Drinking Water Board Packet

September 1, 2020

Agenda

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

L. Scott Baird
Executive Director

DIVISION OF DRINKING WATER
Marie E. Owens, P.E.
Director

DRINKING WATER ELECTRONIC BOARD MEETING

Via GoToMeeting

To Register: https://global.gotomeeting.com/join/727585421

September 1, 2020 1:30 PM

Marie Owens' Cell Phone #: (801) 505-1973

1. Call to Order

2. Roll Call – Marie Owens

3. Approval of the Minutes:
   A. June 9, 2020
   B. July 20, 2020

4. Disclosure for Intent to Publicly Comment - Roger Fridal

5. Disclosure for Conflict of Interest - Roger Fridal

6. Financial Assistance Committee Report
   A. Status Report – Michael Grange
   B. Project Priority List – Michael Grange
   C. SRF Debt Relief Policy - Michael Grange
   D. SRF Applications
      1) STATE
         a. Axtell Community Service Distribution - Skye Sieber
         b. Bear River Water Conservancy District - Heather Pattee
         c. Caineville Special Service District - Heather Pattee
      2) FEDERAL
         a. Provo City - Skye Sieber
         b. Wilson Arch Water & Sewer Company - Skye Sieber

7. Rural Water Association Report – Dale Pierson

8. Legislative Audit Report – David Gibson and Matt Harvey

9. DDW Fee Update – Julie Cobleigh

10. Directors Report – Marie Owens
    A. Legislative Audit Response
    B. Enforcement Report
    C. New Employees: Mark Berger
    D. Other

11. Public Comment Period - Roger Fridal

12. Open Board Discussion - Roger Fridal

13. Other

14. Next Board Meeting

    Date: November 3, 2020
    Time: 1:00 PM
    Place: To Be Determined

15. Adjourn

Agenda Item 3(A)

State of Utah
GARY R. HERBERT
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Department of
Environmental Quality

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DIVISION OF DRINKING WATER
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DRINKING WATER ELECTRONIC BOARD MEETING
June 9, 2020 1:00 PM
Via GoToWebinar

DRAFT MINUTES

1. Call to Order

Roger Fridal, Chair, called the Board meeting to order at 1:03 PM.

2. Roll Call – Allyson Spevak

Board Members present: Roger Fridal, Kristi Bell, Scott Morrison, Eric Franson, Blake Tullis, Jeff Coombs, David Pitcher, Scott Baird. Barbara Gardner joined the meeting at 1:12 PM.

Division Staff present: Marie Owens, Director, Michael Grange, Heather Pattee, Skye Sieber, Allyson Spevak, Nathan Lunstad, Mimi Ujiie, Elisa Brawley, Brian Pattee, Julie Cobleigh, Linda Ross, and Russell Seeley.

3. Approval of the Minutes

A. February 27, 2020

- David Pitcher moved to approve the February 27, 2020 minutes. Kristi Bell seconded. The motion was carried unanimously by the Board.

B. April 27, 2020

- Scott Morrison moved to approve the April 27, 2020 minutes. Kristi Bell seconded. The motion was carried unanimously by the Board.

4. Disclosure for Intent to Publicly Comment – Roger Fridal

No disclosure for the intent to publicly comment was made.

5. Disclosure for Conflict of Interest – Roger Fridal

There were no conflicts of interest.

6. Operator Certification Commission – Michael Grange

Michael informed the Board that the Operator Certification Commission is a seven-member commission appointed by the Director. The commission helps to oversee and run the operator certification program and it meets 2-3 times annually. One of the members is a representative of the Division of Drinking Water (DDW, the Division) through the Drinking Water Board. The Board member who held that position is no longer on the Board. Michael is looking for a member of the current Board to volunteer for the commission, preferably someone who is familiar with the operator certification program.

This commission is required by the Operator Certification Rule (R309-300). Also, in the baseline standards, we are required to meet in order to be a viable operator certification program and to not lose 20% of our annual capitalization grant for the Drinking Water State Revolving Fund (DWSRF) program.

Blake Tullis volunteered to fill the position. Michael will add Blake to the commission email group and he will be notified of an upcoming meeting.

7. Financial Assistance Committee Report

A. Status Report – Michael Grange

Michael Grange, Technical Assistance Section Manager with the Division of Drinking Water reported that as of May 20, 2020 there is a balance of approximately $3,400,000 in the State SRF fund. Over the course of the next year, the Division is expecting $4.5 million to be added to the fund through annual tax revenue, and principal and interest payments. By May 21, 2021 there will be a total of approximately $7.8 million available for State project allocation.

