This plan could take the Great Salt Lake water levels down a significant amount bringing it to a devastatingly low point for the ecosystem of it. Please don't approve this!

**Nate Houseley:** This plan claims that the Bear River Development Project would impact Great Salt Lake water level by 8.5 inches. At current levels--and likely future levels--this would devastate the ecology of the lake, its wetlands, and by extension, the environment of the Salt Lake Valley. But this figure is also misleading, since it is the conservative estimate. BRDP could lower the lake level by 14 inches, according to the same study presumably cited in this plan. I oppose the BRDP.

**Neil Reed:** Please reconsider going forward with the development of the Bear River project. Any course of action that so drastically lowers the level of this critical habitat and resource is not one we can pursue without serious damage to our snowpack, air quality and economy. There can be no Salt Lake City without the Salt Lake.

**Rachel Wittmann:** Bear River Development would lower the lake level by 8 1/2 inches on average -This would push the valley toward a toxic dust bowl and would further endanger the underwater microbialites that form the foundation of the lake's food chain -The estimates predict a drop in the lake by up to 14 inches in some years -The lake is in danger because of human activity--diversions for agricultural and municipal water.

**Richard Spotts:** ....there are both recommendations favoring the Bear River Development and putting more water into the Great Salt Lake. This is a ridiculous attempt to "have your cake and eat it too."

**Robert Kennedy:** As a parent and lover of the Great Salt Lake, I strenuously urge that the Bear River Development be dropped from future water use planning. I want my son to grow up with the lake, to be able to see the lake at Antelope Island and float in it kinda where SaltAir was before it burned down. We cannot reduce inflow to the lake. There is no reason at all that we can't join the Aral Sea, the Owens Valley, Lake Tuz, and Sevier Lake as another dead lake. It would be devastating to the environmental, economic, and sheer mental health of Utah if we diverted the Great Salt Lake into oblivion. We have so many options that haven't been touched - conservation, education, improved monitoring - and yet we're already jumping to the most extreme and potentially irreversible scenario.

**Ryan Pilstl:** Please reconsider the Bear River development plan. The reduction of water to the great salt lake could be disastrous. With the reduction of water flow to the great salt lake the Bear River development plan will put the health of the great salt lake at an extreme risk.

**Samuel Nelson:** While I understand that water is an important issue now and in the future, I do not think that 8.5-14 inches of loss in water depth to the Great Salt Lake is acceptable. The Great Salt Lake is an essential part of ecosystem and human health in the Salt Lake Valley, and we should be doing everything we can to restore its levels, not diminish them. I do not support the Bear River Development project for this critical reason.

**Sarah Null:** The Draft Water Plan does not adequately consider how Bear River water development will affect ecosystems. Specifically, Bear River water development will lower the elevation of Great Salt Lake. Existing estimates range from 8.5 - 14 inches (although the DWP erroneously omits the upper bound). However, these estimates are likely lower bounds given widespread soil moisture deficits observed during the ongoing drought, increasing water reuse, and illegal diversions.

The Draft Water Plan also does not adequately consider alternatives to future water development. In the Bear watershed, cost estimates of dam construction and associated facilities seem low compared to similar dam proposals. For example California's 1.3 maf Temperance Flat Reservoir was put on indefinite hold because of a \$3B price tag and backing for proposed Sites Reservoir is waning with costs estimated at \$5.2B. More importantly, alternatives like conservation, water reuse, water banking, and conjunctive management are mentioned, but analyses to understand the need for new dams given those cheaper options is not presented. Any discussion of future dams requires current cost estimates, detailed information about how beneficiaries will pay for dam construction, dynamic modeling that optimizes water management decisions, and thorough environmental and human health costs that include increased airborne dust from a desiccated Great Salt Lake.

**Sierra DeVuyst:** We must be proactive in preserving and conserving our state's waterways. Legal protections should be put into place like a guardianship in order to insure we are taking care of our natural world for our children and grandchildren. The Bear River Development Project will be disastrous for our homes, health and future generations and I strongly object to any further development that will impact waterways, natural runoff, snowpack and rivers for humans and species in the area that are native or migrate through and settle in the Great Salt Lake Wetlands. Our public officials must do better to preserve our health, city and future.

**Stacey Rabiger:** You cannot keep the Great Salt Lake "great" and go forward with the outlined proposal of The Bear River development. The BRD will be a disaster to the Great Salt Lake's ecosystem that jeopardizes our health, economy and way of life. We must make protecting the GSL a priority and that means keeping water flowing to it, that simply cannot happen with the BRD proposal.

**Steve Erickson:** Continuing the push to develop the Bear River is tantamount to a death march for Great Salt Lake. You can't have a healthy lake by diverting and depleting its largest source of water. Work on this project should be put on hold while efforts ramp up to install secondary water meters, while groundwater research and watershed planning and other solutions to saving water upstream in the watershed are underway. Recent attention on the Whites Valley reservoir proposal and DWRe's recommendations to purchase rights of way and other funding for Bear River development undermines the narrative that the need for Bear River development is decades away. Support for the Bear River development suck resources - and credibility - away from other important goals and recommendations in the WRP.

**Sydney Bowen:** I am not in support of the Bear River development, or any other development that would decrease the water level of the Great Salt Lake. Maintaining the water level of the GSL is integral to minimizing air pollution in the Salt Lake County area, where I live and work. Please consider alternative methods for bringing water to new areas.

**Tessa Scheuer:** The development of Bear River could very well mean the death of the Great Salt Lake. Please reconsider this development while we battle the drought and dangerous shriveling of the Great Salt Lake.

**Therese Berry:** The Utah Dept of Natural Resources states that the Bear River Development Project (BRDP) will lower Great Salt Lake's (GSL) water level by an average of 8 inches. A drop of 8.5 feet from the historic high to it's previous historic low led to a loss of 44% of the lake's surface area. Further drops in the lake's level would cause many adverse events for ALL communities that rely on the GSL. A continued drop in the lake's level would expose more of the playa - putting more dust and toxins in the valleys air. The lake's food chain depends on underwater microbialite structures, the majority of which live between a lake elevation of 4185 and 4195. The lake elevation is currently at about 4190 feet and any further drop exposes more of these important formations. The BRDP's average drop of 8.5 inches lost means that in some years the lake level could drop as much as 14 inches! This figure is based on 'return flows' - the real figure could be much worse. The residents of the great state of Utah, will not accept the impacts of the BRDP! The 338 bird species that have inhabited the GSL over the years will not tolerate the impacts of the BRDP! The 10 million migratory birds that either stop by the GSL during migration, rely on the lake ecosystem for nesting habitat, or live at the lake will not survive the impacts of the BRDP! The resident of this community do not accept the catastrophic changes to our air quality due to drying of the lake because of the BRDP! The great state of Utah needs good water management policy and practice, sustainable vision and long term

water resource planning that takes into account the desert nature of our state and the increasing threat of continued drought. The GSL is a precious ecosystem that needs evermore, our protection from continued growth and development that present non-stop demand in our shrinking water resource. I am born and raised in this valley. I've seen it grow in leaps and bounds over my 63 years. I do not accept the impacts of the Bear River Development Project. I oppose the Bear River Development Project. And I ask that you vote down the Bear River Development Project!

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** On pages 129-130, the Plan acknowledges that "The proposed Bear River Development project, for example, is estimated to impact lake elevation by an average of 8.5 inches," but fails to note that it could be lowered by nearly 14 inches, and it fails altogether to describe the surface area that would be exposed or to evaluate the environmental effects—to people as well as nature—that such a decline would have.

The major focus on finding water to keep Great Salt Lake from drying up is commendable. Many migratory birds and much of the state's economic activity depend on Great Salt Lake.

The Plan comments that "nearly half of Utah's waters do not support beneficial uses," but glosses over the fact that the term, "beneficial uses," has little to do with environmental quality and everything to do with human's use of water. If it considered environmental quality for nature and other species, the plight of Utah's waters would be so very much worse.

**Wayne Wurtsbaugh (Bridgerland Audubon):** The Draft Water Plan (DWP) needs to more thoroughly discuss how future water development in Utah, Idaho and Wyoming could impact the Great Salt Lake. The DWP does not accurately portray the effect of the Bear River Water Development Plan (BRWDP) on Great Salt Lake. The DWP says, "The proposed Bear River Development project, for example, is estimated to impact lake elevation by an average of 8.5 inches." However, the Bear River Water Development Plan (BRWDP) says that the "lake level would decrease by an average of 8.5 inches and a maximum of 14 inches, depending on the lake level." This range, however, is likely an underestimate because the BRWDP assumed that all the Bear River water "will be used for M&I purposes."

In the plan's analysis, water used for Municipal and Industrial purposes was estimated to have a return flow to the watershed of 62%--that is, only 38% of the developed water is assumed to be lost to landscape evapotranspiration, with the remaining water flowing to Great Salt Lake. There are two major flaws in these assumptions. First, the plan assumes that return flows will not be used by someone downstream with secondary or tertiary water rights. This assumption is very likely incorrect. Secondly, the assumption that all (or even most) of water will go to M&I purposes is incorrect. For example, the Cache Water District website indicates that agricultural water needs are 40,000 acre-feet higher than the 60,000 acre-feet allotted by the BRWDP, and the Water District's stated purpose includes "planning for and facilitating the long-term conservation, development, protection, distribution, management and stabilization of water rights and water supplies for domestic, irrigation, power, manufacturing, municipal, recreation and other beneficial uses,....".

Farmers apply water efficiently, and thus try to minimize the amount that is 'lost' to return flows. For example, Pratt et al. (2019) found average return flows of only 35% from Cache Valley agricultural fields—far less than the 62% assumed for all of the water in the BRWDP.

Given these complexities, the State Water Plan should call for a basin-wide return flow assessment. Although a much more thorough analysis is needed, it seems possible that water developed for agriculture in Cache, Box Elder and other counties, could come close to doubling the stated elevation decrease of Great Salt Lake due to the development of Bear River water. A drop of even 8.5" below current lake levels would uncover 20 sq. miles more lakebed. A drop of 14" would uncover 40 sq. miles more and a drop of 28" would uncover 67 sq. miles more. These decreases would expose Utahns to substantially more air pollution and seriously degrade the natural environment. Even without concerns about the accuracy of the 8.5" water decrease, the impact of water development in the DWP is an oversimplification of the effects on the lake. For example, due to previous water development and the current drought, over 80% of the Bear River and Farmington Bays have been desiccated—additional development would desiccate them even further.

**Wayne Wurtsbaugh (Bridgerland Audubon):** These are important estuarine areas that harbor a large portion of the migratory birds that visit the lake. Additionally, the impact of decreasing the lake level not only exposes dust-producing dry lakebed, but also increase the salinity of the lake.

Salinity levels are even now at levels sub-optimal for brine shrimp growth and reproduction, and water development would increase the salinity even higher, reducing brine shrimp yield to the cyst industry, and that available for birds to feed on. The Draft Water Plan should also address the potential impact of Bear River water development by Idaho and Wyoming. The Bear River Compact allots 50% more water to these states than is

allotted to Utah. Unfortunately, the Great Salt Lake's watershed does not stop at the border, so a comprehensive analysis of the impact of water development on Great Salt Lake is badly needed, and that need should be explicitly addressed in the DWP. In summary, the State Water Plan should much more thoroughly address how water use and water development will impact Great Salt Lake, and the beneficial uses it provides to our citizens and birds that rely on this critical ecosystem.' Dr. Wayne Wurtsbaugh, Limnologist Bridgerland Audubon North Logan, Utah 84341 Pratt, T., Allen, L.N., Rosenberg, D.E., Keller, A.A., and Kopp, K. 2019. Urban agriculture and small farm water use: Case studies and trends from Cache Valley, Utah. Agric. Water Manage. 213: 24-35.

**Whitney Shaw:** I support the Friends of the Great Salt Lake's position on this plan. It is not feasible to pursue the goal of getting more water to Great Salt Lake at the same time it is pursuing the goal of developing the Bear River. The Division does the public a great disservice by holding those two goals up side-by-side and implying that both are possible. They are not, and the Division needs to be upfront and acknowledge that they are not. The citizens of Utah have a choice: they can either help save Great Salt Lake, or they can move forward with development of the Bear River. They cannot do both.

**Zoe Perry:** I am a very concerned citizen of Salt Lake City, writing to implore you to stop the Bear River Development proposal. It is VERY detrimental to Salt Lake, and the Great Salt Lake, and is both unnecessary as it is harmful. The People of this Beautiful State deserve to be taken care of, and considered in their local government processes. We need leaders who will find substantive solutions, not continue to push the issue down the road. We need to be responsive to our water usage NOW. Oppose the bear River development, please.

**General Response:** The Bear River Development Act, enacted as Utah code title 73 chapter 26 (UC73-26), directs the Division to "develop the surface waters of the Bear River ... as authorized and funded by the Legislature [Utah Legislature]". The Division is mandated by law to continue monitoring conditions along the Bear River for potential development as it becomes necessary. The Division's activities are aligned with requirements of UC73-26. Due to the focused efforts of water districts, the projected need for BRD water is now 2050 or later. Progress in water conservation and education, smaller water projects, and secondary meter installation have aided in pushing out the need for BRD water.

**Alex Powelson:** I do not support the Bear River development project's water supply diverting water away from the Great Salt Lake.

**Claire Taylor:** I urge you to not proceed with the Bear River Development plan. Proceeding in the way we have been proceeding and proceeding with the Bear River Development plan would be irresponsible for our future, and for future generations.

**Dakotah Reyes:** don't want the Bear River Development Project.

**Don Moseon:** The Bear River Development Project should not go forward. The environmental impact on the Great Salt Lake and the Wasatch Front are not acceptable and the benefit is minimal if any. There are other solutions to the state's water issues.

**Emma Ryder:** The Bear River Development, at its core, is unsustainable and short sighted. It poses a direct threat to Great Salt Lake and the Salt Lake Valley. Stop the Bear River Development.

**Justin Davies:** I am urging you to support halting the development of the Bear River in order to halt the dangerous rate at which the Great Salt Lake is lowering. Please consider that the long term consequences of allowing this will utterly eclipse whatever short term gains might be found in further development of the Bear River.

**Katie Newburn:** The Division must abandon its plans to move forward with the Bear River Development. I urge the Division to revise this plan and provide an alternative to the Bear River Development project.

**Nateijie Hamilton:** And abandoned the BEAR River development... what a catastrophe that would be.

**Paige Johnson:** The bear river development project will lower our already shrinking Great Salt Lake, putting more toxins and particles in the air. I am in full opposition to this project.

**Robert Kennedy:** Get rid of the Bear River Development. It's an antiquated answer to a nonexistent problem.  
Tyler Christensen: No Bear River diversion.

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** ...it continues simply arguing for big projects like the ... Bear River Development.

**Zeppelin Zeerip:** The Bear River Project must be stopped for the future health and well being of our beautiful state.

## Development - Lake Powell Pipeline

**General Response:** Twenty-four comments on the 2021 Water Resources Plan were specific to a pipeline from Lake Powell to southwest Utah. The Division of Water Resources (Division) acknowledges and appreciates the public's interest in water planning for southwest Utah. Thank you for sending us your comments and for being actively involved with water issues.

The Lake Powell Pipeline Development Act [Utah Code 73-28-102] requires that the Division of Water Resources to develop a Lake Powell Pipeline, however, the 2021 Water Resources Plan (Plan) isn't a Lake Powell Pipeline planning document. Information about ongoing efforts specific to a Lake Powell Pipeline are found at <https://lpputah.org/>.

Comments specific to a Lake Powell Pipeline have been forwarded to individuals directly involved with planning for that project. No changes were made to the Plan in response to these comments.

**Candice Hansen:** The Environmental Impact Study for the Lake Powell Pipeline project included this report: [https://water.utah.gov/wp-content/uploads/LPP-Reports/20160430-19-Climate-Change-Study-Report\\_FINAL.pdf](https://water.utah.gov/wp-content/uploads/LPP-Reports/20160430-19-Climate-Change-Study-Report_FINAL.pdf). It has rather dire predictions for the future water availability from Lake Powell: "In conclusion, Colorado River Basin studies project inflow to Lake Powell is likely to decline in the future resulting from climate change. Streamflow in the Virgin River is likely to decline during the summer months. Reduced inflow to Lake Powell could have detrimental effects on storage levels if stringent shortage and demand management strategies are not implemented. It is unknown at this time what impacts such management strategies might have on the State of Utah or the LPP Project." If Utahns go into substantial public debt to acquire this water source, what funding will be available after the LPP is built to invest in what will turn out to be a necessary alternative? This costly endeavor has a substantial risk of no return. I would like my tax dollars to be invested in water re-use infrastructure.

**Colleen Winters:** I live in Washington county and I strongly oppose the Lake Powell pipeline. The idea of a Lake Powell pipeline is disastrous. Our knowledge in 2006 was a lot different than it is now. The climate in 2006 was at least somewhat different than it is now. The LPP Act should have been rescinded long ago. Since it wasn't, the project now should be withdrawn, the Act nullified, and the whole thing scrapped. Are the water projections mentioned in this report already assuming availability through a completed Lake Powell pipeline and the completion of other projects mentioned in this section? If so, that would be incorrect, yielding invalid figures.

Page 96 has this statement: Changes in water supply or demand in one place likely have implications on water availability in another time and place. What a true statement! The promoters of the pipeline need to have that engraved on their brains.

**Dakotah Reyes:** don't want the Lake Powell Pipeline

**Dan Watt (Water for the West LLC):** The LPP is a good example of a start at infrastructure to solve the lack of water. Unfortunately pulling water from an already over-taxed resource such as the Colorado is not a great idea unless we add to Colorado's flow. The idea is the right one, and we need to take it further.

**Eileen Hilton:**....we need immediate and intense focus on before it's too late: Ensuring Lake Powell remains high enough so Glen Canyon dam can continue producing hydroelectricity....give we are in an ongoing drought: The Lake Powell pipeline should be taken off the table. We would be shooting ourselves in the foot to pursue either of these.

**Ingrid Akerblom:** The WRP is yet another example of UTAH leaders pinning our future on hope that somehow our water shortage and accompanying long term drought will end and there will be plentiful water for all in the Colorado River to support Southwest UTAH demand. Wake Up! The megadrought being experienced by the entire western US including UTAH is historic, is at least in part caused by climate change, and is not likely to be reversed based on the current trajectory of greenhouse gas emissions across the globe. We must deal with this reality now. The WRP proposes taking more water from the dwindling Colorado River for development – well remember the old saying...something from nothing is still nothing. Even more concerning, that "nothing" has more senior water rights allocated to other parties. The Bureau of Reclamation has gone on record to say there are more rights allocated for the use of the Colorado River than the Colorado River produces annually, even without considering climate change. The Lake Powell Pipeline has junior water rights to the Colorado River, and users with senior rights will be granted water first from the increasingly dwindling flow. As a result, the Lake Powell Pipeline is not a secure or dependable source of water.