The SRF staff is currently working to close a few loans authorized by the Board. There are a number of planning loans and grants that systems are using to develop master plans or engineering studies. Closed loans that are partially dispersed for projects still in construction include Daggett County – Dutch John, Ephraim City, and the Mountain Regional Community Water loan.

Michael then reported that currently there is a balance of $15,800,000 in the Federal SRF fund. Over the course of the coming year, the Division is expecting approximately $21.3 million to come into the fund from the EPA capitalization grant, state match, and principal and interest payments. By May 2021 there will be a total of approximately $37,200,000 million available for federal program projects.

SRF staff is working with a number of systems to close federal loans for West Corinne, Central Utah Water Conservancy District (CUWCD), Swiss Alpine, and Canyon Meadows. Granger Hunter and Kearns Improvement Districts are both moving forward on construction

with their programmatic financing. Before the end of June there is a construction inspection scheduled for the Kearns project.

Michael clarified that the term, loan closing, means to close the loan and disburse the funds.

B. Project Priority List – Michael Grange

Michael Grange reported that three new projects are recommended to be added to the Project Priority List: Sigurd Town with 27.5 points with a spring redevelopment, tank and chlorinator project; Old Meadows with 26.4 points with a new water line and meter project; and Willow Creek Water Company with 16.7 points with a backup generator, tank mixer and meter project. The Financial Assistance Committee recommends the Board approve the updated Project Priority List as presented, with the addition of these projects.

- Jeff Coombs moved to approve the updated Project Priority List. Blake Tullis seconded. The motion was carried unanimously by the Board.

C. SRF Loan Relief Policy – Michael Grange

Debt relief was the subject of the April 27, 2020 emergency Drinking Water Board Meeting held via GoToWebinar and during that meeting the Board authorized staff to move forward with creating documents and preparing existing documents to meet DWSRF requirements and nomenclature.

SRF staff developed (3) documents (found in the packet);

1) Debt Relief Policy

   This policy would be implemented to bring relief to water systems impacted by the COVID-19 pandemic. Staff developed the policy for a general declared state of emergency since the pandemic isn't the first emergency to be declared in Utah and probably won't be the last. Historically, the Board has not had a policy of this nature to allow debt relief during a declared state of emergency. This generic policy allows the Board to entertain requests from loan recipients to relieve their debt if they can show financial hardship due to the declared state of emergency.

   Michael Grange read the policy to the group.

   David Pitcher asked if this policy applies to any declared state of emergency whether it be declared at the State, County or City level.

   Michael replied that they would like the Board to consider adopting the policy for any declared state of emergency. Wildfires are increasing which do affect drinking water systems and may lead to financial hardship for the water system. While they don't anticipate too many of these situations, they would like the Board to be prepared to offer debt relief to water systems that can show documented financial impact due to a declared state of emergency.

Eric Franson asked, who can declare a state of emergency and is that outlined in the policy?

Michael replied that it would be up to political leadership like the Governor. Jeff Coombs said that counties can and have declared states of emergency regarding the pandemic and they can do so for other emergencies, though he is unsure if the State must first declare before a county or municipality can declare. Scott Baird said this is something that the Legislature wants to look at in light of the pandemic.

David asked that "state or local declared state of emergency" be added to the policy. Michael said that wording can be added.

Jeff Coombs suggested that the policy receive legal review because part of those declarations is FEMA qualifications for reimbursement and also for emergency purchasing reasons. If we are to include in the policy, local in addition to state declaration, Jeff feels we need legal backing.

Michael clarified for Eric that the Division patterned this policy on the Community Impact Board (CIB) policy. Michael doesn't know if CIB nor Division of Water Quality had legal review of their policies, but we can have ours legally reviewed.

Eric expressed concern about the validity of a state of emergency declared at the local level. Michael then walked through the other two documents in the packet.

2) Loan Restructuring Request Form

This is the letter template that the water system would need to complete and submit to staff to be considered for loan restructuring.

3) Checklist for Loan Payment Deferral Request

The checklist covers four (4) areas:

1) Document hardship, which requires documenting monthly revenue so staff can identify any trends in revenue shortfalls due to when the emergency was declared. Also included is monthly water use, documentation of measures taken to provide debt relief to users, and documentation of retail/commercial/industrial water revenue lost due to business closures.

2) Governing Body – must be approved by their board/council to request restructuring. Request form has been completed.

3) Existing Loan Terms – list the existing loan terms.

4) Infrastructure Life

Since we cannot approve loans that exceed the estimated useful life of the infrastructure, they've asked the water system to provide a qualified professional's written estimate of the remaining useful life of the infrastructure that is associated with any DWSRF assistance.

Michael clarified for Blake that there is no debt forgiveness involved in this policy. The loan restructure could take a couple of different avenues. One such avenue would be the water system could decide to issue a new bond for the amount of the loan repayment they will be missing due to the declared state of emergency. That bond would have a due date as the very last payment on their loan. Another avenue would be they could take the missed payment and draft a bond that spreads that payment out over the remaining life of the existing loan. If the Board decides to offer a new interest rate on a new bond, the more recent revenue bond index rate could be used to calculate the new rate. Michael says it may be more straightforward to give them the same terms granted under the initial bond.

Marie suggested that the Board approve this policy for a given amount of time, and then that would give us time to have a legal review regarding issuing a state of emergency. That review can be given to the Board when the temporary approval expires. At that time the Board could decide to keep it as an ongoing policy for emergencies or if it was just for the pandemic and other emergencies that occurred during the temporary approval time period. The policy currently states "During a declared state of emergency, and for 180 days following…" and Michael suggested that language be clarified to say "…180 days after the emergency has expired…." In other words, when the emergency expires, loan recipients have another 180 days to declare financial hardship; that is the base term of the Board's restructuring ability. At the end of the 180 days, if the Board so desires, they can extend it for a specific period of time. The policy allows for the Board to shorten the term during that 180-day period.

- Jeff Coombs moved to delay approving the policy until the next Drinking Water Board meeting, allowing time for a legal review of who can declare an emergency and the criteria for declaring an emergency. Eric Franson seconded. <u>The motion was carried unanimously by the Board.</u>

D. Principal Forgiveness – Michael Grange

The Board requested a basic discussion of principal forgiveness and its effect on the revolving fund. Michael explained that funding for the Drinking Water and Clean Water SRF programs is included each year in EPA's budget and Utah receives anywhere from $9-11 million of that money. Utah's 2020 federal capitalization grant amount is just over $8 million. When Congress makes the appropriation they tell the states how much of the funding can be used for principal forgiveness (generally 20-30%; 30% for the 2020 grant) for disadvantaged communities. Thirty percent of Utah's 2020 capitalization grant of $8 million plus the $2.2 million State match would be about $3 million for principal forgiveness.

Principal forgiveness is basically a grant that the water system does not repay. The effect of principal forgiveness on the program is that we do not see a repayment stream come back on that money. We currently have about $1.2 million left in the principal forgiveness fund. Current applicant, Sigurd Town, qualifies for a significant amount of grant, about $700,000. The federal fiscal year ends September 30 and the new fiscal year starts October 1. The Division applies for

the 2021 capitalization grant in March/April of 2021, so the principal forgiveness amount will change on a regular basis throughout the year. We try to be careful with how much the staff recommends the Board authorizes in principal forgiveness. The Division's financial staff, Sandy Pett and Jeremy Andrews, are very good at watching and letting staff know if we're getting close to the 30% ceiling.

Congress sometimes invokes a congressional prerogative to allow states to use even more of the capitalization grant for principal forgiveness. For the 2020 grant, which we're currently applying for and should receive soon, Congress authorized states to use an additional 6-20 percent of the grant for principal forgiveness. For 2020 we could use about 50% or about $5 million, of the capitalization grant for principal forgiveness. Staff tries to use the base amount only and go into the congressional prerogative only if needed. The principal forgiveness amount does not carry over into the next year.

The Board/SRF staff has two mandates which compete with one another; 1) we are supposed to use to the principal forgiveness fund to provide subsidy to those systems who need it to keep water rates affordable and 2) we're supposed to protect the fund to keep it revolving in order to have repayment streams come back to loan money to other water systems. The more principal forgiveness that staff recommends and that the Board in turn authorizes negatively impacts the repayment stream.

E. Intended Use Plan Update – Michael Grange

The SRF program, as established by Congress, requires the Intended Use Plan (IUP) be submitted each year to EPA. The IUP is a description of how the State intends to use the money allocated in the capitalization grant, it describes the program, gives a history of what we've done, includes the project priority list, and language on the things we will do as a program to meet the requirements of the statute in the Safe Drinking Water Act. The IUP is brought to the Board each year, typically at a spring meeting, but was delayed this year due to the pandemic. At the time of this meeting, the draft of this year's IUP was available on the Drinking Water website for public comment. After the public comment period has ended, the updated IUP will be forwarded to EPA to fulfill that requirement.