No effort or more funding should be exercised to complete the National Environmental Policy Act (NEPA) process for the Lake Powell Pipeline. Last year's Draft Environmental Impact Statement was challenged by various parties, including the other Colorado River Compact states, because it introduced arbitrary and capricious justifications,

including a “need” for a “secondary source” to a diminishing resource, the Colorado River. The Lake Powell Pipeline EIS process was stopped, and the issues at the root of the six states’ claims have not been resolved. For Utah to move ahead with the NEPA process in seeking approval for the Lake Powell Pipeline, the state will, in effect, be inviting a water war with neighboring states who have warned that litigation will be pursued if Utah doesn’t settle these issues first with them before pursuing federal approval. Continuing to argue over access to a diminishing supply is wasting time and financial resources that could be devoted to developing dynamic water conservation measures, metering all water use, putting measuring devices on all streams in Utah and implementing more reuse methods.

**Lindsey Hutchison (Utah Rivers Council):** The Division is overestimating the Colorado River’s annual flows by using the all-time average instead of the twenty-year average. This has led to the Division to overestimating Utah’s allocation of Colorado River Water. Because of this overestimate, the Division wrongfully claims that it has the water rights to divert over 80,000 acre-feet of water from Lake Powell via the proposed Lake Powell Pipeline. The declining Colorado River is very likely an unreliable source of water for the citizens of Washington County, yet the residents of Washington County would be forced to make debt payments for this multi-billion dollar project through increased water rates, impact fees, and property taxes, while possibly receiving no water in return if this pipeline is built. This increase to ratepayers does not account for the loss of power at Glen Canyon Dam if Lake Powell continues to decline. In July 2021, Lake Powell hit its lowest elevation in recorded history, requiring the Lower Basin to take Tier 1 cuts. It is now predicted that there is a 34% chance that Glen Canyon Dam could stop producing hydropower in 2023. The Lake Powell Pipeline would further reduce Lake Powell and make it increasingly likely that Glen Canyon Dam would no longer be able to produce hydropower, likely costing ratepayers even more. The Division claims that Washington County has ten to fifteen years before water demand exceeds supply. This, however, is not supported by recent or substantive data. Credible sources show that: the Virgin River has enough water to service Washington County population growth; a large quantity of agricultural water will likely be converted to municipal water supplies as Washington County’s agricultural lands are urbanized; that Washington County’s secondary water supplies will serve as a bank for future municipal water needs; that the Draft Water Resources Plan overestimates Washington County’s water demand; that the Draft Water Resources Plan does not use reasonable water supply and demand estimates; that water conservation is a more feasible and proven method for meeting Washington County’s future water needs; and that congressional approval would be required to build the Lake Powell Pipeline and is highly unlikely.

The Draft Water Resources Plan fails to acknowledge that Congressional approval is required for the Lake Powell Pipeline. The Draft Water Resources Plan mentions that the Lake Powell Pipeline is working its way through the NEPA process under the Bureau of Reclamation. What the Plan fails to mention is that the Lake Powell Pipeline would be a trans-basin diversion, diverting water from the Upper to the Lower Basin, and would require Congressional approval under the Colorado River Compact of 1922. Due to how the Basin lines are drawn, Lake Powell is in the Upper Basin and Washington County is in the Lower Basin. Figure 11: Map of the Upper and Lower Colorado River Basins The Colorado River Compact did intend for some states to be in both the Upper and Lower Basin. Article II of the Compact defines Upper Basin as “those parts of the States of Arizona, Colorado, New Mexico, and Wyoming within and from which water naturally drain in the Colorado River System above Lee Ferry” and the Lower Basin as “those parts of the States of Arizona, California, Nevada, New Mexico, and Utah within and from which waters naturally drain in the Colorado River System below Lee Ferry...” Article VIII explains that “rights to beneficial use of waters of the Colorado River System shall be satisfied solely from the water apportioned to that Basin in which they are situated.” A way to transfer Colorado River water between states would be by “direct future legislative action...” The Lake Powell Pipeline would likely fail if brought to Congress. This is in large part because the other basin states have joined together to oppose the project. On September 8, 2020, Arizona, California, Colorado, New Mexico, Nevada, and Wyoming sent a letter to the Secretary of the Interior opposing the Lake Powell Pipeline.

The basin states noted in the letter that the “Lake Powell Pipeline Project will divert water from the Upper Basin to serve communities in the Lower Basin in Utah.” The states also brought up the Navajo-Gallup Water Supply Project in New Mexico, which delivers a portion of New Mexico’s Upper Basin water to its Lower Basin. The Navajo-Gallup Water Supply Project is similar to the Lake Powell Pipeline as it is a trans-basin diversion of Colorado River water within one state. The Navajo-Gallup Project went through Congress and the Upper Basin commission before the FEIS and ROD was completed. The Omnibus Public Land Management Act of 2009 was signed on March 30, 2009, and authorized Reclamation to construct the project pending completion of the FEIS and ROD. The FEIS was filed on July 6, 2009, and the ROD was signed on October 1, 2009. In addition to congressional authorization, the Upper Colorado River Commission also produced a resolution in support of the Navajo-Gallup Project in 2003. In this resolution, the Upper Basin states joined together to support the Project, but they did note “the states are not in agreement as to whether, under the Law of the River, New Mexico may use a part of its Upper Basin apportionment to serve uses in the Lower Basin portion of New Mexico, without obtaining consent of the other states.”

Lake Powell Pipeline cannot be completed until there is congressional approval since the project would be an Upper to Lower Basin water transfer. The Lake Powell Pipeline will not get the same approval that the Navajo-Gallup

Project received from the basin states, as the six other Colorado River Basin states have already openly opposed the Lake Powell Pipeline. The Division continues to go through the NEPA process without noting that NEPA is not the end of the approval needed for Lake Powell Pipeline. Even if the Lake Powell Pipeline survives the NEPA process, it will not survive Congress, and the Division omitting this important step is an attempt to hide the reality of the project from the public. The reality is that the Lake Powell Pipeline does not have any support outside of Utah, and as the Colorado River continues to decline, it will continue to lose support.

The Draft Water Resources Plan overestimates Washington County's water demand. Water delivery data obtained from the WCWCD by two separate GRAMA requests, one for 2009-10 and one for 2015-2019 offer clarity about real water demand figures inside Washington County. In 2009, the WCWCD supplied 18,907 acre-feet of water. In 2010, that number increased to 19,561 acre-feet. The GRAMA response for these numbers is reproduced in Figure 5 and Figure 6. In 2015, total water use in the WCWCD increased again to 21,172 acre-feet and stayed at that general level until 2015. The GRAMA response for these numbers is reproduced in Figure 3. Figure 3: WCWCD's 2015-2019 Water Use The water demand figures from these GRAMA requests coincide with a number of data points from other sources, affirming their reliability. For example, in 2011 the WCWCD stated in a newsletter that they supplied to the public that this water district delivered 6.4 billion gallons, or roughly 19,600 acre-feet, of culinary water. Furthermore, data from the Utah Division of Water Resources' public data portal shows that all of Washington County, which is a larger geography and population area than WCWCD, used about 52,000 acre-feet of water in 2015. This is shown in Figure 6, taken from the DWRe's website in August of 2020. Figure 6: DWRe 2015 Washington County Data The 2020 Lake Powell Pipeline DEIS showed that WCWCD currently supplies about 48% of all the total water used in Washington County. If this were true in 2015, which is a reasonable assumption to make, then WCWCD's total demand in 2015 would have been roughly 25,000 acre-feet. Although this is a rough estimation method, the resulting total water demand figure is within the ballpark of the numbers obtained from the GRAMAs. Similarly, in 2017 the WCWCD reported to the official bond rating agency Fitch Ratings the following: About 28% of the [Washington County Water Conservancy] district's 32,000 acre feet (af) per year of water sources is surplus and will be used to serve future growth and another 13,900 af will come online in the next few years. This shows that in 2017, the WCWCD delivered 72% of their available 32,000-acre-foot municipal water supply, meaning that the WCWCD used roughly 23,000 acre-feet in 2017. This value is essentially identical to that received via the GRAMA for the same year. All these sources – the GRAMA requests, the DWRe data portal, and the Fitch report – generally agree with each other that the WCWCD typically uses between 20,000 and 23,000 acre-feet of water each year. The Draft Water Resources Plan estimates that the population of Washington County is projected to increase by 229% by 2065. If the water use remained the same and WCWCD upped their demand by 230%, this would equal 52,900 acre-feet of water and about 106,000 acre-feet of water for all of Washington County, at most; however, the Draft Water Resources Plan claims that the Kanab Creek/Virgin River Basin will need 146,000-219,800 acre-feet of water in 2070, with no explanation of how those numbers were reached. This is an absurdly high estimate of what this Basin will require with a growing population, especially as agricultural water is converted to municipal water, which will happen with a growing population.

If the Draft Water Resources Plan used reasonable water supply and demand estimates, it would show that Washington County does not need the Lake Powell Pipeline. Figure 2 demonstrates that there will be at least 189,000 acre-feet of water in the Washington County, and one acre-foot of water can support at least 2.5 households (or 6.5 people). This means that Washington County's future water supply could reasonably support 1.2 million people, which is far more than 508,000 people the Gardner Institute projects will be present in Washington County in 2065. The Draft Water Resources Plan further claims that part of the need for the LPP project is to create a secure water supply: ...most residents in Washington County are primarily dependent upon a single water source – the Virgin River basin. This river basin has variable water quality and quantity. The LPP will diversify the region's water sources and build more resiliency and reliability for current and future residents. This is a false statement by the Division. Washington County currently has ample and diverse water sources. Figure 2 demonstrates that there is at least 189,000 acre-feet of reliable, non-groundwater sources in Washington County and Figure 1 shows that the BOR does not expect flows in the Virgin River to decline by any significant amount even with all the additional pressures of climate change. The BOR itself estimates that flows in the Virgin River will remain well above 160,000 acre-feet throughout the century. Furthermore, the district claims to have access to a 100,000 acre-foot water "bank," which will be used to shore up supplies during anomalously low-water years. The district states that this emergency water storage will eventually grow to 300,000 acre-feet. This is a tremendous quantity of water and is more than enough to provide a secure source to a population of just over 500,000 people.

**Lisa Rutherford & Paul Van Dam:** Although there is much in this Plan to agree with, in the final analysis it is just one more way of promoting the Lake Powell Pipeline by scaring citizens about Washington County water running out soon. Let's be clear. It's not just environmental groups that are objecting to the proposed Lake Powell Pipeline. The other six Colorado River Basin states have also objected "formally" in a letter last September 2020 to the Bureau of Reclamation.

Officials have had their eye on the pipeline water for so long that they lost sight of what is really needed to help our local resources sustain us. Yes, climate change will reduce the amount of water available locally but with our

current (and planned!!) overuse diminished we can make better use of that, while the Colorado River continues to diminish and we save pipeline dollars. We thank the Department of Water Resources for their effort on this plan, but they are still focused on the pipeline water for Washington County, and that is a sad thing to see.

Page 75 of the Local Water Alternative to the Lake Powell Pipeline 2.0, near the end of the document states: This revised portfolio provides a reliable future supply of at least 111,212 AF of culinary water and an ongoing 15,693 AF of secondary water, sufficient reliable supply to meet anticipated average year future demands, and offers a much less expensive, less risky, locally controlled approach for providing water into the future.

During the past fifteen years during which we have tracked the Lake Powell Pipeline and attended public meetings, we have heard ad nauseam about the Colorado River Lower Basin states using more than their allotment and much of the complaining has been justified. Here's what Arizona and California are doing now to save water, above and beyond what's already expected of them while the Upper Basin states such as Utah clamor for more.

"Arizona, California and Nevada are moving forward with a plan to save another 500,000 acre-feet of water in Lake Mead annually until 2026. We're talking 500,000 acre-feet over and above the mandatory cuts that are spelled out in the 2019 Drought Contingency Plan (DCP). Each year. For five years." Things are changing and Utah's 23% of the Upper Basin water is becoming less and less with diminished flows. We must do better not just seek more.

**Martha Ham:** Recently the Division of Water Resources announced that Washington County will be out of water in 10 years which is stated in the WRP. This is an untrue statement and should be corrected in the final plan. The Washington County Water Conservancy District has failed to accurately report an accurate inventory of water in the county that is available for development. This is documented in the 2021 Local Waters Alternative 2.0 study completed by Western Resource Advocates. Washington County will not be out of water in 10 years if it develops these waters and implements meaningful water conservation practices throughout the county. This statement is a scare tactic that is unethical to use in garnering public support for the Lake Powell Pipeline.

The Bureau of Reclamation has gone on record to say there are more rights allocated for use of the Colorado River than the actual water the Colorado River produces. Continuing to argue over access to a diminishing supply is wasting time and resources that could be devoted to developing dynamic water conservation, storage and reuse methods. The LPP has junior water rights to the Colorado River and users with senior rights will be granted water first from the increasingly dwindling flow. As a result, the LPP is not a secure or dependable source of water.

No effort should be exercised to complete the National Environmental Policy Act process for the Lake Powell Pipeline. Last year's Draft Environmental Impact Statement was challenged by various parties, including the other Colorado River Compact states, because it introduced arbitrary and capricious justifications, including a "need" for a "secondary source," assuming a 15% water loss, and basing project needs on population 15 years after the end of the plan. The process was stopped and the issues at the root of the 6 states' claims have not been resolved. For Utah to move ahead with the NEPA process in seeking approval for the LPP the state will, in effect, be inviting a water war with neighboring states who have warned that litigation will be pursued if Utah doesn't settle these issues first with them before pursuing federal approval.

**Meagan Leigh:** Drop the Lake Powell Pipeline pipe dream. It has cost the taxpayers too much money & will never go forward....look for water alternatives right here in Washington County & not look to the depleted Colorado River to supplement our water wasting ways. Thank you

**Nad Brown:** Now that millions of dollars have been spent promoting water going to the Southwest do we get to see the plan on the computer.

**Nate Housely:** I oppose the Lake Powell Pipeline. It encourages wasteful water usage in Washington County, which is subsidized by the federal government. Native American tribes in the Uinta Basin should be given full priority to any water available to Utah under the Colorado River Compact. The residents of the Uinta and Ouray Indian Reservation have been subjected to false promises and delayed water development projects for about a century. The idea that we would develop water for golf courses in St. George at the expense of the reservation in the Uinta Basin is unconscionable.

**Nobel Keck:** Once Lake Powell and Lake Mead are below the generator intakes Vegas, AZ and CA will take a big hit, the water shortage will not be slow but sudden!

**Owen Shiverdecker:** Clearly the Powell pipeline is not a viable option for the Washington County area. Water is and will continue to be in short supply.

**Pamela Palmer:** I believe it is unconscionable that the Utah state Water Resource Plan does not include a complete proposal and management strategy that DOES NOT include the Lake Powell Pipeline. There is no



guarantee that the pipeline will be built. Climate change will continue along with the possibility of increasing drought in the western states. Even if the pipeline is constructed it will take many years before it is operational, and by that time Washington County will be out of water.

**Richard Spotts:** In addition, there are both recommendations to proceed with the Lake Powell Pipeline and ambitious water conservation and reclamation projects in Washington County. The reality is that Washington County officials continue to pour millions of public dollars into foolishly promoting the Lake Powell Pipeline while being slow, frugal, and modest in considering the implementation of already-proven-successful-elsewhere incremental water conservation measures. The Lake Powell Pipeline continues to be the primary "shiny object" that undermines and diverts attention and investment away from much less risky and expensive options. I've been involved as a volunteer in Utah water issues for many years. I provided extensive comments for scoping and on the Bureau of Reclamation's patently inadequate Draft Environmental Impact Statement (DEIS) for the Lake Powell Pipeline. I also strongly support, concur with, and hereby incorporate by reference the excellent recommendations in the Western Resource Advocates' "2021 Local Waters Alternative to the Lake Powell Pipeline" report. Despite frivolous objections from Lake Powell Pipeline proponents, these recommendations chart a positive and reliable way forward to meet Washington County's current and future water needs.

**Steve Erickson:** Support for the Lake Powell Pipeline sucks resources – and credibility – away from other important goals and recommendations in the WRP.

**Tyler Christensen:** No Lake Powell pipelines.

**Vince Olson:** No LPP, No Golf Course.

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** It's commendable that the Plan recognizes there are opportunities to save water, as when the Plan recognizes that "only about 20% of the nearly 4,600 miles of irrigation canals are piped in Utah (DWRi 2018). The remaining 3,600 miles of open canals represent a significant opportunity to improve conveyance of Utah's agricultural water." However, some of these proposals, such as piping open irrigation canals, have environmental consequences for adjacent vegetation and quality of life that are blithely ignored, leaving any recognition of possible problems to specific projects which too often fall below the radar of public scrutiny. Both off-farm and on-farm water conservation practices are described, and the Plan notes that "properly maintained and piped irrigation water that is monitored for leaks can nearly eliminate losses." Interestingly, this belies the assertions of the LPP Draft Environmental Impact Statement that claimed system loss of 15%. How can we have it both ways?

...it continues simply arguing for big projects like the Lake Powell Pipeline and Bear River Development. A central conclusion on the LPP is to "Complete the National Environmental Policy Act process for the Lake Powell Pipeline." But last year's Draft Environmental Impact Statement was challenged by various parties, including all of the other Colorado River Compact states, because it introduced arbitrary and capricious justifications, including a "need" for a "secondary source," assuming a 15% water loss, and basing project needs on population 15 years after the end of the plan.

On page 83: "Even with water conservation and agricultural to M&I conversions, additional water will be needed in the Kanab Creek/Virgin River basin in the next 10 to 15 years to accommodate projected population growth." But this ignores whether "more" water will actually be available. The Plan fails to develop alternatives needed to keep demand within supply without the LPP. The Plan claims that the Santa Clara and Virgin River basins are "fully developed" with respect to water but WRA's Local Waters Alternative 2.0 described many thousands of acre-feet of water that are already planned. Ignoring this, the Plan concludes we must have the LPP. It's as if LPP proponents have already decided they want the LPP and the Plan was developed to give them political cover.

**Zeppelin Zeerip:** The Lake Powell Pipeline must be stopped for the future health and well being of our beautiful state.