Michael asked the Board to read through the IUP and let him know if they have any questions or comments.

No Board action is required on this agenda item.

F. SRF Applications

i) STATE

a) Scipio Town – Heather Pattee

Heather Pattee informed the Board that Scipio Town applied for funding through Rural Development as well as the Drinking Water SRF and they were just approved by Rural Development to fund their entire project. In light of this, Scipio has decided to pull their application with the Division to save on the cost of additional bonding.

ii) FEDERAL

a) Diamond Valley – Deauthorization – Skye Sieber

Skye Sieber informed the Board that in February 2019 the Board authorized a federal loan of $235,000 to Diamond Valley Acres Water Company in order to equip an existing well and connect it to their system. In March 2020 the Division received correspondence from Diamond Valley indicating that they had decided not to go ahead with the loan and that they were able to complete the project using their own funds.

The Financial Assistance Committee recommends that the Board deauthorize a loan of $235,000 with a hardship grant assessment fee of 2.5% for 20 years to Diamond Valley Acres Water Company.

- Jeff Coombs moved that the Drinking Water Board deauthorize a loan of $235,000 with a hardship grant assessment fee of 2.5% for 20 years to Diamond Valley Acres Water Company. Scott Morrison seconded. The motion was carried unanimously by the Board.

b) San Juan Spanish Valley – Skye Sieber

Representing San Juan Spanish Valley Special Service District (SSD) were Dan Hawley with Jones and Demille Engineering, Lloyd Wilson with the District, and Mack McDonald, San Juan County administrator.

Skye Sieber informed the Board that San Juan Spanish Valley SSD are requesting supplemental funding to pay for cost overruns on their newly constructed water system. In 2016 the Board authorized a loan for $2.55 million at 0% interest for 30 years with 30% in principal forgiveness to San Juan Spanish Valley SSD. Prior to construction, bids came in slightly higher than anticipated. At that time, San Juan County didn't want to go back to the funding agencies (they also received funding from CIB) and opted to handle potential cost overruns themselves. The system was substantially completed last fall and the county is still in the process of connecting some users. San Juan County has new administration who prefer to go back to the funding agencies to request supplemental assistance.

The total amount requested from the Drinking Water SRF is $600,000. This would be a second loan, in addition to their initial $2.55 million loan. Currently the local MAGI for San Juan County is $44,300, which is 92% of the State MAGI and their current average water bill is an estimated $47 (estimated because they're still connecting users). Their after-loan water bill would be $74.93 which is 2% of the local MAGI, so they do qualify for additional subsidy.

The Financial Assistance Committee recommends that the Board authorize a loan of $600,000 at 0% interest for 30 years with $180,000 in principal forgiveness to San Juan Spanish Valley SSD. There is no condition to resolve issues on their IPS report because they currently have none.

Mack McDonald, San Juan County administrator, explained that as the project has proceeded there have been cost overruns and as such they've found they needed additional resources to finish the project.

David asked, what are the type of connections and did the service area expand from the time they started the project to the time it ended?

Dan Hawley replied that at the start of the project they were focused primarily on connecting all of the existing residential connections, along with a few commercial connections. As they've gone through design and construction there were some additional equivalent residential connections that came on board where people had expanded or subdivided properties within the service area of the project. Upon completing the project there are over 230 equivalent residential connections based on the small burst of growth that happened upon expanding a new water system through the area.

- Eric Franson moved that the Drinking Water Board authorize a loan for $600,000 at 0% interest for 30 years with $180,000 in principal forgiveness to the San Juan Spanish Valley Special Service District. David Pitcher seconded. The motion was carried unanimously by the Board.

c) **Willow Creek –** Heather Pattee

Representing Willow Creek were Troy Cooper, Natalie Erickson, and Eric Dursteler, engineer.

Heather Pattee informed the Board that Willow Creek Water Company is requesting financial assistance in the amount of $123,000. Their project includes a backup generator, meters, and a tank mixer. The local MAGI for Willow Creek is 117% of the State MAGI and their after-project water bill, at full loan, would be $84.61 which is 1.81 of the local MAGI.

The Financial Assistance Committee recommends that the Board authorize a loan of $123,000 at 1% interest for 20 years with the condition that they resolve all issues on their compliance report.

Eric Dursteler explained to the Board that these improvements are to help out chlorine concentration mixing in the tank. The generator has been on the docket for quite some time which is required and will help the system out in the event they do have a power outage. Also, the meters are quite outdated.

Marie commented that the emergency generator will resolve the significant deficiencies on their IPS report. The report also shows that the system has a 2019 violation for missing total coliform samples.

Natalie Erickson explained that with regard to missing the total coliform samples, they have been working significantly with their water tester. The water tester has missed a few samples and they've been trying to keep on top of him for that sampling. That violation should fall off this July. They're a fairly new board and they've had some drastic changes last year including the death of their founder and excusing the member who was running everything. As they proceeded with this new board, they've been climbing uphill trying to resolve issues with sampling and deficiencies.

- Scott Morrison moved that the Drinking Water Board authorize a loan of $123,000 with 1% interest for 20 years to Willow Creek Water Company, conditions include that they

resolve all issues on their compliance report. Jeff Coombs seconded. The motion was carried unanimously by the Board.

d) **Sigurd Town –** Heather Pattee

Representing Sigurd Town was Mayor Kelly Alvey and Kelly Chappell with Ensign Engineering.

Heather Pattee informed the Board that Sigurd Town is requesting $2,300,000 in financial assistance for a spring redevelopment with associated piping, a 300,000-gallon tank, and a chlorinator. Sigurd Town is contributing $100,000 for a total project cost of $2.4 million. The local MAGI for Sigurd is 73% of the State MAGI. The average water bill is $38.57 per month which is 1.32% of the local MAGI, but the after-project water bill is 3.15% of the local MAGI, therefore they do qualify for additional subsidy.

There was a lot of discussion during the Financial Assistance Committee call about how to make this project more affordable for the system. One of the items discussed was to extend the term of the loan, possibly 40 years. There was discussion that 40 years is enough for the life expectancy of the project. The financial assistance committee did not make a recommendation as they wanted to include the entire Board in the discussion.

Mayor Alvey explained to the Board that some of their springs haven't had any work since the 1930s and some need re-piping. They have a problem well just down from their springs, so they want to switch to another well. They also have a 75+ year-old tank that has had some repair over the years, but is due to be replaced.

Jeff Coombs asked if Sigurd has had town meetings, or the like, to talk about the water bill increase with the residents.

Mayor Alvey replied that they've talked to some residents but they'd like to have a meeting before long to discuss the water bill.

The Board discussed the pros and cons of the various loan options available to the water system regarding the loan term and after-project water bill. There seemed to be consensus amongst the Board that 30 years was the appropriate loan term. The system recently paid off another drinking water project loan which lessens the water bill amount.

Eric made the following motion with $800,000 in principal forgiveness as a compromise between the higher principal forgiveness option of $910,000 and the lower option of $680,000.

- Eric Franson moved that the Drinking Water Board authorize a loan of $2.3 million at 0% interest for 30 years with $800,000 in principal forgiveness to Sigurd Town. Jeff Coombs seconded. The motion was carried unanimously by the Board.

G. Provo River Water Users Association WIFIA Project - Michael Grange

Presenting this project to the Board was Keith Denos with Provo River Water Users Association.

Michael Grange discussed this project with the Board at the February 27, 2020 DWB Meeting. At that meeting he gave the Board a quick rundown of the WIFIA program and how WIFIA and the State SRF programs are cooperating. Provo River Water Users Association is approaching WIFIA for a loan to work on an expensive project.

Keith walked through, for the Board, the Deer Creek Intake project. Approximately half of Utah's water supply comes through Deer Creek Reservoir and so it's vital to Utah's economy. The problem at Deer Creek is an 80-year-old intake structure and guard gates that are reaching end of life. To prepare for the project, the Association's board authorized a study which looked at aging infrastructure, impact of invasive species issues, water quality, construction scheduling and coordination with other agencies including state parks. They anticipate construction starting in early 2022 and lasting about 18 months.

The engineer design firm submitted an innovative design proposal that would allow the issues to be addressed without draining the reservoir. The firm has also included state of the art design features to help deal with invasive species, such as Quagga mussels.

The Association has already begun a community awareness outreach effort which will continue throughout the project.

Their main target for funding is WIFIA and they've been working with a consultant to prepare a letter of interest in anticipation of WIFIA's 2020 funding period opening soon. WIFIA won't completely fund this project (49%) so they're also looking to the Drinking Water Board and/or the Water Resources Board for financial assistance. Central Utah Water Conservancy District has committed to help and the Association has some of their own money to contribute to the project. They will need an additional $26-29 million from the DWB and/or Water Resources Board so they'll probably approach this Board for funding sometime next year.

The association feels their project meets most of the WIFIA funding criteria including that its regionally significant, the funding would allow the project to start significantly sooner, and it addresses aging infrastructure reaching end of life.