## Development - Pine Valley

**General Response:** This Plan presents actions the Division is taking within the next five years. It isn't intended to provide a full description or evaluation of projects or programs under the direction of other entities. No change was made to the Plan in response to these comments.

**Billy and Abby Jergins:** I want to see the Pine Valley reservoir enlarged and mud removed from the reservoir. It is an very important reserve water shed and fishing resource. Very important to fire fighting as well.

**Lindsey Hutchison (Utah Rivers Council):** On page 90, the Division states that the CICWD [Central Iron County Water Conservancy District] is pursuing the proposed Pine Valley Project to "bring balance to the Cedar Valley

aquifer and provide for growth in the valley.” However, the Division entirely fails to mention the CICWD’s Financial Business Plan and Water Needs Assessment for the Pine Valley Project. This study analyzed how much water CICWD would need to meet its projected water demand while accounting for the gradual reduction in Cedar Valley aquifer use and identified six scenarios the CICWD could pursue to obtain this water. Most of the six scenarios were a combination of different conservation methods involving actions like expanding water reuse facilities, while two were different iterations of the Pine Valley Project. All would provide enough water to meet CICWD’s future demand.

Of all the scenarios, the two involving the Pine Valley Project were found to be by far the costliest. Scenarios involving the Pine Valley Project were estimated to cost roughly \$260 million dollars, while conservation-based scenarios were estimated to cost between \$50 and \$100 million, making the conservation-based scenarios up to five times less expensive than the Pine Valley project. The study estimated that water rates in the CICWD service district would need to increase 700% to repay the Pine Valley Project, while rates would only need to increase 0.5% to repay the conservation based scenarios. It bears repeating that these results come from the CICWD’s own study, not a third party.

In other words, the CICWD themselves found that there are numerous alternatives to the Pine Valley Project and that the Pine Valley Project would be the most expensive path the CICWD could pursue to secure water for their future. Nevertheless, the CICWD continues to pursue the Pine Valley Project. The Division should revise the Water Resources Plan to make clear that the CICWD themselves found that numerous alternatives to the Pine Valley Project exist and that the Pine Valley Project would be the most expensive way to secure the water future of the Cedar Valley.

## Education

**General Response:** The Division agrees: Education is key to responsible water use. The Division supports efforts to provide water education in Utah schools and to the general public. Successful education programs require consistent legislative support and adequate funding. No change was made to the Plan in response to these comments.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** Providing water education to children in the state is critical for the development of coming generations’ water stewards. We note with sadness, however, that budget cuts have drastically reduced these educational efforts and request that the state do everything possible to reinstate this funding and these programs.

**Lisa Rutherford & Paul Van Dam:** Educating our children – our state’s future! – is essential, and the Plan notes how important that is but then mentions the challenges the Division faces: “A foundational understanding of water leads to responsible water use, which is why the Division has supported water education efforts. However, in the summer of 2020, due to budget cuts triggered by the COVID-19 pandemic, the Division’s education program was cut, eliminating resources previously provided to schools and teachers.” Even to date the Division has only been providing water education to 4th graders. That is not enough to meet our state’s needs for a solid water future. A water curriculum must cover many grades and perhaps be incorporated in all grades in some manner. Water is a part of all aspects of our lives. We cannot rely on one year of reinforcement at the 4th grade level to be enough.

**Megan Nelson (The Nature Conservancy):** In “There’s Work To Do”, water education and education funding should be included in State Government examples.

## Enforcement

**General Response:** The Division of Water Resources has no authority to enforce ordinance nor laws. No change was made to the Plan in response to these comments.

**Barbara Glines:** Any business that over waters or waters outside of structured time constraints, should be fined for those behaviors.

**Kristen Banzh:** Water restrictions should be placed for Everyone, Ever year regardless of drought. This builds water supply. This year proved that we are overusing water every year. We can, and should water our lawns with far less. My lawn was brown in spots for a time, but it came back and flourished. This with using even less water than the restricted amount. If there is opposition to this, tell the complainers to use their tears to water their lawns. We need to stop babying everyone and do what's best for our farmers, children, and future.

**Nick Schou (Western Resource Advocates):** Rigorously enforce Utah’s Antidegradation Rules.

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** It proposes no suggestions for regulatory or enforcement provisions. In their conclusions, UDWR divides their recommendations into three sections: Reliable Data, Supply Security, and Healthy Environment. But none of the recommendations include enforcement provisions, so many water delivery systems will just mosey along, claiming they don't have to live within the available supply, and little will be accomplished. There's nothing in their recommendations that will force water users to conserve and adapt to environmental realities. Rather, UDWR continues under the assumptions that we just need to "develop more water" to meet demands of increasing population, regardless of whether that's necessary, risky, or prohibitively expensive.

## Environmental Assessment

**Megan Nelson (The Nature Conservancy):** Add a specific consideration of environmental impacts to recommend water use projects for suitable areas. *\*An environmental assessment is a requirement of the National Environmental Policy Act (NEPA). Any project which is associated with a federal program must comply with NEPA. The Division complies with NEPA requirements. No change was made to the Plan in response to this comment.*

## Funding

**General Response:** We agree: Water conservation efforts should be adequately funded and implemented throughout Utah. Conservation programs are largely funded at the local level. The Division doesn't have the authority to enforce conservation mandates nor fund conservation programs at the local level. The Division's water conservation team administer state funds for approved rebate programs and secondary water metering programs. No change was made to the Plan in response to these comments.

**Alexander Pappas:** Provide adequate funding and investments for effective water efficiency and conservation. Funding and investments are needed to fully realize the potential contributions and return on investment that water efficiency and conservation efforts can make to provide for Utah's water future. Water agencies should budget for water conservation programs similarly to how they budget to develop new water supplies. Funding for conservation measures also should be made available on an ongoing basis.

Investments should be made in water demand management infrastructure to measure, track, report, and implement efficiency standards. Needed resources also include agency staffing and budgeting to better integrate conservation into water systems, enhance ongoing interactions with the public, deliver conservation programs, and conduct research and evaluation. Many different states, regional, and local entities can help promote water conservation, so funding and resources from multiple sources need to be allocated to these efforts. Ongoing and sufficient support for water efficiency and conservation should be prioritized and forthcoming to make these efforts effective at contributing to Utah's water future."

**Martha Ham:** Please include in the WRP the recommendation from Envision Utah, in July of 2017: "Provide adequate funding and investments for effective water efficiency and conservation. Funding and investments are needed to fully realize the potential contributions and return on investment that water efficiency and conservation efforts can make to providing for Utah's water future. Water agencies should budget for water conservation programs in a manner similar to the way they budget to develop new water supplies. Funding for conservation measures also should be made available on an ongoing basis.

Investments should be made in water demand management infrastructure to measure, track, report, and implement efficiency standards. Needed resources also include agency staffing and budgeting to better integrate conservation into water systems, enhance ongoing interactions with the public, deliver conservation programs, and conduct research and evaluation. Many different state, regional, and local entities can help promote water conservation, so funding and resources from multiple sources need to be allocated to these efforts. Ongoing and sufficient support for water efficiency and conservation should be prioritized and forthcoming to make these efforts effective at contributing to Utah's water future."

**Richard Spotts:** This recommendation from the State Water Strategy team's July of 2017 50-year water plan that is in Envision Utah's water report still remains timely and appropriate: "Provide adequate funding and investments for effective water efficiency and conservation. Funding and investments are needed to fully realize the potential contributions and return on investment that water efficiency and conservation efforts can make to provide for Utah's water future. Water agencies should budget for water conservation programs similarly to how they budget to develop new water supplies. Funding for conservation measures also should be made available on an ongoing basis. Investments should be made in water demand management infrastructure to measure, track, report, and implement efficiency standards. Needed resources also include agency staffing and budgeting to better integrate conservation into water systems, enhance ongoing interactions with the public, deliver conservation programs, and conduct research and evaluation. Many different states, regional, and local entities can help promote water

conservation, so funding and resources from multiple sources need to be allocated to these efforts. Ongoing and sufficient support for water efficiency and conservation should be prioritized and forthcoming to make these efforts effective at contributing to Utah's water future." I hope that my comments are helpful. I wish you every success in your work to address Utah water needs in an objective, scientific, and sustainable manner. Thank you very much for your consideration.

## Infrastructure

**General Response:** The 2021 Water Resources Plan is intended to outline actions that can be accomplished by the Division of Water Resources (Division). The Division doesn't have authority for infrastructure requirements, design, construction, maintenance, repair, nor replacement. While comments in this section are important, they are outside the Divisions authority for actions. No changes were made to the Plan in response to these comments.

**Dan Watt (Water for the West LLC):** The entire plan assumes that conservation will provide sufficient water for our future 50 years from now. If the drought has taught us something is that we don't have sufficient water. Conservation is necessary but insufficient. We need to start thinking out of the box or we are going to be in the position California is experiencing right now that is led to their industry and population shrinking and having water shortages. There are articles out there that talk about the experience for Californians feeling like a third-world country. Farming is an important part of our industrial base and economy as well as it provides some level of self-sufficiency. Lack of action to address the need for additional water sources will lead to the commoditization of water to the point where farmers will no longer be in business. Water needs to be affordable and insufficient supply to fuel our future. The document states: "Ultimately, we are faced with the same the dilemma as the early settlers – there is a finite supply of freshwater." It seems that the Division of Water Resources is stuck in the belief that we can't add affordable significant water sources to our watersheds and communities. Unlike the early settlers, today the technology exists to bring water to Utah. The time is now to start looking at water sourcing options.

We also need to start now to build infrastructure to support our future, conservation is only buying us time, and we need to take advantage of it. From 1920 to the 1960s we build large infrastructure projects to secure our future and allow the west to grow. It has been 5 and 1/2 decades and we have not invested in major infrastructure to support our continued growth. The return on investment from those projects has paid for themselves via tax base growth, and GDP growth. We need to invest in our future now more than ever. Please we don't need to bury our heads in the sand and say we will be OK. The result will not be an outcome beneficial to Utah's future.....the federal government is not going to take action unless the states in the west demand it. We need a section to address the addition of more water to Utah and the west. Arizona gets it and is funding \$160 million to study various out-of-the-box options. Piping water from ample water sources not only needs to be studied, but a plan needs to be put in place for building the infrastructure as we survive by living and conserving what we have. We have brackish wells across Utah that can be cleaned up with current technologies in an affordable way to provide additional water. But ultimately I want Utah to thrive not just survive.

**Glenn Robinson:** The document correctly points out that because of the dispersed nature of water basins in Utah that a statewide interconnected water network such as that for natural gas is likely not cost effective or as the or as the draft asserts impossible. However, the document also points out that Regional planning and potentially interconnection is appropriate. For example, demand and supply numbers for the Wasatch Metro Area, an aggregation of several water basins, are presented and analyzed. The common denominator is geography, water from the several basins ultimately would flow downhill to the Great Salt Lake if not diverted.

I recommend that for planning and interconnection purposes that the Cedar/Beaver Basin be combined with the Kanab/Virgin Basin, again on the basis of Geography. The water producing areas in the Cedar/Beaver Basin are all 2,000 to 3,000 feet higher in elevation than the population centers in Washington County. The law of gravity is still in force. The document correctly asserts that "Agricultural conversions [in the Kanab/Virgin Basin] will only contribute a small amount of reliable water supply due to limited irrigated agriculture remaining." If the planning area is expanded as recommended and market mechanisms favorable to water moving dynamically to its highest and best uses based on a market clearing price as determined by supply and demand, an amount of water that begins to approach the magnitude of the Lake Powell pipeline could become available from large underground aquifers especially during surface water drought periods when prices would be higher.

Yes, infrastructure would be required. The document points out that "The Washington County Water Conservancy District connects many of the nearby cities through its regional supply pipeline network, allowing most of the population to be supplied through interconnected water distribution." Interconnection of this network to large aquifers in the Cedar/Beaver basin would cost a fraction of currently proposed projects. The combined Kanab/Virgin and Cedar/Beaver basins account for \$7.3 Billion of the infrastructure that s proposed in this plan. I am not opposed to either the Lake Powell Pipeline or the Pine Valley Water Supply project in Iron County. But because of the enormous cost before the first gallon flows to markets, these projects should not be fast tracked but rather

pursued in an orderly process that first includes optimization of existing water resources through development and use of efficient market mechanisms.

**Dolly Peach:** I am wondering about storm-drain infrastructure. Some parts of Salt Lake City flood up from the storm drain gates on certain days of the week. This would be helpful during big rainstorms and for individuals whose residential sprinklers spill into the gutters. Urban infrastructure may be an important factor in water waste that I thought could be addressed more in-depth. \* Infrastructure is very important in water management and delivery. Infrastructure is planned, designed, installed, and maintained at the local level and overseen by the Division of Water Quality (Water Quality). Sometimes the local agency is a county agency; more often it is the local government, water system, or home owner's association. Best management practices, along with other useful information can be found on the storm water page of Water Quality's website at: <https://deq.utah.gov/water-quality/storm-water-permits-updes-permits>.

**Nick Schou (Western Resource Advocates):** Remove Prepare60 campaign materials (p. 85-86). As a state-authored water plan, we recommend removing marketing materials prepared by the group Prepare60. To date, Prepare60 has not supplied any detailed data to the public to support their claim that there is a \$38 billion shortfall in water infrastructure funding. A brochure on their website claims the figure came from various master plans, but it's not clear there is supporting material. Indeed, in some cases, Prepare60 states that community master plans were unavailable and certain assumptions and estimates were made. While our organization is supportive of investments to repair and replace aging water infrastructure to ensure efficiency, any such funding needs should be supported by reliable data rather than estimates and marketing brochures. Considering that this figure would comprise by far the largest alleged infrastructure need in the state--more than roads, housing, and energy--the Division should carefully scrutinize this claim, and the data, before including it in their plan. \*In 2013 Governor Herbert tasked eight water agencies, including Prepare60 water conservancy districts, with developing a Statewide Water Infrastructure Plan (SWIP). Prepare60 led development of the SWIP and the Division of Water Resources provided rural area data. Information contained in the 2nd Edition SWIP (2020) is accepted by Utah executive leadership as a planning guide for budgeting water infrastructure. As noted on page 84, information presented on pages 85 and 86 are excerpts from the 2nd Edition SWIP.

## Natural System Considerations

**General Response:** Thank you for taking time to review the draft 2021 Water Resources Plan (Plan) and for providing perspective on the importance of water for natural systems and watersheds. The Division of Water Resources (Division) recognizes the complex nature of altering natural waterways and uses. The Division encourages and supports efficiency, conservation, and optimization projects with potential to keep water in the natural system.

Although the Division recognizes the importance of concerns identified in these comments, the Plan is limited to actions that can be accomplished by the Division. The Division doesn't have authority to accomplish many of the recommendations in these comments. The Division collaborates with agencies and organizations who have those authorities. These comments have been taken into consideration for future collaborative efforts. At this time, no change was made to the Plan in response to these comments.

**Cheri I.:** We also need open space for the wildlife, otherwise the wildlife will no longer exist. Remember, the wildlife needs water and land too and overdevelopment will negatively impact wildlife.

**Colleen Winters:** It seems like environmental flows are always being challenged by those who would rather use it for something else. Southwestern Utah has at least 2 endangered species that I know of. Extending that thought to think of the individual, life in the desert is so terribly difficult already that each one could probably be considered as "endangered" every day. It doesn't need to be made worse by human overconsumption or ruination. They have a right to be here too. They were here first. Although we often act like it, we are not God. Even though He gave us "dominion" over all, that does not mean we get to do whatever we like. It means being a good caretaker whether it benefits us or not. We don't get to hog everything for ourselves.

Whether through water banking or some other means, the "protection or enhancement of instream flows for the natural system, wildlife and recreation uses" certainly needs to be a very high priority. As it says elsewhere in the report, all water cannot be for human use. Especially in the desert, water is such a precious commodity for all life, not just human life. The wild things of the world are at our mercy. We need to be responsible to share the world's resources equally with them, whether or not it will benefit us ourselves. These things are important for their own sake and the world needs them.

**E. Amriott:** Document has tremendous focus on water demand with little indicated assessment of impacts on natural resources (particularly the GSL), the environment, clean water, fish, birds and other wildlife, and recreational water use - all key to the health and well-being of our state.

**Jake Alvey:** We need to reexamine this plan for better preservation of our natural water resources. We should consider water use by residential areas in these future plans.

**Megan Nelson (The Nature Conservancy):** A place to recognize the impacts to environmental and natural systems is in the conversion from agricultural to M&I. In many cases, agricultural water benefits environmental flows and natural systems. The conversion to M&I cause negative impacts to these. This goes to the "balance" of water demand and supply that needs to include more environmental considerations.

As we reduce consumptive water use, we need to explore ensuring a portion of that savings is dedicated to environmental needs to maintain viable nature systems. If we can at least explore this possibility than many of the actions noted in the plan will also advance the third principle of healthy environment. For example: incentive conservation (depletion vs delivery) methods and allow a portion to be used of environmental needs.

The Plan could be improved overall by identifying positive and negative impacts to the environment and adding recommendations to balance the water needs for people and the environment. The Plan describes the importance of watersheds to water supply, but the Plan does not include any recommendations to sustain or increase ecological and local flows out of watersheds (e.g. forest treatment projects, coordination with watershed land management agencies/entities, etc.).

Plan needs to better specify how the State was going to advance the principle to preserve watersheds and the environment, especially in the realm of environmental flows needs. For example instream flows were only mentioned in Chapter 7 Ag Water Use and Optimization and Chapter 8 Water Law, and only in the context of with water banking. But to ensure a healthy environment some of this conserved water will need to be used to meet environmental flow needs. This starts with understanding environmental flows needs.

The second principle of "reliable data" could be strengthened to include scaling up the application of flow science so that it is integrated into water management planning and implementation. Water for the environment has been dramatically affected by alterations of flow for consumptive uses, e.g., dam construction and operation, irrigation, municipal and industrial use and channelization.

Healthy flows -- the characteristic inter-annual, annual, and seasonal flow patterns that sustain native plants, animals, and natural communities—have been altered by these formidable state-wide infrastructures for decades. Flow alteration has disrupted spawning cues, degraded habitat, and allowed for invasion by non-native plants and animals. In combination with other major threats, the dewatering and disruption of rivers has erased many native fish, birds, and plants from much of their historical ranges. Flow alteration is a principal cause of the listing of eight fish species in Utah as endangered or threatened under the Endangered Species Act with another seven fish species on the brink of such designation.

The principle of "supply security" could be strengthened by recognizing that healthy rivers, riparian areas, watersheds, and threatened and endangered species will require secure water supplies. To the recommendation to identify and secure critical environmental water needs, we recommend: developing a statewide flow assessment, conduct environmental flow assessments on Utah's most in need rivers, and a water budget on the Great Salt Lake.