8. Division Strategic Planning Process – Nathan Lunstad & Mimi Ujiie

Nathan Lunstad and Mimi Ujiie presented the Division's Strategic Plan Development Process. Mimi introduced the internal and external strategic planning committee members, including Board member Scott Morrison. The process started on April 10 wherein the committee created a vision, mission, purpose and guiding principles. They're currently in the process of creating priority goals and objectives.

For this process the committee created the following Purpose Statement & Guiding Principles:

Look to the future and make meaningful changes in the Division that are reasonable, credible, and sustainable, to build a framework and mindset that creates robust water systems throughout the state, who safeguard Utah's public health.

Accomplishments of the committee thus far; drafted purpose statement and guiding principles, conducted stakeholder analysis, collected data for SWOT (strengths, weaknesses, opportunities, threats) analysis, conducted SWOT analysis, and drafted goals. Mimi explained that in SWOT analysis they want to maximize strengths and minimize weaknesses so that the agency can take advantage of external opportunities to overcome identified threats. Many of the Board members, who are also stakeholders, participated in the SWOT analysis.

The SWOT analysis results were included in the Board packet. Nathan highlighted that in the analysis of the strengths and weaknesses, the stakeholders and Division staff were very much in alignment in those results. The data from the SWOT analysis has helped the committee to narrow down and draft three goals: 1) strengthen public water systems through effective partnerships, 2) commitment to regulatory responsibilities, and 3) commitment to excellence. The committee will be creating objectives for each goal that are SMART; specific, measurable, achievable, relevant, and time-bound.

The committee's next steps are to complete the SMART objectives and complete the strategic plan which will be shared with the Board at a meeting or with the written plan.

9. Rural Water Association Report – Dale Pierson

The report is in the packet.

Due to Brian Pattee's (former compliance circuit rider) departure, RWAU has made some personnel changes:

- Terry Smith, formerly the management technician, is now the compliance circuit rider.
- The management technician position was filled by Janell Braithwaite, formerly of Gunnison City.

10. Directors Report – Marie Owens

A. Enforcement Report

Included in the Board packet is the enforcement report which is ever-changing as the staff is constantly working to resolve these situations, while new issues are added.

B. Legislative Session Update

<u>2020 Bills That Passed</u>

S.J.R. 2 Lead Levels in Children passed which encourages blood lead level testing for children throughout the state.

H.B. 41 State Water Policy Amendments passed which creates a state water policy that legislators should consider as they're reviewing water bills in the future.

H.J.R. 3 Municipal Jurisdiction Water Amendments passed which is a state constitution amendment that will now be on the general election ballot this fall. The amendment would change the constitution to allow water systems to sell water on a surplus basis to communities outside their jurisdiction.

S.B. 29 Drug Disposal Program passed.

S.B. 88 Environmental Quality Revisions passed which adjusts the penalty authority of the Board.

H.B. 166 Watershed Councils passed which would provide the structure for watershed councils throughout the State.

H.B. 40 Water Loss Accounting Act passed; however, it dramatically changed and by the time the bill passed it said the water loss accounting program would go to interim session for study and then come back.

S.B. 51 Secondary Water Requirements passed.

H.B. 105 Water Facilities Amendments passed which gives additional protections to water facilities when there are acts that damage or impact their facilities. It creates civil actions for when someone illegally connects into a water system, damages or reroutes, etc.

H.B. 188 Emergency Management Act passed which requires municipalities and counties to register with the Integrated Public Alert and Warning System (IPAWS). During an emergency they can access the IPAWS to get emergency notifications to their residents.

<u>2020 Bills That Did Not Pass</u>

H.B. 156 Water Amendments and Education Entities did not pass but was introduced to give higher education entities standing as public water suppliers with the Division of Water Rights.

S.B. 84 Public Entity Water Users Amendments did not pass but related to secondary water and submission of water plans.

H.B. 88 School & Child Care Water Testing Requirements did not pass but would have required schools and child care facilities to test their drinking water for lead.

Whenever they'd get past the funding concerns of this bill, Marie's perception of it not moving forward is entities' resistance to document and disclose to the public high lead levels. Once the data is collected it needs to be communicated to the public, whatever the results may be. Scott Baird added that part of the resistance is the perceived liability and fear of what may come after making that knowledge available to the public.

The Division has a federal water infrastructure grant that reimburses schools and child care facilities which voluntarily perform lead testing. Before the pandemic there was some interest but it has since significantly dropped off. The Division was originally granted $480,000 but the

amount has since been bumped up to over $700,000 which is available to pay for testing. The funding is only available for testing and not abatement which is the school's responsibility.