Page 48, 4.1: "State, federal, and local natural resource agencies, along with other interested parties, should develop criteria (e.g., the importance to at-risk species and opportunities for protection) to rank river, riparian, wetland and lake systems in the state. These criteria should then be used to identify a suite of mapped high priority sites. For these sites, agreed upon methodologies should be applied to quantify the amount of water needed to sustain them.

Consideration of water quality standards would be included in the flow recommendations." By working with stakeholders, we can bring the needs of the environment into water supply solutions, we will integrate river flow protection and restoration into policy and practice at several of Utah's the most important rivers and the Great Salt Lake. Societal water needs can be met while also enhancing the health of our rivers and lakes.

**Eric Sorensen (Metropolitan Water District of Salt Lake & Sandy):** The 6th paragraph states "A healthy watershed is essential to support various interests including quality of life, natural and man-made environments, economic viability, water quality, and outdoor recreation." The District recommends adding public health as an important aspect of a healthy watershed. *\*The Division agrees. Public health is an important aspect of a healthy watershed. This suggestion was made in the Plan.*

**Lynn de Freitas (Friends of Great Salt Lake):** Instead of focusing on irrelevant information, the Division should simply present the amount of water available for use within the state and outline how that amount is divided. In any case, if the Great Salt Lake evaporative figure is going to be used, please also include the 1 million acre-feet per year of evaporation from storage reservoirs as well as the amount of evaporation from lakes, wetlands and

other open bodies of water. \*This is an excellent point. The Division will compile a table of evaporative losses from water bodies across the state. This data is calculated for large waterbodies in the Water Budget, but was not included in the summary table. No change was made to this Plan, but it will be incorporated in future updates.

**Rose Smith (Sageland Collaborative):** Based on the immense need for stream restoration across the state, we ask that the division include language in the plan describing evidence-based restoration practices that support this goal, such as low-tech process-based restoration. Restoration and prevention of future degradation is crucial for building resilience into our state's water resources. We ask that the Division integrate language about the role that natural ecosystems play in maintaining our water supply throughout the Plan. The Plan currently frames "Natural System Use" as secondary to human water consumption (Figure 3-3), noting that "not all incoming precipitation can be put to use." We respectfully point out that natural systems are not separate from the water we use. We ask that the Division add language in this section clarifying what goes into this calculation "Natural System Use"—namely transpiration of trees in our forests, which we rely on for maintaining a healthy environment and clean water supply. \*The Division appreciates your comment on this aspect of natural system use and the associated benefits. We will enhance the description of benefits on natural systems in future Plans. No change was made to this Plan.

## Natural Systems - Great Salt Lake

**General Response:** More than 80 comments to the 2021 Water Resources Plan were about Great Salt Lake. The Division acknowledges and appreciates the public's interest in the protection and management of Great Salt Lake. Thank you for sending us your comments and for being actively involved with water issues.

This Plan is an action plan for the Division of Water Resources. However, the Division works closely with other agencies and organizations regarding Great Salt Lake issues and we host a web page, <https://water.utah.gov/great-salt-lake/>, dedicated to providing information about ongoing efforts specific to Great Salt Lake.

The Division recognizes Great Salt Lake as an important resource with far-reaching benefits and has shared comments received during the 2021 Water Resources Plan public comment period with collaborating agencies and organizations for review and consideration. We also acknowledge key members of the Utah legislature for their work with the Great Salt Lake Commission, government agencies, and private organization to address concerns regarding Great Salt Lake. The Division and other agencies participate in those efforts.

**David Rosenberg (Utah State University):** Give the Great Salt Lake more prominence in the plan and explain how Utahns can protect and restore our great lake (pp. 129 to 130). The Lake is the namesake for our state's capital city. Keep the Great in Great Salt Lake requires more than passing a new law, asking parties to collaborate, and the UDWR provides model support. I want our state water plan to provide a vision for how to keep the Great in the Great Salt Lake. Many other features are needed.

**Erin Smeeding:** Follow all tactical, organizational, and foundational strategies to improve water management and increase water deliveries to the Great Salt Lake, published by the Great Salt Lake Advisory Council.

**Megan Nelson (The Nature Conservancy):** Commend the thoughtful discussion of and stating the importance of the Great Salt Lake in the Plan. As in other areas where milestones are acknowledged, the lowest recorded GSL level in 2021 should be added to the Plan. Because the Plan includes industrial uses, the GSL section should also talk about the importance of water flows to GSL for industry (mineral extraction, brine shrimp, etc.). The critical need for water to the Lake is clear, but the far ranging impacts of not getting water to the Lake could be emphasized more.

**Rachel Struhs:** The Great Salt Lake is not only a defining feature of Utah, it provides recreation for people along the Wasatch Front. It is the largest wetland in the American West where millions of birds stop at on their migration each year. With Utah's population steadily growing, it is time to address water consumption as a conservation issue. Climate change coupled with the diversion of water to the Great Salt Lake would be detrimental to the already terrible air quality Utah gets throughout the year. Instead of proposing ideas for diverting water for municipal uses, Utah should be encouraging water conservation.

**Tess Edwards:** Consider that this plan is easier done than undone. Don't make a decision you will come to later regret. If you have to conserve water in the future, it will be harder to take it from uses that already relied on it than to conserve it now. (Both logistically and legally). Protecting inflows to the Great Salt Lake should be the number one priority of this plan—not the reverse. The GSL not only provides key habitat, but is the reason for Northern Utah's thriving tourism and ski industries. If you starve the lake, it will be impossible to undo the damage. Modify the proposal, and beware the Owens Valley fate.

**Kelly Hannah:** While I have several comments I would like to echo from other respondents, I will refrain in the interest of pointing out what I believe to be the most critical flaw in the plan which relates to the map representations of Great Salt Lake. It is clear you have gone to extraordinary measures to ensure that the data in this plan is the most accurate and up to date data available, yet nearly every representation of Great Salt Lake illustrates the lake level as if it were the year 1987.

Page 39 related to cloud seeding contains the only accurate representation of Great Salt Lake's water level in the entire document.

Page 96 is the next closest representation, which acknowledges the current lake level (needs 2021 level footnote) with hash marks but still represents water in the lake to its (modern) historic highs of the late 1980's.

Page 44, the Drought Monitor Map, may be the greatest misrepresentation of the lake level in the entire document due to its color contrast and absence of terrain/text/satellite imagery that is more difficult to see in the other lake representations throughout the document. Clearly, Great Salt Lake has not looked like this for many decades, yet the legend sites the data as July 20, 2021.

For your convenient reference here is a list of the pages that need revised, accurate pictorial representations of the lake level. Page 14, 15, 32, 44, 95, 96 (The historic low notation should also note the date, 2021), 122, 126. The lake level representations must be changed. In their current state, the pictures are gross misrepresentations of the state of Great Salt Lake and do not align with the cited dates of the data that accompanies the illustrations. **\*You are right: Maps showing Great Salt Lake don't reflect the current water level. The base map used for maps created by the Division reflect the legal description of lakes. It is a standard base map used by government agencies throughout the nation. A partnership between the National Drought Mitigation Center (University of Nebraska), the US Department of Agriculture, and the National Oceanic and Atmospheric Administration is acknowledged for publishing the Drought Monitor maps. The Division contributes information to the Drought Monitor, but isn't responsible for creation of the published map. It is one example of other agencies and organizations using the standard base map. We discussed your concern and decide to continue to use the standard base map shown in the draft Plan.**

**General Response:** The Division doesn't have authority to dedicate or divert water to flow to Great Salt Lake. The Forestry, Fire and State Lands Great Salt Lake Management Plan includes a matrix that discusses different lake elevations. No "optimum" lake elevation is identified. The Division strives to research and compile data to inform fact-based decisions by those who have authority to take action. The Division is working with organizations and other state agencies on Great Salt Lake issues. No change was made to the Plan in response to these comments.

**Brooke Larsen:** Get more water to the Great Salt Lake.

**Dolly Peach:** What capital improvements are being made to ensure that more water draining off from urban streets makes it to the Great Salt Lake? I am concerned that if the Salt Lake dries up, our water and precipitation problems will become much more dire.

**Eileen Hilton:** There are two areas we need immediate and intense focus on before it's too late: Ensuring the Great Salt Lake remains healthy (for our own health, the economic impact, the millions of birds who depend on it, etc.). Rather than spending millions after the fact to deal with the Great Salt Lake after it reaches the point of no return (like California is attempting with the Salton Sea), let's tackle the hard chore of preventing that problem. Rather than spending millions after the fact to deal with the Great Salt Lake after it reaches the point of no return (like California is attempting with the Salton Sea), let's tackle the hard chore of preventing that problem.

**Emma Ryder:** It is the responsibility of the State to protect the Lake for all of Utah.

**Hannah Taub:** This water resources plan is not a plan to save the Great Salt Lake. The Bear River development outlined in this plan will divert more water from the lake, which is the opposite of what is needed. Protect the Great Salt Lake, a vital public resource for recreation, tourism, and flourishing life. Save the Great Salt Lake, and we will also save the snow in our mountains, wildlife in our backyards, and help protect our air from worse pollution than we already endure.

**Jared Harris:** Please do not divert water from the GSL, it would devastate our ecology, cause irreversible damage to the beauty of our state and to the health of its inhabitants.

**Lorin Burnett:** No water diversions away from great salt lake.



**Maggie Franz:** Please do something! I'm very alarmed and worried by the depletion of the great salt lake and the impact it's shrink has on our environment and public health. Please divert the city's water to flow into the great salt lake.

**Marcelle Shoop (National Audubon Society):** We appreciate that this water plan, more than others in the past, addresses concerns about water levels at Great Salt Lake. We recommend strengthening the statement of the goals for Great Salt Lake'. The discussion provides that the "Division will continue providing modeling support of part of the as part of this collaborative process, including refined estimates of the impacts of proposed water developments and climate change on water levels in the lake."

We think the foregoing statement should become part of the recommendations as well, since these aspects are fundamental to supporting efforts to address declining water levels at Great Salt Lake and to implement recommended solutions identified in reports by Great Salt Lake Advisory Council or the Great Salt Lake HCR10 Steering Group recommendations.

**Nick Schou (Western Resource Advocates):** Include a sub-section on protecting minimum lake levels (p. 129): We urge you to add a recommendation to explore setting minimum lakes levels for Great Salt Lake and Utah Lake, given their pivotal role in supporting Utah's environment, wildlife, economy, and identity. As the Plan acknowledges, ensuring that, in particular Great Salt Lake, is maintained at an appropriate level is also critical to reducing the hazardous dust that blows off exposed lake bed and therefore a necessary measure to protect public health.

**Sharlynn Jones:** This plan is unacceptable!! Save our great salt lake!

**General Response:** Utah Code 65A-10-8 allows for the management of Great Salt Lake as a public trust land. Public Trust Doctrine is a common law principle which characterizes waters of the state as public resources owned by and available to all citizens equally for the purposes of navigation, conducting commerce, fishing, recreation and similar uses.

The State of Utah concurs with the Public Trust Doctrine and declares that beds of navigable waters within the state are owned by the state and are among the basic resources of the state, and that there exists, and has existed since statehood, a public trust over and upon the beds of these waters. It is also recognized that the public health, interest, safety and welfare require that all uses on, beneath or above the beds of navigable lakes and streams of the state be regulated, so that the protection of navigation, fish and wildlife habitat, aquatic beauty, public recreation and water quality will be given due consideration and balanced against the navigational or economic necessity or justification for, or benefit to be derived from, any proposed use.

The Division supports the principles of the public trust doctrine and works with Division of Forestry, Fire and State Lands in their efforts.

**Ashleigh Albrechtsen:** Great Salt Lake is a Public Trust resource, held in trust by the State, and the state agencies whose actions impact the Lake have a moral, ethical and legal obligation to ensure that those actions do not infringe on that resource.

**Brooke Larsen:** Great Salt Lake is a Public Trust resource, held in trust by the State, and the Division of Water Resources has a moral, ethical, and legal obligation to ensure that those actions do not infringe on that resource.

**Katie Newburn:** Great Salt Lake is a Public Trust resource, held in trust by the State, and the state agencies whose actions impact the Lake have a moral, ethical and legal obligation to ensure that those actions do not infringe on that resource. The Division of Water Resources is one of those agencies with a legal obligation to preserve Great Salt Lake as a public trust resource.

**Maya Kobe-Rundio:** Great Salt Lake is a Public Trust resource, held in trust by the State, and the state agencies whose actions impact the Lake have a moral, ethical, and legal obligation to ensure that those actions do not infringe on that resource.

**General Response:** The Division has no authority to manage Great Salt Lake. The Division of Forestry, Fire & State Lands (FFSL) and Water Quality (DWQ) are the primary state agencies with authority to oversee Great Salt Lake. FFSL considers it imperative that the management of Great Salt Lake include coordination in planning and actions by other agencies with jurisdictional responsibility for these resources. The Division of Water Resources (Division) supports these agencies regarding Great Salt Lake.

**K. N.:** The state must protect Great Salk Lake. I'm a Nevadan but people here care deeply about it. If GSL were to dry up, that would affect my state with air quality issues. I'm also a birder who wants all wildlife to be protected

and GSL provides crucial habitat for so many species! Great Salt Lake is a Public Trust resource, held in trust by the State, and the state agencies whose actions impact the Lake have a moral, ethical and legal obligation to ensure that those actions do not infringe on that resource. It is time for the Division to stop pretending that we will have all of the water we want going forward, and be upfront with the people of Utah that there are stark choices staring us in the face unless we significantly change our approach to water use.

**Lynn de Freitas (Friends of Great Salt Lake):** It's not surprising that Idaho and Wyoming are not concerned about Great Salt Lake, but the State of Utah has to be. Great Salt Lake is a Public Trust resource, held in trust by the State, and the state agencies whose actions impact the Lake have a moral, ethical and legal obligation to ensure that those actions do not infringe on that resource.

**General Response:** Comments in this section demonstrate passion for Great Salt Lake and recount what an asset it is to natural systems, avian communities, and humans. We appreciate these comments. The Division knows that hard decisions need to be made regarding Great Salt Lake. We recognize the value of a healthy Great Salt Lake watershed.

**Claire Taylor:** The Great Salt Lake is an ecological cornerstone and a treasure and it should be treated as such. A shrinking and a dying Great Salt Lake will have vast consequences. The dust from the dried up lakebed will negatively affect our air quality (air quality which is already often detrimental to our health), and will negatively affect the wildlife habitats of the Great Salt Lake.

**Dan Watt (Water for the West LLC):** The next concern is that of the drying of the great salt Lake. Experts are predicting that once it dries up we will have environmental issues with contaminated dust from a dry lake bed, and no more lake effect snow putting moisture in the mountains for our future consumption. At our current growth rate, the flow of the tributaries to the Great Salt Lake will stop and the Salt Lake will completely dry up. We need to study the effects and how do we prevent it from getting worse if it is not already too late.

**David Rosenberg (Utah State University):** The lake and adjoining wetlands benefit Utah's economy, contribute to Utah's snow pack as the greatest on earth, and host millions of birds. As the lake level drops, the exposed lake bed generates dust that many Utahns breathe. That dust also diminishes mountain snowpack. Keep the "Great" in Great Salt Lake requires more than a short note in the final two pages of the state water plan. Please make the Utah state water plan articulate a vision for how to protect and recover our Great Salt Lake.

**Douglas Tolman:** With new data coming forth about the microorganisms in GSL, and their part of the food chain which keeps our local ecosystem healthy, it is irrational to think that a plan which further lowers the level of GSL would be smart. Additionally, the toxic particulate and heavy metals in the lake bed will be further exposed with a drop in lake levels. Wind storms kick these particulates into the air and into our lungs. With a vast majority of Utah's population living directly downwind of GSL, we cannot afford to expose more lake bed through our actions.

**Gregory Wilson:** The Great Salt Lake is approaching an environmental tipping point similar to Lake Urmia or the Aral Sea. Where this point is, we do not fully know. Hopefully we have not already crossed it. But the flows from the Bear River must not be reduced any further. The lake should be seeing an increase in inflow from many if not all of its tributaries.

**Hannah Taub:** I have witnessed the rapid shrinking of the Great Salt Lake this summer as I spent a lot of time on Antelope Island. The effect of drought on the GSL impacts recreation - visitors from out-of-state who come to splash or kayak in the lake and are confronted with a dried-up puddle. The drying up of the GSL has also impacted wildlife - bird migrations are made more difficult by shrinking habitat once protected by water. Microbiolites that have existed for thousands of years are being exposed to the surface. Without the Great Salt Lake, Utah won't have the "greatest snow on earth," and Salt Lake Valley residents will be breathing in toxic dust from the lakebed.

**I. R.:** Dropping the lake's levels that low is dangerous for the animals who survive in the lake's ecosystem as well as the people who live in the Valley! If you continue with this project, it shows the lack of regard for not only animal life, but the residents of Utah.

**James Teton:** The Great Salt Lake will be the demise of future growth in the Wasatch Front if it continues to dry up. I was pleased to see Kennecott appropriate the 21000 acre feet of water they are not using and could take back in 10 years. But it is a drop in bucket. By all accounts in the news the lake bed is full of mercury and other poisonous metals that if whipped into the air can cause serious health problems if inhaled.

Almost a third of all migratory mammals come through the Great Salt Lake. However lately, hundreds if not many more have been cited dead on the shoreline. Only 5000 of the 31,000-acre wetland preserve are currently useable. Given that there is little water coming from the Bear River because of water rights up stream the wildlife will suffer the greatest and even more so if there is a pipeline to divert even more water.

**James Teton:** There have been many examples of lakes bled dry around the world and the consequences after are intolerable. Los Angeles was largely developed because of a lake they bled dry. They have spent hundreds of millions of dollars trying to remediate the lake because the minerals blown in the air are so toxic. There is no way to remediate the Great Salt Lake. It is so large that it would be cost prohibitive. And people would flee if this health hazard makes the Wasatch Front inhabitable. Fortunately for us the latest infrastructure bill from Congress is allocating millions to build a pipeline. I wonder what plants, mammals, fish and people will be short changed?

**Katie Newburn:** My greatest concern as a resident of northern Utah and a human requiring clean air to breathe is Great Salt Lake. This is an environmental disaster unfolding in our own backyards.

Look no further than Owens Lake in southern California to find out what happens when population growth drains saline lake systems dry. According to the Great Salt Lake Advisory Council's 2019 report, "Assessment of Potential Costs of Declining Water Levels in Great Salt Lake," a drying Great Salt Lake will cost \$1.69 billion to \$2.17 billion per year (\$25.4 billion to \$32.6 billion over 20 years) and over 6,500 job losses.

Anyone who cares about our economy, our environment, or human health, has an interest in maintaining a functional water level for Great Salt Lake. It seems that the Division recognizes the threats posed to Utahns by Great Salt Lake's declining water levels, as described in Chapter 9 (pages 129-130) of this plan.

**Landon Manning:** The ecosystem of the great salt lake is hanging by a thread. Please, listen to the scientists, this could be the final nail in the coffin. Help us revitalize and restore this ancient and important habitat and ecosystem.

**Laurie Mecham:** Drought, environmental degradation, and poor air quality are three threats to the quality of life in Utah. Diverting water from the GSL via Bear River development will further damage the already suffering Great Salt Lake ecosystem, including migratory birds. The resultant exposure of an even greater expanse of playa will release toxic dust into our airshed, exacerbating the very serious problem of the Salt Lake valley's dirty air. Further, dust in our airshed also settles on mountain snow, reducing the ability to reflect the sun's heat and causing accelerated snowmelt. There is simply no upside to diverting water from the Great Salt Lake. <https://unews.utah.edu/dust-on-snow-gsl/>

**Marcelle Shoop (National Audubon Society):** Consistent with the Recommendations of the Great Salt Lake HCR10 Steering Group, please consider adding a recommendation and commitment by the Division to assess and understand the impacts to Great Salt Lake as part of the Division's planning and decision-making, consistent with the Great Salt Lake HCR10 Steering Group Recommendation 4.

Ideally, this could go further to include a goal to use such efforts to avoid, minimize and mitigate negative impacts to great Salt Lake and its associated wetlands. The recommendation could be written as follows: "The Division will [strive to] assess and understand the impacts to Great Salt Lake in the Division's planning and decision-making with a goal to recommend or take actions that avoid, minimize or mitigate negative impacts to Great Salt Lake and its associated wetlands."

Such an addition to the recommendations also would be consistent with the statement in the introductory Chapter at page 5 that states: "Preserving the Great Salt Lake is another example of the complex challenges that lay ahead.

**Marcelle Shoop (National Audubon Society):** Water management decisions directly impact the health and viability of the lake and its ecosystem and need to be made carefully to avoid harming its integrity."

**MaryAnne Russell:** Experts have been warning that the Great Salt Lake is on track to dry up. The Great Salt Lake is an iconic part of Utah - it tells the stories of our history, plays a vital role in the ecology of the Wasatch front, and boosts our economy, and even contributes to our greatest snow on Earth. The only way we can "keep the 'Great' in the Great Salt Lake" is by ensuring its continued legacy for generations to come. Developments, such as that on the Bear River, will only speed up the process of the Great Salt Lake's demise, which will lead to environmental, economic, and social disaster. That means we need to do all we can to preserve the Great Salt Lake. Developing the Bear River would be taking us in the wrong direction.

**Rachel Baarda:** I am very concerned about water being diverted from the Great Salt Lake. Besides the ecological considerations, I am very concerned about serious deleterious effects on air quality due to arsenic-containing dust from the lake bed becoming exposed and airborne. If this comes to bear I am afraid I will have to leave my beloved home state since this would not be a suitable environment to raise a family.

**Rachel Struhs:** In an era of increasing awareness of climate change, Utah should learn from their neighbors in California and the catastrophic results of Owens Lake. Studies and real-world examples, such as Owens Lake and the Aral Sea, show the deadly effects of reduced flow to saline lakes. The catastrophic results of reduced water supply to the Great Salt Lake can be completely avoided if Utah adopts and pushes for better water regulation and water conservation to provide for residents in its desert climate.

**Sarah Duensing:** If the plan fails to properly protect and care for the lake, it stands to dry up, which will release dust into the air, making the Wasatch Front unlivable. I deeply love this state, but I will be moving once I finish my law degree at the University of Utah, because it breaks my heart to see how little the government cares to do anything to protect this beautiful land in a sustainable way.

**Sean McKenna:** We MUST focus on increasing the level of the great salt lake. Further shrinking will have disastrous effects on our air quality. Additionally, the shrinking of the lake will result in less snow fall which will impact the economy due to fewer ski tourists. Not to mention less snowfall will result in worse draught conditions and shortfalls at other state reservoirs. Save the lake!

**Zeppelin Zeerip:** The lake is currently at its lowest level in history, as you very well know. This has a direct economic impact on our state, leads to decreased air quality for our citizens, fewer marshland areas for the hundreds of birds that rely on the GSL, and decreased snowfall, the most important factor for our nearly empty reservoirs.

**General Response:** The Division of Water resources has no authority to allocate or change water rights. These comments have been forwarded to the Division of Water Rights for consideration. No change was made to the Plan in response to these comments.

**Adelaide Ryder:** The Great Salt Lake NEEDS its own water rights. The Bear River dev project only serves a few businesses but will destroy so much more. This project will take too much water from the lake. The shrinking water levels will destroy our air quality, and the natural habitat of the lake. This plan does not reflect the needs of the ecosystem or the people of Utah. Please consider adding water rights for the GSL that will help keep the lake at a minimum safe level.

**David Rosenberg (Utah State University):** Another part is to dedicate water for the lake rather than work with whatever is not used in the Bear, Weber, and Provo-Jordan rivers.

**James Teton:** And I know as history has recorded our state screws the Indians over and over again on water rights. We need to secure all the available water in order to sustain a viable Great Salt Lake.

**Jessica Glines:** It is vital that the Great Salt Lake has water rights to protect its levels. Everyday we are seeing the effect of the lake drying out through dust storms that coat the surfaces inside our house. We need to act now to avoid turning this beautiful valley into a lifeless desert. I'd rather keep calling our home the Salt Lake valley than the dried out Bonneville Basin.

**Kathleen Luck:** I think that there needs to be specific flow requirements to protect the Great Salt Lake. I do not want to live in a place with toxic salt dust blowing everywhere like what happened in California to Owen Lake.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** As the Great Salt Lake hit record low elevation this year, the health of Utah's watersheds was brought to the attention of Utah's more than ever before along with the value of instream flows and general water quality. We recommend the Division incorporate methods by which the state can maintain instream flows and minimum lake levels in the Plan, for example the association of water rights with those uses.

**Nate Houseley:** I ... reiterate my support for a legal water right for Great Salt Lake.  
Tyler Christensen: Please support changing water management (sales tax) and water law (designate the great salt lake a beneficial use of water) before it's too late.

**Tyler Christensen:** Please support changing water management (sales tax) and water law (designate the great salt lake a beneficial use of water) before it's too late

## Water Budget

**General Response:** The Division's Water Budget results represent past water supply, water use, and recorded weather data. The model default is 1987 to the current data year. The Division uses results from the Water Budget model to characterize general water supply and understand water use in river basins throughout the state over a period of interest. The Division doesn't attribute changes in past use to impacts from climate change or any other factors.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** This chapter provides a useful overview of the Division's Water Budget model, data sources, and planning efforts and how these have been updated in recent years. Including recognition of climate change as a water supply challenge that is very important. However, including the discussion of climate change at the end of the chapter obscures its connections to and

framing of the preceding material. Shouldn't the interactions with and potential effects of climate change on evapotranspiration (not just from Great Salt Lake but from all open water bodies), cloud seeding, and reliable water supplies (Graphic 3-1) be considered, if at least to recognize the need to incorporate it into the Water Budget results and use it for more comprehensive contingency planning?

**Megan Nelson (The Nature Conservancy):** Under the Water Budget heading and in Graphic 3-3, the significant natural system use is recognized. Although it is characterized and charted as a consumptive use of water, there are great environmental benefits as well as distribution benefits for all users that should be highlighted. The natural system use is a key part of the overall water supply and distribution.

**Lisa Rutherford & Paul Van Dam:** As for the state's water budget, "The Water Budget takes into account the available water supply, including precipitation, groundwater, and reservoir storage (Graphic 3-4)" which includes USGS streamflow. However, Map 3-1 makes it clear that most USGS streamgages are "inactive" making the budget's reliance on estimated flows a very inaccurate method it seems. Although the Division plans to identify where additional monitoring is needed, it seems this should have been done some time ago. We have been dealing with this water issue for a while. *\*The Division uses available data, including data from active USGS streamgages. Where recorded data isn't available, the Division correlates flow with active streamgages. The Division is working to identify critical monitoring locations. The Division doesn't own nor operate streamgages, making successful collaboration between agencies a necessity for a successful program. We want to coordinate with other water agencies to dedicate funding for the operation and maintenance of a critical streamgage network.*

**Marcelle Shoop (National Audubon Society):** Pages 30 and 37 - It is important to include Great Salt Lake and its water needs in the overall state water budget. However, those water needs go beyond evaporation and including a recommendation in Chapter 9 to fully incorporate Great Salt Lake water needs into the water budget for planning purposes is recommended. While the plan indicates that approximately 2.6 million acre feet of evaporation for Great Salt Lake is based on the water supply/budget model, it is not apparent how this number is actually derived? Does this amount of evaporation include evaporation from the mineral salt production? The Great Salt Lake Comprehensive Management Plan (GSL CMP) (2013, Utah Forestry, Fire and State Lands) indicates that the evaporation estimates for Great Salt Lake may include the mineral extraction and evaporation processes as part of the evaporation estimate. The GSL CMP states that: "Water enters GSL from freshwater rivers (Bear River, Weber River, and Jordan River), groundwater, and as direct precipitation. At present, natural evaporation from the lake surface and from evaporation ponds is the only way water leaves GSL. Further, the average, total, annual evaporation roughly equals average annual inflow, although inflow exceeds evaporation during cooler, wetter weather cycles, and evaporation exceeds inflow during hotter, dryer cycles. All water that is diverted from the lake is used for mineral extraction by evaporation and is included in the annual evaporation estimates. A GSL evaporation estimate that does not include diverted water has yet to be determined." (GSL CMP at 2-17, emphasis added.)

If the 2.6 million acre feet evaporation estimate for Great Salt Lake does in fact include the evaporation from mineral extraction ponds, it would seem that the evaporation estimate for Great Salt Lake should be adjusted and eliminate the mineral extraction evaporation from the equation or clarify that it includes such evaporation and how much is associated with an estimate. Additionally, is the diversion of water for mineral extraction use not already included in the self-supplied industrial use numbers reported in Table 2-2 on page 18; and, if so, is some portion of the water supply withdrawals being counted twice – both in the Great Salt Lake evaporation estimate and the mineral /water extractions from Great Salt Lake? It also is not apparent how the evaporation estimate for Great Salt Lake is derived in light of recent water level trends at Great Salt Lake.

It is our understanding that lower water levels at the lake and increased salinity also result in lower evaporation rates. The GSL CMP also provides that: "Conversely, when the lake level drops, the surface area diminishes and the salinity increases, reducing the total annual evaporation. . . ." GSL CMP at 2-17. Finally, it is unclear whether the evaporation estimate for Great Salt Lake also includes the use and evapotranspiration of water flowing into wetland areas around the lake that are using water associated with water rights. If so, this too could suggest there may be duplication of water withdrawal values if those water right use numbers are already included in the water demand numbers for the model.

Would it be possible to provide an over-arching clarification in a footnote or reference about how the Great Salt Lake evaporation estimate is actually derived? *\*The Division is in the process of updating the Water Budget model code. Comments on the Plan have identified several refinements to be included in the model as it is updated. A better understanding of the types of evaporation will be pursued and incorporated in the model update. No change was made to the Plan in response to these comments.*

## Water Quality

**General Response:** Authority for water programs is split between four divisions; Water Rights and Water Resources in the Department of Natural Resources; and Water Quality and Drinking Water in the Department of Environmental Quality. The Division of Water Quality is the Utah agency which oversees efforts to monitor and improve water quality in impaired waters. The Division of Water Resources doesn't set water quality standards and we don't have enforcement authority for any water programs. The Division of Water Resources collaborates with other state agencies, including Water Quality and Forestry, Fire and State Lands, on water issues and concerns. No change was made to the Plan in response to these comments.

**Eric Sorensen (Metropolitan Water District of Salt Lake & Sandy):** Microbial contaminants, harmful algal blooms, and chemical spills are examples of public health threats in the watershed that can result if watersheds are not properly managed.

**Nick Schou (Western Resource Advocates):** Antidegradation review is a public process that implements a primary goal of state and federal water quality law to preserve higher quality water, regardless of where it is found. At their core, Utah's Antidegradation Rules are intended to prevent degradation of the existing water quality in most Utah waters. The Division should refine its strategy for enforcing its Antidegradation Rules. This strategy should recognize the almost unlimited value of clean water to an arid state facing climate change, water shortages and an increasing demand for water. Further, as with Category 1 waters, more should be done to protect Category 2 waters from nonpoint source pollution.

We very much appreciate that the draft Water Plan includes a chapter focused on watersheds and recognizes that instream flows (volumes of water that remain in streams) and water quality are critical to maintaining healthy watersheds, providing wildlife and fish habitat, protecting endangered species, and enhancing outdoor recreational activities, such as boating and angling. Indeed, recent studies reveal the tremendous economic value of water in rivers: <https://businessforwater.org/co-rivers-key-to-economy>.

We have the following suggestions to improve the Plan: Address the need to restore and protect municipal watersheds (p. 125-126). As the plan concedes, Utah's impaired waters include 34 drinking water sources. Maintaining properly functioning watersheds and improving watershed health where conditions warrant is key to protecting drinking water supplies.

Plainly, safeguarding drinking water is one of the most critical components of an effective Water Plan. The Division has an important role to play in ensuring local public drinking water suppliers and local communities safeguard both the quantity and quality of their drinking water sources, particularly through the development of robust Drinking Water Source Protection Plans.

Recognizing the connection between watershed health and water quality and quality, these plans should include specific steps and practices – worked out with land owners and managers, including the US Forest Service, BLM and SITLA – to maintain healthy watersheds and restore watersheds that are not properly functioning. These plans should, to the greatest extent possible, prevent the contamination of drinking water, including from sediment, should promote watershed health and substantially restrict or prohibit activities that adversely impact water quality.

Based on the above, we suggest that the Division focus on impaired waters and cooperate with the Division of Drinking Water to restore the condition and improve the water quality of watersheds that serve as sources of drinking water, including by working with public drinking water suppliers and local communities to strengthen and implement their Drinking Water Source Protection Plans and with the US Forest Service and BLM to encourage these federal agencies to include in their management plans concrete plans and measures to ensure that their management activities restore, safeguard, and do not impair the function of and water quality in municipal watersheds.

Further, the Division should participate and empower local participation in specific management decisions that have the potential to adversely impact water quality with the aim of protecting and enhancing the condition municipal watersheds.

Acknowledge and seek additional opportunities beyond TMDLs to improve water quality (p. 126) As the Division acknowledges, almost half of the waters in the state are impaired, while there are only 65 TMDLs in place that seek to restore the beneficial uses of these waters. Further, the agency notes that it is unable to create and implement a TMDL for each impaired water.

As the Division also confirms, it is exploring other tools to address impairment, including by establishing watershed councils. We suggest that the Division adopt two additional tools to restore water quality in impaired waters. First,

recognizing that significant water resources exist on lands managed by the Forest Service, BLM, the Park Service and other federal agencies, we urge the Division to take advantage of the various legal and policy mandates and directives that require federal agencies to comply with Utah Water Quality Standards, protect and improve watershed health, and safeguard wildlife habitat, biological resources and soils to secure restoration of impaired watersheds.

This would involve a more active role in the development and implementation of federal land use plans. Second, we suggest that the Division develop strategies that can be implemented outside of a TMDL – for example that are formulated as more rigorous state nonpoint source best management practices – that address specific impaired parameters such as E coli and maximum temperature.

The benefits of these more rigorous BMPs could be wide-ranging. For example, almost without exception, waters on the National Forest are categorized as have been designated as Category 1 waters. Utah Admin. Code R317-2-12.1. Category 1 waters are of exceptional recreational or ecological significance and shall be maintained at existing high quality. Utah Admin. Code R317-2-3.2. To achieve this end, no “new” point source discharges shall be allowed into Category 1 waters and nonpoint sources shall be controlled to the extent feasible through implementation of best management practices and regulatory programs. \* Therefore, to help achieve water quality improvements on impaired waters within the National Forest, the Division could derive “better” best management practices and regulations aimed at addressing specific impaired parameters – practices that would then apply on, for example, federal lands. \* “Discharges may be allowed where pollution will be temporary and limited after consideration of the factors in R317-2-3.5.b.4, and where best management practices will be employed to minimize pollution effects.” Defend Category 1 waters (p. 126). As already mentioned, almost without exception, Utah waters in the National Forest are Category 1 waters, the quality of which may not be degraded. Yet, many of these waters have been degraded, a considerable fraction to the point that they are impaired. A host of federal laws and regulations are intended to prevent this degradation and restore water quality in these headwater streams. The Division should develop and implement a strategy for securing water quality improvements on the National Forest by utilizing existing law and increasing its participation in management decisions that impact water quality and securing further opportunities to collaborate with the Forest Service.

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** The Plan notes that 42% of Utah’s waters are “impaired” in water quality but there are no watershed-specific solutions.

## Water Rights

**General Response:** Authority for water programs is split between four divisions; Water Rights and Water Resources in the Department of Natural Resources; and Water Quality and Drinking Water in the Department of Environmental Quality. The Division of Water Rights is the authoritative agency for water rights. The Division of Water Resources doesn't have enforcement authority for any water programs. These comments have been referred to the appropriate agency for response. Responses will be posted when received. No changes were made to the Plan in response to these comments.

**Erin Smeeding:** Modify existing law to allow water rights holders to maintain rights to water they conserve. Amend the current instream flow statutes to expand the entities allowed to hold rights for instream flow and the Great Salt Lake.

**James Teton:** Upon investigating the water rights laws and application process I was surprised that according to the Division of Water Resources there is only one auditor for the entire state. And that employee only conducts audits if there is a report of excessive consumption of water. There are very few done in a year. I would recommend for there to be two full time auditors to conduct extensive audits for compliance of water rights not only for the conversion of use but also there is hardly the agriculture properties that there once was and a lot of the land once designated as agriculture may only use the water for the lawn. Case and point is that in the Tax Commission there is only one auditor in the Property Tax Division that works on auditing the eligibility of FAA designation for tax purposes. And only a few are done each year. Yet there is a production requirement for 5 years. So if the two offices can coordinate their audits toward identifying non-compliant designations such as agriculture it may generate additional water resources that are misappropriated.