2020 DDW Funding Request

DEQ/DDW requested of the Legislature a building block/additional funding for $2.5 million annually for five years to create capacity within the Division to be able to transition to at least 35% of its revenue coming from dedicated credits. Dedicated credits is the legislative term for fees. Fees can be in a variety of different models. New DDW fees were enacted in the 2020 Legislative Session and is the first phase of many fees to be enacted. The Division believed within five years it would be able to implement the fees and be able to back away from the funding.

The Legislature appropriated $10 million one-time for FY21. In light of the pandemic the Legislature has since rescinded all appropriations from the 2020 session. The Division may bring the request back to the Legislature during the 2021 session or in the next few years.

For the Board's information, the Division oversees the compliance and permitting for 1,438 distinct treatment facilities, 2,484 unique drinking water sources, and 1,100 individual distribution systems and their related storage.

Opportunities for Improvement

The Division requested the building block in order to:

- Modernize the permitting program which would create the ability for the Division to review and renew operating permits and exceptions from rule.

- Increase technical assistance; last year there were over 70 samples which triggered assessments and over 100 response events that local communities would have considered to be an emergency such as boil orders, spills, and significant infrastructure failures. The pandemic has also required additional technical assistance.

- Compliance inspection upgrades (sanitary surveys) in order to address the 20% survey backlog and provide consistency between all surveyors which includes staff from local health departments.

- Create a partnering incentive program to encourage and assist the formation of local partnerships among small water systems. Even if these partnerships were created from a technical or a resource sharing standpoint it would create sustainability within these organizations.

2020 Focus Items

- Continuity of operations – since the pandemic started the Division has been actively reaching out to water systems, listening to their issues, and fielding their concerns to ensure we have continuity of operations throughout this event.

- EPA objective to reduce health-based violations by 25% by 2022 – staff is actively working to meet this objective.

- Implementing IPS 2020 – staff is actively working to implement the recent changes to the IPS rule.

- Division strategic planning – as previously presented in this meeting, this planning process is in progress.

- Division future fee structure – the current fees will take effect on July 1, 2020 and it is the first phase of many phases of fees.

- State funding issues – the State is having issues related to the money and revenue that is available to the State and therefore State agencies, so the Division will be watching that closely. The Division was asked to create a proposal for a 2%, 5% or 10% cut to their ongoing operating budget and they will find out in June or July which of those recommendations the Legislature will implement.

- Legislative audit findings – the Division is in the final stages of being audited by the State Legislative auditors. The Division has been working with the auditors over the last several months and has given them a significant amount of data. The auditors are in the process of finalizing a report on our program to give to the Legislature. The Division will be focused on their findings and making the necessary changes.

C. New Employee Introductions

- Elisa Brawley is an environmental program coordinator with the SRF program.
- Julie Cobleigh is an engineer in the Permitting Section and is a returning employee to DDW.
- Mimi Ujiie was brought on to fill the new assistant director position and oversees the Rules and Administrative Services sections.
- Linda Ross is in the Administrative Services section and handles the GRAMA requests for DDW.
- Russell Seeley is a new DEQ district engineer covering the southeast area, filling Scott Hacking's vacancy.
- Brian Pattee comes to DDW from RWAU and is an environmental scientist with the Assessment Response section.

D. Other

11. Public Comment Period – Roger Fridal

No public comments were made.

12. Open Board Discussion – Roger Fridal

There was no open board discussion.

13. Next Board Meeting

Date: September 1, 2020
Time: 1:30 PM
Place: GoToMeeting

14. Adjourn

- David Pitcher moved to adjourn the meeting. Kristi Bell seconded. The motion was carried unanimously by the Board.

The meeting adjourned at 3:33 PM.

Agenda Item 3(B)

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

L. Scott Baird
Executive Director

DIVISION OF DRINKING WATER
Marie E. Owens, P.E.
Director

DRINKING WATER EMERGENCY BOARD MEETING
Via GoToMeeting
July 20, 2020 10:30 AM

DRAFT MINUTES

1. **Call to Order** – Roger Fridal

   Roger Fridal, Chair, called the Board meeting to order at 10:32 AM.

2. **Roll Call** – Michael Grange

   Board Members present: Roger Fridal, Scott Morrison, Eric Franson, Blake Tullis, David Pitcher, Barbara Gardner.

   Division staff present: Michael Grange, Heather Pattee, Elisa Brawley, Allyson Spevak, Colt Smith.

3. **Public Comment Period**

   There was no public comment.