**Erin Smeeding:** Amend the current instream flow statutes to expand the entities allowed to hold rights for instream flow and the Great Salt Lake.

**Nate Houseley:** While reuse is an important part of water conservation efforts, I am opposed to water consumption that depletes water that would otherwise flow to Great Salt Lake. Great Salt Lake should have a legal water right that guarantees a healthy water level. The prepared water plan contains an illustration that suggests reused water could be used for golf courses. A legal water right for Great Salt Lake would protect it against such frivolous uses of water.

## Water Rights - Instream Flows & Tribal Rights

**General Response:** These comments refer to responsibilities of The State Engineer - Division of Water Rights. The Division of Water Resources has no authority over instream flows or negotiations with tribes. No change was made to the Plan in response to these comments.

**Nick Schou (Western Resource Advocates):** Include a sub-section on Instream Flows with current status of implementation and opportunities for the future. Instream Flow (ISF) water rights are an important tool that can be used to protect environmental and recreational values for the benefit of the public. The draft water plan, however, omits mention of ISF water rights in Utah.

We recommend adding a new sub-section explaining the role of ISFs. Utah statutes (including section 73-3-30) allow changing the use of previously perfected rights to instream water rights, though very few changes have taken place. Utah instream flow water rights currently may serve a variety of purposes, including fisheries, the natural environment, and recreation. However, current law imposes several limits on the rights. Only perfected or appurtenant rights may be changed to ISF uses; original appropriations are prohibited.

Additionally, the ownership of ISF rights currently is limited to two state agencies, the Division of Wildlife Resources and the Division of Parks and Recreation, with the limited exception allowing a "fishing group" to hold a temporary and more limited ISF. We suggest adding a recommendation on how the ISF program could be expanded to allow a greater public benefit. Some ISF amendments are gathering support through the Legislative Water Development Commission, including allowing additional state agency owners, and broadening the purposes served by ISF. It seems critically important to continue the purpose of ISF for public recreation, due in part to the economic value of this use.

We also encourage the exploration of allowing the new appropriation (as opposed to the transfer) of water rights for the environment, as is common in the neighboring states of Wyoming and Colorado. If those states serve as a guide, these rights could be secured through an agency proposal and review process that avoids harm to existing uses while securing flows critical for ecological function.

**Megan Nelson (The Nature Conservancy):** There is a critical and immediate need to further develop Tribal rights, especially to provide clean drinking water, which the COVID19 pandemic has highlighted as a vital need. Tribal Nations will drive almost half of the Upper Basin's projected demand increase between now and 2060. Suggest adding discussion of the ongoing 2026 negotiations since this plan will go through 2026.

## Water Sources

**General Response:** Thank you for commenting on the 2015 Water Resources Plan (Plan). These comments were reviewed by Division of Water Resources (Division) staff. While these comments are important to consider, the Division isn't able to act on them directly. The Plan is a document that outlines what the Division is committed to do over the coming five years. The Division appreciates the time you dedicated to reviewing and commenting on the Plan. We are grateful to Utah residents who are engaged and committed to reducing the amount of water used in Utah. We are promoting water conservation and intentional water practices, like integrating water use considerations into land planning, too.

**Ashleigh Albrechtsen:** It is time for the Division to stop pretending that we will have all of the water we want going forward, and be upfront with the people of Utah that there are stark choices staring us in the face unless we significantly change our approach to water use. That starts by drafting a plan that tells the citizens of Utah the uncomfortable truth: we live in a desert, and it's time we start acting like it.

**Brooke Larsen:** It is time for the Division to stop pretending that we will have all of the water we want going forward, and be upfront with the people of Utah that we live in a desert and we will continue to see extreme drought.

**Colleen Winters:** The answer is not to grow more and more and more and exploit more and more and more water sources, but to recognize that we must limit our growth and live within what we have. A better way is to adopt a new economic model that does not rely upon growth in order to have prosperity.

**Emma Ryder:** The Water Resource Plan must acknowledge that Utah is a dessert and water is scarce. No amount of wishful thinking, or convenient denial, will change that fact. Our geography is unchangeable and any plan must respect and recognize that fact.

**Katie Newburn:** We are the second driest state in the country, and we need to start acting like it.



**Mack Flannery:** It is time for the Division to stop pretending that we will have all of the water we want going forward, and be up front with the people of Utah that there are stark choices staring us in the face unless we significantly change our approach to water use. That starts by drafting a plan that tells the citizens of Utah the uncomfortable truth: we live in a desert, and it's time we start acting like it. As a citizen, I rely on you to responsibly manage our resources and create imaginative ways to ensure longevity and vitality in the Salt Lake Valley and Utah more generally. This plan is an utter failure on all accounts. We cannot survive in Utah without the Great Salt Lake, and I demand a plan that recognizes this fact.

**Maya Kobe-Rundio:** Utah is one of the driest states in the nation. It is time for the Division to stop pretending that we will have all of the water we want going forward, and be upfront with the people of Utah that we face stark choices unless we significantly change our approach to water use. That starts by drafting a plan that tells the citizens of Utah the truth: we live in a desert and it's time we start acting like it.

**Meagan Leigh:** We live in a desert not a rainforest. Our water supply is not infinite.

**Nad Brown:** Why are we transporting water clear across the state? Why not promote the Southeast end of the state, close to the water source? Who decides where the water should go and what are their personal inclinations? Let us be wise in using our limited supply of water.

**Paul Burnett (Trout Unlimited):** Thank you for the opportunity to provide comment on this important plan. Overall this water plan misses the fact that at the statewide and river basin scale, Utah is trusted with a finite water resource and that attempting to develop 100% of the water within the state or river basin is ecologically damaging and unsustainable. All of the water that we use for municipal, industrial, or agricultural use is derived from natural river systems that support a wide range of natural resources that provide a wide range of benefits to Utah. All natural river systems are subjected to a range of water supply variability depending on climatic conditions. From that perspective this water plan is an opportunity to look at the river basin scales (or larger- for example Great Salt Lake) and address the unique annual water supply variability, landscapes, natural resources, and water uses within the basins. Then establish means and methods for supporting the future changes to population in the state in a way that sustains the natural systems, provides people with water we need, and protects a healthy agricultural base.

**Richard Spotts:** I've also submitted extensive comments on other highly questionable proposed Utah water projects, such as the Pine Valley Water Project and Cove Reservoir. I know something obvious that many Utah politicians do not. That is that building projects does not create water. You could build the Lake Powell Pipeline but there is no guarantee that it would carry enough future water to justify its massive cost. You can divert Virgin River water for the Cove Reservoir but that only robs Lake Mead and the three Lower Basin Compact states that rely on it. You can pump excessive groundwater from shared aquifers in Utah and Nevada until it proves to be unsustainable and the considerable permanent damage is already done. Or you can recognize that the most reliable course is to make much better use of the existing water supplies through aggressive water conservation and reclamation programs. The bottom line is that the final WRP will only be effective if the current political climate changes enough to implement the positive mostly demand-side recommendations and ignore the conflicting, expensive, and risky "supply" side projects.

**Sarah Duensing:** Climate change is a real threat. It is time for the Division to stop pretending that we will have all of the water we want going forward, and be upfront with the people of Utah that there are stark choices staring us in the face unless we significantly change our approach to water use. That starts by drafting a plan that tells the citizens of Utah the uncomfortable truth: we live in a desert, and it's time we start acting like it.

**Sarah Longoria:** Continuing to deplete natural water sources, in order to keep up with our current rate of water waste, will cause a lot more harm to the people and ecosystems within Utah, in the long run, than ensuring that people not waste this finite resource that is our most basic necessity for life.

**Zeppelin Zeerip:** We live in a desert. First and foremost, that must be established. Our water supplies are limited, and the belief that we can accommodate unchecked growth is a fallacy.

**Douglas Bowen:** The plan does not provide much thought on how do we increase our water supply. There are at least four possible approaches that could be looked at:

- 1) Processing our brackish wells to clean them up to provide good useable water (Technology available from Dixie University)
- 2) Join with Arizona and Mexico to create a large desalination effort in the Gulf of California
- 3) Divert water from the Great Lakes to Bear Lake
- 4) Divert water from Missouri or Mississippi rivers to enter the Colorado river at about Green river. There should be projects studied to increase our water supply from areas outside of the inter mountain area.

**\*Thank you for your thoughts about potential new sources of water. No change was made to the Plan in response to these comments.**

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** Along with M&I water conservation efforts, these developments in agricultural optimization should be given time to work and yield water savings before the state invests in costly new water projects. Cost evaluations and environmental impact assessments need to be done to compare these alternatives of conserving, transferring, and repurposing water currently used in agriculture to plans to build new water projects as the state seeks to define the most feasible and sustainable strategies for meeting future demand. *\*A feasibility evaluation is standard procedure for all projects the Division of Water Resources recommends. The Division doesn't investigate a single option to the exclusion of other possible actions; we also don't exclude options that may prove to be feasible. No change was made to the Plan in response to this comment.*

**Nobel Keck:** Since you wasted your opportunity to tap into the Colorado why not divert the Green River into other already established streams or rivers for reservoirs. *\*The Division investigates alternatives for developing needed water. We make recommendations based on the findings from our research. However, the Division doesn't have the authority to allocate water rights necessary for new diversions. No change was made to the Plan in response to this comment.*

**Lindsey Hutchison (Utah Rivers Council):** Washington County has secondary water supplies that will serve as a bank for future municipal water needs. The Draft Water Resources Plan does not mention Washington County's secondary water supplies that can provide water as the population grows.

In 2011, the WCWCD reported that they supplied 26 billion gallons (roughly 79,800 acre-feet) of secondary water. A range of credible data sources including the WCWCD's own report, the 1993 State Water plan, the Census of Agriculture combined with the Division of Water Rights, and the USGS, demonstrate that current secondary water supplies are over 99,000 acre-feet. This aligns with documentation from the WCWCD that states the following: Without the 69,000 AF from the Lake Powell Pipeline project, only 105,000 AF of water could be developed. This, combined with the water supplies of other municipal and agricultural providers in Washington County, brings the total current water supply of Washington County up to almost 190,000 acre-feet. These updated supply figures are summarized in Figure 2. Figure 2: Actual Potential Washington County Water Supplies These water supply estimates are in the ballpark of the current and future flow estimates of the Virgin River created by the BOR and well within the storage capacity of the WCWCD. In addition to these supplies, the WCWCD claims to have access to 100,000 acre-feet of "banked" groundwater. They plan to use this water to cover emergency shortages. Therefore, the WCWCD has ample water supply to meet their growing population. *\*The draft 2021 Water Resources Plan isn't intended to evaluate a specific water system. This Plan represents actions that are within the Division's authority to accomplish. No change was made to the Plan in response to this comment.*

**Stephanie Smith:** Am I still going to be able to water my vege garden and fruit trees? Will the flow be super expensive so that I cannot have a garden anymore? Or will it be restricted altogether? *\*These questions are best addressed at the local level. Please contact your local water provide for restrictions in your area.*

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** The Agricultural Water Optimization Task Force, the Utah Watershed Councils Act, and the Water Banking Act are important legislative initiatives that create the potential to find greater flexibility in the current system of water use. The potential for these efforts to conserve existing developed water supplies and to transfer water from current uses to supply new uses has not been assessed or incorporated into future water supply projections. *\*The Division isn't reporting on local conditions or projecting for specific area sources, supplies, or uses. Models developed by the Division provide a general indication of trends. Projections for local areas are best obtained from the water providers in the area. The Division will work to reflect the influence of water banking projects as they evolve. No change was made to the Plan in response to these comments.*

**Paul Burnett (Trout Unlimited):** PG 29 The pie graph showing the broad uses of water between ag and municipal/ industrial should be more explicit in where the outdoor/secondary water use fits into the equation.

PG 34 It would be helpful to describe how this map handles out-of-basin diversions. Are they accounted for in the basin from where the water originated or where the water is being used.

PG 34-35 In looking at these data with only the most populous river basins in mind, the broad-brush description of Ag using 75-80% of the water is highly inaccurate. The major water supplies for the Wasatch Front tell a different story. Municipal uses are using over half of the water. Diversions (Acre-Feet) Basin Agriculture Municipal Weber 227,700 174,800 Jordan 56,600 369,500 Utah Lake 323,100 148,800 Total 607,400 693,100 47% 53% Depletions (Acre-Feet) Basin Agriculture Municipal Weber 178,500 67,100 Jordan 31,200 197,400 Utah Lake 232,800 58,500 Total 442,500 323,000 58% 42% But these data also suggest that there a lot of water flowing 739 cfs returning to the system daily (535,000 acre feet nondepletion). However base flows in the main river basins during the summer rarely exceed 100 cfs. These data show clearly that ag uses do not overwhelm municipal uses in the river basins that provide water to urban areas, and that our overall water accounting is likely inaccurate. Below are typical

summer flows on the river gauges directly upstream of Great Salt Lake: Jordan 160 cfs Weber 75 cfs Bear 60 cfs. \*The Division is limited in its data reporting by the datasets. Metered potable water use isn't subdivided into indoor and outdoor use. Secondary water use isn't uniformly reported by sector.

**General Response:** The Division of Water Resources doesn't have the authority to limit water use. No change was made to the Plan in response to these comments.

**Claire Taylor:** I also urge you to put caps of water usage, to incentivize yards with drought resistant plants instead of Kentucky blue grass.

**Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** But rather than carefully analyze constraints on supply in an era of climate change and then constrain demand to within that supply—after all, we cannot make more water....

**Colleen Winters:** Pg 24 talks about "reliable streamflow or safe groundwater yield" as a reliable water source. Why are we using groundwater in the first place? I would not call that a safe source. As I learned it in school, groundwater usage ultimately depletes the overall water table and makes a bad situation worse. Pg 26 talks about estimating a reliable supply if one is not provided. Is the interpretation of "limiting factors" an accurate one? \* It is a reasonable basis for estimating reliable supply. The Division's strong preference is to have each water system provide the system reliable supply. Lacking data from the water system, the Division's assumption is reasonable. No change was made to the Plan in response to this comment.

**Ann Zimmerman:** I would like the data behind these graphs also presented in tabular form in this appendix by water systems similar to Table 15 in the Utah Lake Study, 2014. I would like to see usage projected assuming various scenarios: no conservation and multiple rates of conservation, available supply, and diminished supply projections per climate change estimates and anticipated redirecting water supplies to Great Salt Lake. In Table 15 (Utah Lake Study), at least 18 water systems show a deficit by 2030 while assuming a 25% diversion by 2025 that may not be reached and population estimates from 2014 that are lower than actual population per the Gardner Policy Institute. THIS IS IMPORTANT INFORMATION FOR THE JURISDICTIONS RELIANT ON THESE DISTRICTS TO UNDERSTAND AND HAVE READY ACCESS TO. CITIES, COUNTIES AND TOWNSHIPS NEED DATA FOR PLANNING AND INSTITUTING LOCAL WATER USE GUIDELINES. \*Your identification of this data gap is correct. Private water source data isn't high quality data. At this time, the Division doesn't have the authority nor resources to research and validate private water use. Private water use is reported to the Division of Water Rights, but the Division of Water Resources isn't able to validate the reported data nor identify missing data. We are interested in exploring options to improve self-supplied data. No change was made to the Plan in response to this comment.

## Water Use – Industrial

**General Response:** Future industrial and commercial water use is fully dependent on how local governments choose to grow, with the support of the legislature and the executive branch of state government. The Division will follow up on the suggestion regarding. We will investigate avenues to review applications for proposed industrial uses for use in our water use projections. At this time, no change was made to the Plan in response to this comment.

**Marcelle Shoop (National Audubon Society):** The Foreword states that "This Water Resources Plan is a planning document that looks 50 years into the future . . ." The Foreword also explains that the plan "provides a comprehensive look at Utah's current water use and supply conditions and future demand scenarios." An important aspect of the water resources plan for a 50-year outlook is to consider a range of factors that can affect water supply and demand in those 50 years and further out as well. The plan focuses a great deal on future municipal and agricultural demand. While the discussion in several Chapters indicates that industrial use is lumped with municipal (M&I), it is not apparent from the discussion on water supply and demand whether all industrial water demands – particularly future water demands have been accounted for in the modelling and whether and how those may impact demand and supply estimates.

**Megan Nelson (The Nature Conservancy):** Is there way to acknowledge or account for likely large demands for water in the future such as renewable energy generation and associated mineral development?

**Marcelle Shoop (National Audubon Society):** The Regional Water Conservation Goals (RWCG) only made broad assumptions about industrial water use, needs, and conservation without drilling down further. (See RWCG at page 37.) The Preface states that "It should be noted that the municipal and industrial projections of water need contained in this plan are based on current and historical data reported to the state by various water users and models that attempt to predict future conditions as best as possible." Chapter 2 includes current data for major self-supplied industrial water users who report to Division of Water Rights as of 2018 (Table 2-2).

This information suggests that there are gaps when it comes to future industrial water demand. To the extent there are gaps in the data needed to better assess future industrial water demand and the impact on the overall water supply budget, it would be appropriate and consistent with the management principles of "reliable data" and "supply security" to acknowledge any such data gaps and include a specific action and goal to fill such gaps. That would be consistent and appropriate to add this to the recommendations in Chapter 10 on Reliable Data.

For example, increasing demands for renewable energy and battery storage technologies are creating demand for natural resources, including critical minerals, as well as manufacturing capacity for battery and chip manufacturing, etc. Producing such minerals and resources and these types of manufacturing practices can consume large amounts of water. It is not apparent that the water supply and demand modeling incorporates scenarios that take these potential increasing water demands into consideration looking forward 50 years. \*Projections for future demands was the topic of a few comments. The Division agrees with the observations: The Division doesn't have a comprehensive historical dataset for industrial water use. Consequently, the Division's projections for industrial water use were calculated as a ratio to M&I water use. The Division will actively work to close this gap and improve our projections in the future. At this time, no change was made to the Plan in response to these comments.

**Marcelle Shoop (National Audubon Society):** Already there are new water right applications for large water volumes that have been filed and the potential for others (For example, see Utah Geological Survey Critical Minerals of Utah 2020; see also, 2020 groundwater application for 19,245 acre feet of water in Pilot Valley, North of Wendover for a lithium production project.) Other examples of increasing industrial water demand include proposals to develop more data storage centers, which traditionally consume large amounts of water. \*The 2021 Water Resources Plan isn't intended to provide a comprehensive list of water projects in Utah. Please contact local water systems for information on future plans and project. No change was made to the Plan in response to this comment.

## Water Use - M&I Comparison

**General Response:** The Division believes an opportunity to conserve water exists because our gallons per capita per day calculations show Utah uses more water than necessary. The Division is confident in making this statement because we collect and evaluate more water data at a local level than any other state in the nation. That doesn't mean that Utah's water use data is comparable to water use data published for other states.

The Division knows the water uses that contribute to water use numbers published by the Division. We don't know what is included, or excluded, in water use numbers published for other cities, counties, areas or states. We know comparisons aren't equitable when a city or county average is compared to a state average.

Based on results from the Division's repeated efforts to collect data from other states, we are confident the data reported for Utah water use is more comprehensive than data for other cities, counties, areas and states. We are interested in finding comprehensive data for other areas in the nation. We would like to have data used for comparison by other agencies shared with us for review. Until a national standard for water use reporting is established, comparison between water use in Utah and other locations is misleading. The Division doesn't believe data is reported and published with intent to mislead.

The United States Geological Survey (USGS) accepts data each state provides to them. Beginning on page 5 of the USGS report, *Estimated Use of Water in the United States in 2015* (circular 1441), under the heading *Sources of Data and Methods of Analysis*, it's stated:

"Data presented in this report were compiled from various sources, depending on the category of use and the information available for each State. USGS personnel in each State determined the best sources of information available, then compiled or estimated the data and prepared documentation of the sources and methods used to determine the water-use totals. Data in this report may have been derived from reported, estimated, or calculated means using different sources and methods and, therefore, will have varying levels of accuracy."

One needs to ask direct specific questions to determine if secondary water is being used. Utah has asked those questions of other states. Contrary to the obvious assumption, the answer to the direct and specific question is: Yes, untreated, unmetered water is being used for municipal and industrial outdoor irrigation; no, it is not called "secondary water"; and no, it's not being reported.

**Colleen Winters:** Pg 16 talks about possible overestimation of Utah's water use compared to other states because of methodology. First, I doubt if this is simply a question of methodology. I have lived in Utah most of my life and both individuals, governments, and businesses have mostly seemed very profligate with their water use. Second: if they want to make this argument, then why does not Utah use a methodology that can reasonably be compared with that of other states? If it wants to use its other method, fine; but then ALSO use a method that can result in comparing apples to apples.

**David Rosenberg (Utah State University):** Support with data the unsubstantiated and misleading statement that Utah's water estimation process "may give the false impression that Utahns use more water than people in other states" (p. 17). To verify this claim as true, collect water use data from neighboring states and water providers and show the similarities and differences in the methods they and Utah use. These comparisons will tell Utahns if our water use and conservation efforts are on par with our neighbors or if more aggressive state conservation targets are needed. If someone has already gathered the data and made comparisons, I encourage the UDWR to share the results in the state water plan.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** We agree wholeheartedly that how Utah grows matters, and we recall the publication of Utah's Regional M&I Water Conservation Goals. The Regional Goals focused largely on residential water use. However, at the state level, growth is not just in residential neighborhoods, but commercial, industrial, and institutional (CII) water use is also significant and must be considered.

The method by which Utah calculates per capita water use remains "different" to other states and is still an "apple being compared to oranges". If the state wishes to dispel the false impression that Utahns use more water than people in other states, and we hope that this is the case, perhaps per capita water use should be calculated and reported in a way that allows meaningful comparisons.

Additionally, how does CII water use fit into per capita water use estimates? With CII constituting nearly 30% of total M&I use (Figure 2-4), and additional industrial self-supplied use in amounts averaging approximately 66% of total M&I use (Tables 2-1 and 2-2), it must be considered.

**Lindsey Hutchison (Utah Rivers Council):** The Division makes special effort in the Draft Water Resources Plan to excuse or deflect attention away from Utah's very high water use rates by focusing on niche details about population counts, tourists, second homes, and water use categories. However, the Division failed to show any specific examples of these details actually creating the false impression that Utah has extraordinarily high water use rates. The most "apples to apples" comparison of water use levels conducted nationally is the USGS's National Water Use project, which collects and segregates water use data into narrowly defined categories to ensure consistency. While not perfect, the program and its associated reports are the best currently available picture of how different states (and even counties within those states) use water, and it clearly shows that stark differences between Utah and its neighboring states. The reports are published every five years, and Utah regularly ranks at or near the top of the list for per person water use. Furthermore, it is not clear that differences in second homes or tourist populations can sufficiently explain the large gap in per person water use between Utah and its neighboring states, as the Division suggests it may. In a national survey of hotel bookings and tourist travel, Utah ranked just fifteenth, exceeded by Arizona, Nevada, and California, who all use water at lower per person rates. This means that similar western states see more tourists than Utah but still use water at lower per person rates. Rather than differences in how water is accounted for, it seems more likely that Utah's uniquely high water use rates are the result of Utah's uniquely wasteful water policies. For years now, Utah has employed a number of wasteful water policies that our neighboring states have not. One example of such a policy is allowing water districts to collect property taxes, which acts as a subsidy and has the effect of greatly reducing the price of water. This distortion of the free-market disincentives conservation and produces significant water waste. Water districts outside Utah seldom collect property taxes, and when they do it is for a limited period of time and is focused on repaying a specific capital expenditure. Another example is Utah's failure to meter secondary water connections across the state. These unmetered connections waste significant quantities of water because users are not aware of how much water they are using and cannot be charged appropriately for it. Other states have unmetered secondary water systems as well, but Utah's are the largest and most extensive. While the state is starting to turn the corner on this, it has for years opposed doing so in any meaningful way, leading to our current high-water use. Utah's unique opposition to saving water is perhaps best summarized by a 2020 letter the Southern Nevada Water Authority (SNWA) sent as part of the public comment process for the proposed Lake Powell Pipeline. In the letter, SNWA stated: "What the Utah Board of Water Resources characterized as extreme conservation efforts and not practicable, such as converting or installing more efficient landscapes and creating incentive programs for water conservation, are actually commonly applied in an efficient and effective manner in many other communities." Here, one of the nation's largest water suppliers specifically called Utah out for its opposition to common water conservation practices. This, coupled with the other examples provided above, suggests that Utah's unusually high per person water use rates are a result of Utah's unusually wasteful water practices, not small differences in water accounting measures. The Division should revise the Plan to reflect this and take accountability for Utah's high water use rates.

**Lisa Rutherford & Paul Van Dam:** The Plan challenges comparing our water use to use in other areas: "There isn't a national standard for calculating water use. Some cities and states only report certain types of water use and/or may apply a credit for water that is returned to the system." However, there are ways of dealing with this apples-to-oranges situation but Utah refuses to work to normalize the comparisons preferring to say we can't be compared. In spite of that assertion, the Washington County Water Conservancy District actually did compare our

county to other areas – or rather their contractor Boyle did – in the two Boyle reports done in the 1990s. So it was ok to compare then but not now? The district and state also used a Maddaus conservation report done for the district, and it also compared our area to others. In spite of those documents, the state and district have been using this argument to help dispel the fact that Utah uses more water than other areas. During that time, Utah could have worked to provide normalized numbers with clear data but has not done so. They just rely on this argument over and over while other water experts continue to assert Utah's overuse.

**Lynn de Freitas (Friends of Great Salt Lake):** The first criticism is the Division's dismissal of the commonly-held belief that Utah is one of the driest states in the nation and yet uses more water per capita than any other state without offering an alternative approach. Comparisons are important, and without a valid comparison regarding how Utah is doing compared to other states we are left somewhat in the dark. It's all fine and well to compare Utah's past numbers with its present and future numbers, but if Utah has merely gone from a D- to a D+, it's still a D. If the comparisons that currently exist are invalid, then the Division must make the effort to offer the public an alternative apples-to-apples one, so we can judge where we stand with regard to our water use compared to similarly-situated states.

**Nick Schou (Western Resource Advocates):** How Utah Reports Water Use (p. 17) - The Plan's explanation for why Utah's per capita water demand (GPCD) is higher than other states may be confusing to readers. Every 5 years, the United States Geological Survey (USGS) works in collaboration with local, state and Federal agencies to collect water use information and aggregate this data to publish a report on the Estimated Use of Water in the United States. The USGS uses consistent methodology for each state to compile this data. Per the 2015 report, at 169 GPCD Utah's per capita demands rank second only to Idaho as the highest in the country (this is compared to 123 GPCD in Colorado, 126 in Nevada, and 81 in New Mexico): <https://pubs.usgs.gov/circ/1441/circ1441.pdf>.

While we agree that the best metric available to measure progress is GPCD reductions over time, the argument that secondary water use and tourism makes it incorrect to compare GPCD across State's is not valid. First, if some states are not reporting secondary water use it is because they likely don't have secondary systems. Second, tourism in Utah should not substantially affect comparative GPCD figures as tourism is widespread across many western states and the majority of water used in Utah is for irrigation as opposed to indoor uses that tourists may be contributing to.

**Paul Burnett (Trout Unlimited):** PG 16 There is no national standard for per capita water use. This is understandable but it would be highly beneficial for the state to develop statewide standards. It should incorporate two elements: Indoor water use:  $GPCD = \text{Metered potable water use} / \text{population}$ . Reports of water behavior could be provided on bills allowing people to compare how they are using water compared with the state average. Indoor use being a generally nonconsumptive use is easier to put to an ecosystem use after it is treated. Outdoor water use: GPAM (Gallons per acre per month). This is the big issue related to current development patterns. New lawns, golf courses, and other outdoor uses are consumptive demands. And allowing new water use in areas that were previously non-irrigated areas is a new depletion on the aquatic system. New depletions should be offset by retirement of irrigation somewhere else.

PG 17 Water use accounting. The report states the following: "Utah accounts for all water use types (potable, secondary, and recycled water) by all industries (residential, commercial, institutional, and industrial) and doesn't apply credits for flows returned to the system. This comprehensive process may give the false impression that Utahns use more water than people in other states." I think this statement is too vague and technical to communicate the thought. The point that many people make is that water use in St. George should be comparable to other states and western cities.

Per capita indoor water use should be generally the same regardless of the region. The huge difference is how much people are using for consumptive purposes outdoors. People in St. George should be using the same as people in Phoenix. They should be using less than people on the Wasatch Front. St. George is a desert, there is less water available for consumption. The description of Self-Supplied Industries is confusing. It would be beneficial to provide examples of self-supplied industries.

**Steve Erickson:** While a good explanation of the ways water use is measured and reported differently by different political entities in the West, the analysis in this section does more to obscure the issue and induce apathy than to provide a means to use these analytical differences to get comparable data that sheds light. If DWRe can identify and break the use data reported by other states and cities into categories of indoor/outdoor, treated/secondary, household size/per capita, then it should be able to calculate that data in a way to arrive at comparable uses – from apples to oranges to apples to apples. Yes, this will take some time and research, but it would be worthwhile. Simply saying that you can't compare water use in St. George to water use in Tuscon because they report differently is not useful or responsible, and undermines efforts to convince Utah residents to conserve. This logic also applies to the use of return flow credits in water use reporting.

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** On page 11, the Plan leads with a heading, "Every New Utahn Needs Water," but leaves the reader with the impression that greater population necessarily requires a larger water supply, a myth thoroughly disproven in many southwest communities.

Page 16 reports statewide water use of 239 gallons per capita per day (gpcd), including 75 gpcd secondary, and notes that water use may be calculated differently in different cities and states. Page 17 says, Utah "doesn't apply credits for flows returned to the system." But the UDWRi grants water rights based in part on how much water "returns" to the system, and Chapter 3 includes a section on diversion vs. depletion that describes return flows to "the system," while Graphic 3-2 describes how 38% of diverted water is return flow. (We find it interesting that UDWRi can model agriculture conversion (with all the economic and family economic uncertainties involved) but claims they can't model comparisons in demand between Utah and other places.)

It is commendable that: "The Division posts water data on its Open Water Data website to provide transparent access to data used for planning and other purposes."

On page 17, the Plan discounts any comparisons of water use with other states or between Utah's cities to cities in other states. It claims it's more "relevant" to compare "current numbers against past performance." But this ignores whether past measures of use were excessive to begin with (e.g., Washington County was said to use 400 gpcd in 2000) and thereby overstates progress toward conservation goals. UDWRi claims some states (no examples given) compute population by multiplying all residential units times the average number of residents per household instead of Utah's method of using Census data, which doesn't include transient residents.

Page 19 goes to great lengths to discount the use of gallons per capita per day (gpcd) altogether as an appropriate metric. It says "So, the next time you hear that Utah uses more water than other cities or states—check the math." But then the Plan doesn't bother to do any comparisons itself, and it continues to use the gpcd metric. That's excellent progress but Utah's decision-makers seem politically committed to decisions made in a former world, and that world has changed.

## Water Use - M&I Data Evaluation

**General Response:** The Division agrees that using the most current available data is optimal. However, regional water conservation goals, and all projections are based on the 2015 dataset that has been independently reviewed and validated. The Division decided to use the same dataset (2015) for this Plan for two reasons: consistency with model results; and it was available when work on this Plan began. The most current data is posted to the Utah's Open Water Data site (<https://dwre-utahdnr.opendata.arcgis.com/>) as soon as it becomes available. Anyone can also download data directly from the Water Rights website ([https://waterrights.utah.gov/asp\\_apps/generalWaterUse/WaterUseList.asp](https://waterrights.utah.gov/asp_apps/generalWaterUse/WaterUseList.asp)). No change was made to the Plan in response to this comment.

**Lisa Rutherford & Paul Van Dam:** The document states "Every five years, the Division uses Water Right's data, estimates secondary uses, and reports M&I water suppliers' reliable supply." The Plan attempts to look at "current water use and supply conditions and future demand scenarios." But, the Plan clearly shows that the water use is not current use but rather 2015 water use. It is now 2021 – almost 2022 – and the document is still using 2015 data. Since the "process of collecting, reviewing, validating, and analyzing data takes about two years from the time data is submitted to Water Rights until it is publicly available the 2020 data is expected in late summer 2021 and will be published in an M&I water use report in 2022. The reliable supply data in this report is for 2015." If this is the case, why are you even publishing this draft report for public comment? It seems that waiting until the more up-to-date information is available would give the public a better idea of where we stand and save state money. We are sure a lot of staff time (i.e., money) went into providing this plan only to have another one due next year. It seems that all the effort put into this Plan could have been put into a more up-to-date plan.

**Nick Schou (Western Resource Advocates):** Include more recent water supply data (p. 28) - The Plan is reliant on water supply data from 2015. Since DWR collects data from water suppliers annually, we recommend using more recent water supply data, particularly since intensified drought has very likely caused these numbers to trend downward in recent years.

**Robert Anglin:** The water use data for the 2021 Water Resources Plan is based on 2015 data. The more current 2020 use data will be published next year so why not wait until then. We are in the midst of an historic drought and this most current 2020 information may reflect the new normal. It is a waste of taxpayer's dollars, staff time and the public's time to publish this plan now when you know the most current 2020 use data will be available soon.

**General Response:** The Division uses the most consistent data available. We review and evaluate the municipal and industrial data before accepting it. The Division chose 2015 as the baseline year for evaluation because that data has been reviewed by outside agencies as well as the Division. We have confidence in the data which is presented in the Plan and was used in our models. The most current data is published on the Division's Open Data Portal (<https://dwre-utahdnr.opendata.arcgis.com/pages/municipal-and-industrial>) as it becomes available. No changes were made to the Plan in response to these comments.

**Vince Olson:** Make no major decisions until you have quantified key points of information that is required, and HAVE 5 to 10 years of SOLID VERIFIABLE DATA, before making decisions.

**Colleen Winters:** The need for reliable data is first mentioned on page 4. Based on further reading through the report, I would question the reliability of some of the data that projections have been based upon. Several figures and estimates seem like they could be overly optimistic.

## Water Use - Rates and Billing

**General Response:** The Division isn't an enforcement agency. The Division isn't authorized to enact ordinances, set rates, or enforce programs at a water provider level. Utah Code 73-10-32.5 requires a tiered pricing structure based on water use and the Division encourages water systems to use meaningful tiered water rates which are designed to encourage water conservation by increasing with increasing water use. We support water systems as they update billing systems to report water use to inform customers and adopt practices to encourage water conservation. No change was made to the Plan in response to these comments.

**Lindsey Hutchison (Utah Rivers Council):** One of the many ways the state could conserve water is by phasing out property tax subsidies for water. Utah water conservancy districts collect a large percentage of their revenues from property tax collections. These property taxes lower the price of water for homes, businesses, and especially government institutions. Conscientious water users are not rewarded for using less water because they still pay the property tax that goes to subsidize water. Outside of Utah, only 29% of water districts surveyed collect property taxes for water, instead using water rate revenues to cover their expenses. In those states, if a property tax is collected for water, it is used for bond payments; once the bond debt is paid, the property tax is retired. Inside Utah, some 88% of water districts collect property taxes for water and these taxes are collected permanently, whether the districts are using the tax to pay a debt or not. The other 12% of Utah water districts did not file state financial audits and may no longer exist. The collection of property taxes by Utah water districts leads to greatly lowered water prices. This explains why Utah's municipal water rates are among the cheapest in the entire United States.

For example, in 2017, the Washington County Water Conservancy District (WCWCD) received more money from property tax collections than it did from water sales. Of the 2017 WCWCD revenues, 33% collected was from property taxes, 22% collected was from water rates, 9% was from other income, and 36% was from impact fees. WCWCD makes more money collecting property taxes than it does from selling water, less than 25 cents of every dollar in revenue to this agency comes from selling water. This is why water users in St. George, the largest city in Washington County, have extremely cheap water rates, with the water rate price being \$1.50 per thousand gallons for the first 15,000 gallons used. For decades, Utah water districts have been collecting property taxes from homes and businesses and in turn reducing the price of water consumers pay in their monthly water bills. Utah's very high municipal water use is driving over \$5 billion in new proposed taxpayer spending. This cycle creates unnecessary government spending and generations of taxpayer debt. If Utah phased out property taxes for water, it would eliminate or defer the need for this excessive spending.

As basic economics dictate, cheap water prices lead to the overuse and wasting of water by residents, businesses, and especially large institutional users who pay no property taxes at all. Ending this water waste cycle would only require phasing out property taxes which would reduce unnecessary government spending, provide tax relief for Utah families, and save billions of gallons of water. Allowing the free-market to set water prices incentivizes conscientious water use and discourages water waste, thereby extending our water supplies further into the future. Phasing out property tax subsidies would create an equitable system where large water users would have to pay the entire cost of their water use and low-income water users would not be forced to subsidize the water use of their wealthier neighbors and those that do not pay property taxes, such as municipal golf courses, schools, universities, and government buildings. Phasing out the property tax is one of the many ways that Utah can conserve water, and the Division must promote this approach to water conservation.

**Natejije Hamilton:** Just start charging more; encouraging less use.

**Rachel Wittmann:** I'm not sure if this comment belongs here, but this year I tried to conserve as much water as possible. I let my lawn die. I captured water from my laundry to use on trees and other shrubbery. I cut back on showers. I washed all of my dishes carefully with a basin and not to let the water run while doing so. I was excited



to see my water usage plummet on my water bill but I was flummoxed to see my savings: \$3.00. Water should have a higher monetary value. People need to be incentivized to save water and punished for overuse. After a certain gallon per HH limit, there should be steep fines. It's beyond frustrating to make the efforts to save water while your neighbor does nothing. We cannot depend on the water conscientious people to save Utah from this drought.

**Steve Erickson:** DWRe touts advocacy with local water providers to establish progressive block rates for municipal users, but the rate structures are undefined and not connected to other sources of income to those water purveyors like hook-up and impact fees and property taxes. Water rates should be higher to reflect true water delivery costs and to incentivize conservation. But water providers are cognizant of the impact of elasticity of demand on their revenues, and will protect these other sources of income or rely upon them to keep rates lower. DWRe needs to address this problem honestly, and endorse a phased-in cap on property tax revenue (e.g. 20% of total revenue) to push municipalities to enact steeper water rates.

## Water Use - Reuse

**Billy and Abby Jergins:** I want to see the Washington County Conservancy District to make plans to collect muddy flood water from the Virgin River. We can't ignore this source of water any longer. Then I want to see a plan to reclaim waste water by cleaning it and putting that back into our reservoirs. All of Utah needs to make this reclamation of water an important part of their plan for a source of water. But waste water needs to be processed to remove and filter out dangerous chemicals. Get it done. **\*Storm water (or flood water) is regulated under the Clean Water Act, administered by the Division of Water Quality in Utah. Local water providers manage their water sources and delivery systems. The Division of Water Resources doesn't have authority for this program. No change was made to the Plan in response to this comment.**

**Lisa Rutherford & Paul Van Dam:** The Plan mentions that "In 1995, the Utah Legislature enacted the Water Reuse Act (Utah Code 73-3c302) to govern the reuse of treated wastewater." What the Plan fails to mention is that in 2006—the same year the LPP Development Act was passed—the law was revised making it more difficult for reuse projects to be approved, seemingly to make the LPP water look more attractive than pursuing reuse. In a May 2018 presentation to Governor Herbert's Executive Water Finance Board regarding reuse and why there is not more in Utah, this was provided from the 2005 (year before the reuse act was passed) Water Reuse in Utah Report stressing the importance of reuse:

Executive Summary Utah's water is one of its most valuable resources. ... However, once this water has met its initial purposes, it is discarded down the drain, where most users hope to never see or hear of it again. Not a very glamorous fate for such a precious commodity. Yet in recent years, discarded wastewater has taken on renewed value. No longer is it merely seen as a menace to be disposed of, but as a valuable resource that will help satisfy future water demands in Utah's semi-arid climate.

The presentation pointed out that "The 1995 Reuse Act was repealed in 2006 and replaced with a new Reuse Act. Only 7 reuse projects have been filed in the 12 years since 2006." While many other states of increased their use of reused water, Utah has languished. **\*These comments are best addressed by the local water provider. No change was made to the Plan in response to these comments.**

**General Response:** The Division agrees that caution must be used when evaluating reuse proposals. Initial evaluation of water reuse projects seems to minimize unintended consequences. It is the Division's intention to introduce consideration of increased depletions potentially associated with water reuse because basins in Utah are terminal basins. When additional water is depleted, from any use, it doesn't decrease water flowing out of the state; it decreases water flowing to a terminal lake or wetland. No change was made to the Plan in response to these comments.

**Fiona Summers:** On page 96, you mention the potential impact water reuse has on the Great Salt Lake. However, this information does NOT make clear the severity diverting water has already had on the Great Salt Lake NOR the future implications of that, aka losing the Great Salt Lake. This information should be given to the public and the severity of losing this precious resource to diversion.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** We commend the inclusion of water reuse in the Plan and agree with the Division that "in order to be feasible, the cost of reuse water must be less than the cost of other potential water sources". Having said that, water reuse is not the only approach noted in the Plan that may increase water depletions and only mentioning increased water depletions in this context seems to intentionally cast water reuse in a negative light.

**Megan Nelson (The Nature Conservancy):** The discussion of how water reuse could negatively impact the natural system is a great example of incorporating more of the third principle of water management—preserve watershed and environment. More of these should be added to the Plan.

**Nick Schou (Western Resource Advocates):** Include a meaningful reuse goal - Chapter 6 Recommendations include one reuse-specific rec: "Recommend water reuse projects for suitable areas." Given the potential and importance of reuse as a new water supply, we urge the inclusion of a broader and more meaningful reuse goal for the state. For example, a goal to "Support and develop conditions, including enhancing water quality regulations, to enable additional reuse and a wide range of uses of recycled water, including direct potable use."

Reuse as important water supply option (p. 94) - We're glad to see recognition that "Water reuse is an important option to supplement future water supplies." As Utah's population grows and water supplies are stretched, reuse is key to meeting more demands with existing supplies. Expanding ways in which water can be reused (p. 94) - We appreciate the list of some of the ways water can be reused and urge the state to consider and enable a broader range of uses, both non-potable as well as potable, including direct potable reuse which many other states are currently pursuing.

Non-potable reuse - In 2017 Western Resource Advocates completed a white paper titled A Survey of Key States' Regulatory Approaches to Water Reuse which provides an overview of a broad range of potential uses of recycled water. We urge Utah to pursue additional means of reusing non-potable water to increase opportunities. The white paper can be downloaded at: [https://3hzk7prqhr33icsww1y4geu6-wpengine.netdna-ssl.com/wp-content/uploads/dlm\\_uploads/2018/12/WaterReuseRegulationsWhitePaper\\_Final.pdf](https://3hzk7prqhr33icsww1y4geu6-wpengine.netdna-ssl.com/wp-content/uploads/dlm_uploads/2018/12/WaterReuseRegulationsWhitePaper_Final.pdf).

Potable reuse - Indirect potable reuse happens when water is released to an environmental barrier (e.g., a stream, lake, groundwater) prior to be rediverted and reused. Direct potable reuse (DPR) occurs when water is purposefully recaptured, treated so that it's safe for human consumption and reused, skipping the environmental barrier. DPR is increasingly of interest to water providers around the U.S. and beyond for a variety of reasons. States including New Mexico, Colorado, California, and Texas either have DPR regulations in place or are well along in their development. We urge Utah to borrow ideas from other states and to consider pursuing a strong regulatory framework for DPR that ensures public health is protected while being flexible and reasonable to enable communities to evaluate DPR alongside other potential water supply options.

Move away from "disposing" of treating wastewater (p. 95)- We urge the state to encourage transitioning to more beneficial use of water rather than the current practice of some treaters to "dispose" of wastewater through land application (see Graphic 6-5). Wastewater is an important water resource and a shift from considering it as something to dispose of to a resource to be recovered will help Utah and the Colorado River Basin stretch limited supplies.

Move discussion of environmental impacts of new depletions from reuse section (p. 96-97) - It is inaccurate to mention potential environmental impacts of increased depletions only in the context of reuse. All new water supplies, including, for example, the proposed Bear River Development project, will have impacts to streams, rivers and/or lakes. Any such impacts are important to understand, but mentioning them only in relation to reuse is incorrect.

Graphic 6-6 How Does Water Reuse Impact Great Salt Lake (pg. 96)- Remove text from "Did you know:" section that states "However, these practices will reduce the volume of water which would otherwise have been discharged and returned to natural systems like Great Salt Lake." Another option is to go through the plan and add similar statements throughout for any new water supplies that will result in additional depletions to streams, rivers and lakes. Our recommendation is to develop new text, not linked to any particular water supply source, that discusses potential impacts to natural systems and the need to evaluate and mitigate those impacts to the extent possible.

Remove increased depletions from reuse statement (p. 97) - Similarly, we recommend removing text that states "It should be noted that water reused, rather than returned to the natural system, increases depletions (Chapter 3), and may have a negative impact on the environment." Again, such increased depletions will occur from other new supplies as well and should not only be raised in the context of reuse. Reuse as an effective option for meeting unmet demand (p. 97).

We also suggest adding language to the effect that, while reuse results in decreased return flows, if a community has unmet demand and is using water efficiently, water to meet those new demands will need to come from somewhere so it can make sense financially - and potentially be less impactful - to reuse existing wastewater return flows rather than divert new water supplies from streams and rivers. Reuse as a cost competitive water supply option (p. 97).

The plan acknowledges that "In order to be feasible, the cost of reuse water must be less than the cost of other

potential water sources." As technologies continue to advance and new water supplies become more scarce and costly, water providers are frequently opting to pursue water reuse as preferred new water supply option. We encourage you to include this information, as well as a reference to federal and other funding sources, such as Bureau of Reclamation Title XVI funding, which water treaters can pursue to help plan for, design, and construct water recycling project. Federal infrastructure funding may be of great assistance.

**Paul Burnett (Trout Unlimited):** PG 60 Promoting water reuse. I think this makes logical sense when trying to find ways to squeeze the most use out of a drop of water, but this comes with a dramatic consequence. The water that we reuse would be the nonconsumptive portion of water diversions, the most easily tapped nonconsumptive water source would be from wastewater treatment facilities. Many of these facilities discharge into natural streams or into Great Salt Lake. We would need to have a solid understanding of the impacts of reuse.

Two specific cases: 1) solid data does not exist for Great Salt Lake, but many water resources professionals understand that wastewater effluent is a significant stable source to Great Salt Lake. Diverting this last remaining stable water source would prove catastrophic for Great Salt Lake.

2) East Canyon Creek near Park City is almost entirely diverted during the summer months. Wastewater from the Snyderville Basin Water Reclamation District is the primary water source for the Creek at times. Diverting the effluent for other uses would dewater this creek and cause significant ecological harm to the East Canyon Creek watershed.

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** It's prudent of the UDWR to recognize the value of water reuse, and the Plan notes several reuse programs in Washington County, including St. George golf courses.

## Water Use - Secondary

**Allen James:** Figure 2-4 is unclear to me. Where is secondary water accounted for? Is this counted as residential? Is that a meaningfully representative way of counting this type of use? Where does agricultural use play into this pie chart and into secondary water use? Where is the data backing up the fact that most secondary water is estimated in use and that is done so in a reliable manner? Having a 20% reduction irrigation efficiency to improve secondary water usage when you claim that secondary water usage counts for  $(75/239 \times 100 =)$  31% of statewide usage is concerning. Likewise the bins on figure 2-4 are not well defined in the document as far as I can see. What is classified as "Residential", "Commercial", "Institutional", and "Industrial"? I recommend having clear definitions of these terms somewhere intuitive. *\*Definitions for terms used in the 2021 Water Resources Plan are included in the glossary. These comments identified a need for more information about water classification. In response, the Division is writing a white paper to compliment this Plan. The white paper will describe water categories, uses, and accounting practices is being written in response to this and similar comments. In the white paper, terms will be defined in the narrative as well as in a glossary. The white paper will be posted on the Division's website when completed. No change was made to the Plan in response to these comments.*

**General Response:** The Division followed recommendations from the independent engineer review to better align the Division's estimate of secondary water use with the engineering consultant's findings. The full independent review is found on the Division's website at: [https://water.utah.gov/wp-content/uploads/2019/07/FINAL\\_Third-party-Review\\_StateofUtahWaterUseDataCollectionReport.pdf](https://water.utah.gov/wp-content/uploads/2019/07/FINAL_Third-party-Review_StateofUtahWaterUseDataCollectionReport.pdf) No change was made to the Plan in response to these comments.

**Fiona Summers:** On page 16, the opening paragraph ends with "However, it also found the Division was underestimating secondary use by nearly 30% and that its methodology should be updated" and the rest of the few paragraphs often refer to "secondary use" water. I think explaining what the term "secondary use" means would be helpful for the reader. Especially as this is a document that was made for public consumption and not everyone is familiar with the terminology of this field.

**Colleen Winters:** Likewise, on pg 27, secondary water is "assumed" to be at least equal to the secondary use." Assumptions are frequently wrong.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** Secondary Water Meters - We cannot manage what we do not measure and the implementation of secondary meters on a large scale is an absolute necessity. In fact, CWEL's pilot research with the Weber Basin Water Conservancy District and their subsequent adoption of the approach it developed has proven that metering of and reporting on secondary water use can save 20-30% of water applied.

**Dolly Peach:** Can the document explain more to the public about secondary water meters? What is the relative cost of secondary water projects? *\*Secondary water and metering will be explained in greater detail in a white*

paper being written in response to these comments. Costs for secondary metering are dependent on the water system. The Division doesn't have a general answer to this question. The best source of information for your area is your water provider.

**General Response:** Progress is and will continue to be made in metering secondary water. When implementing a new program, a starting point must be chosen. Starting with secondary water systems in Class I and Class II counties is a reasonable starting place because most water use by secondary systems occurs in those counties. There is potential for significant water savings when secondary water users are aware of how much water is being used. The Division doesn't anticipate secondary metering will not be limited to these counties indefinitely. As the program evolves, smaller counties will be included the program. Smaller counties have the ability to install secondary meters now, even though there is no requirement to do so. Water distribution decisions, including secondary water metering, occur at the local level. The Division doesn't have authority to enforce ordinances nor laws.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** Why, as stated on pg. 16, the Division reduced irrigation efficiency from 50% to 40% to evaluate water needs and improve secondary water use estimates, and how this assumption relates to estimated projections of future water use. Assuming this level of inefficiency in urban landscape irrigation would appear to offset anticipated water savings gained through reducing urban lot sizes and is at cross purposes with the emphasis on optimization in the agricultural sector.

**Lisa Rutherford & Paul Van Dam:** The Plan states that "The majority of secondary water use is estimated by the Division. Water Rights collects metered secondary water data where available." "Implementing universal secondary metering may be cost-prohibitive for some water providers and systems that need to be retrofitted."

The Plan notes that Utah Code 73-10-34 (SB52) was passed during the 2019 Utah Legislative session and required secondary meters on "new" connections in Utah's urban counties. However the Plan failed to mention that in the 2020 Legislative session the bill was amended to exempt all counties classes three through six from this metering requirement so that rural counties and users with "difficult" water would not be required. It was mentioned during a legislative committee meeting hearing the water use could be reduced by 40% if all secondary water were metered.

As per the June 2018 County Classification document, the most recent we found, 23 out of Utah's 29 counties are categorized as 3rd, 4th, 5th, or 6th class counties. And in addition to those 23 counties being exempt from secondary water metering, the exemption also applies to locations with water that meter manufacturers will not warranty meters due to water quality, such as LaVerkin in Washington County and potentially many more throughout the state.

According to the UDRWe's 2019 M&I Water Use from the water data site, total secondary use, most of it estimated, was 267,976 acre-feet of water. By our calculation from the chart, 214,862 af of that is from class 1 and 2 counties while the remaining 53,114 af is from class 3, 4, 5 and 6 counties. We will admit that by requiring metering in the largest counties the state may capture the bulk of the secondary water. But is that 53,114 af from small counties even a correct number since secondary is generally estimated? In fact, is the 214,862 af a correct numbers since it's estimated?

We are still missing the mark when it comes to accurately measuring our water by letting the smaller counties of the hook and the law still only requires "new" secondary to be metered in some cases as we read it. Since cost to water users and meter warranties, or lack thereof, are problems then perhaps the state should step in and help. Certainly it would cost less than the \$2B Lake Powell Pipeline the state seeks.

**Nick Schou (Western Resource Advocates):** Requirements for metering all secondary water meters (pg. 62) - As the Plan notes, secondary water meters result in significant water savings. Utah can accelerate these savings by extending the existing requirement for secondary meters on new development to all unmetered secondary water systems and expanding funding available to support local implementation by 2030 and expanded funding available from the State for local secondary metering programs.

## Watershed Councils

**General Response:** The Division will look into these suggestions, with the recognition that watershed councils don't have authority to set policy for areas within the watershed. The Division is facilitating the initial organization of the Utah Watersheds Council at the state level and a local Watershed Council in each region. The Division recommends diverse representation, including environmental representation, on each council. However, in accordance with the Act (Code 73-10g-Part 3), the Division doesn't select members of the councils. The relationship between groundwater and surface water could be explored by regional watershed councils. No change was made to the draft Plan in response to these comments.

**Kelly Kopp (Utah State University's Center for Water Efficient Landscaping):** We support the recommendations of Chapter 9 and hope that the Division, with support from the state legislature and other collaborators, can find the resources and take the actions needed to effectively implement them.

**Steve Erickson:** DWRe should integrate watershed councils with groundwater management local councils and plans. An acknowledgement of and education about the connection between groundwater and surface water in watersheds would be helpful, as would an examination of the usefulness – and the limitations – of conjunctive management would be worthwhile. Thank you again for the opportunity to comment.

**W. Bryan Dixon (Bridgerland Audubon Society, Conserve Southwest Utah):** The Plan advocates for creation of “Watershed Councils,” citing the 2020 Utah Watershed Councils Act (H.B. 166) and noting “[t]he intent of the Act is to “develop diverse and balanced stakeholder forums for discussion of water policy and resource issues at watershed and state levels.” This could be a good thing, but the Act only “encourages each local watershed council to include representatives from agriculture, mutual irrigation companies, and local sponsors of reclamation projects.” The Plan echoes recent legislation to “Establish the Utah Watersheds Council and several local watershed councils.” But it does not specify who will sit on these local councils and how much deference they will be given. Will they include NGOs and conservation interests?

There is certainly no requirement that environmental interests are included in the discussion, as was the case with Gov. Gary Herbert’s Water Strategy Advisory Team in 2017. UDWR’s website does describe the make-up of the local Watershed Councils to include representatives from “water dependent habitat and environments,” but there is no guarantee that those representatives will be from anything other than consumptive wildlife users.

Page 129 promises “the state is working toward establishing a statewide watershed council, as well as local watershed councils. These councils will provide a forum for state and local agencies, industry, conservation groups, recreation interests, tribal interests, water quality experts, and other interested stakeholders to come together to discuss important issues and work together to devise sustainable solutions. In accordance with the Watershed Council Act (State Code 73-10g-Part 3), passed during the 2020 Legislative session, the Division is organizing the Utah Watersheds Council, a statewide council and 11 local watershed councils in each of the Division’s river basin planning areas (see Map 9-1), with an additional local watershed council for the Great Salt Lake watershed.”

The legislation promises conservation interests will be on the State Watershed Council, but it’s even more important that the local councils include NGOs and conservation groups.