4. **Conflict of Interest - Roger Fridal**

   There were no conflicts of interest.

5. Financial Assistance Committee Report
   a. SRF Applications
      i. FEDERAL
         1. Woodland Hills – Heather Pattee

   Representing Woodland Hills were Corbett Stephens, Woodland Hills Public Works Director and Water Operator, and Ted Mickelson of Jones and Demille Engineering.

Heather Pattee informed the Board that Woodland Hills City has a project consisting of 17,000 feet of water line to replace aging and failing water line within the city's streets. The project will include replacing valves, fire hydrants, PRVs, and other appurtenances. The cost of the project is estimated at $3.2 million, with Woodland Hills contributing $300,000. The local MAGI for Woodland Hills is approximately 157% of the State MAGI. The after-project water bill would be $120.26 which is 2% of the local MAGI so they do qualify for additional subsidy.

Because this request did not go to the Financial Assistance Committee, the staff recommends that the Board authorize a federal loan of $2.9 million with $300,000 in principal forgiveness at 0% interest for 30 years for a repayable amount of $2.6 million to the City of Woodland Hills.

Scott Morrison asked the age of the ductile that is beginning to fail.

Ted Mickelson explained that the pipeline they're looking to replace is in the older sections of town and dates back to the early 1970s. Recently the city experienced five water line breaks over the course of three or four days and when they started pulling pipe out of the ground they discovered it was very corroded. This was probably due to the practice of the time when the pipe was laid and not protected against corrosion and due to corrosive soils. The corrosion will probably continue to happen in this area of town more rapidly and likely spread from there, hence the request for the loan at this time.

David Pitcher assumes they're using PVC for the new pipes to prevent corrosion. David asked about their IPS points regarding submitting water use data and the switch on the chlorine room.

Corbett Stephens explained that 15 of their IPS points are due to being unable to read peak day demand flow. He is in the process of installing a meter vault on the tanks to address that issue. Currently they have a meter to measure the water going into the tank but they can't measure peak day demand coming out of the tank.

The other 15 points relate to the Maple Canyon tank which is shared between Woodland Hills and Salem. To resolve this issue Corbett believes they need to request an exception to the rule regarding the switch on the chlorine room.

David voiced concerns about bids coming in higher lately and asked Ted if the project cost was in line with the most recent bids.

Ted explained they put together the estimate based on more recent bids and it was actually a little lower than what was submitted as the final cost. They added a heavy contingency, about $500,000, to the project to account for that, so Ted thinks they will be covered. If they don't have sufficient funding the backup plan is to remove a few, less critical streets from the project.

- David Pitcher moved that the Drinking Water Board authorize a loan of $2.9 million with $300,000 in principal forgiveness at 0% interest for 30 years for a repayable

amount of $2.6 million to the City of Woodland Hills with the condition that staff continue to work them on their IPS points. Scott Morrison seconded. The motion was carried unanimously by the Board.

6. Other

Michael thanked the Board and everyone else for participating in this last-minute meeting.

7. Next Board Meeting

Date: September 1, 2020
Time: 1:30 PM
Place: GoToMeeting

8. Adjourn

- Barbara Gardner moved to adjourn the meeting. Roger Fridal seconded. The motion was carried unanimously by the Board.

The meeting adjourned at 10:45 AM.

Agenda Item 6(A)

DIVISION OF DRINKING WATER

STATE LOAN FUNDS

AS OF July 31, 2020

	SUMMARY		
	Total State Fund:	$12,812,545	
	Total State Hardship Fund:	$2,641,691	
	Subtotal:	$15,454,236	
LESS AUTHORIZED	Less:		
	Authorized Loans & Closed loans in construction:	$8,205,000	*(see Page 2 for details)*
	Authorized Hardship:	$1,828,082	
	Subtotal:	$10,033,082	
	Total available after Authorized deducted	**$5,421,154**	
PROPOSED	**Proposed Loan Project(s):**	**$539,000**	*(see Page 2 for details)*
	Proposed Hardship Project(s):	**$360,005**	
	Subtotal:	**$899,005**	
AS OF:			
July 31, 2020	**TOTAL REMAINING STATE LOAN FUNDS:**	**$4,068,545**	
	TOTAL REMAINING STATE HARDSHIP FUNDS:	**$453,604**	

Total Balance of ALL Funds: **$4,522,149**

Projected Receipts Next Twelve Months:		
and Sales Tax Revenue		
Annual Maximum Sales Tax Projection	**$3,587,500**	
Less State Match for 2020 Federal Grant	$0	
Less State Match for 2021 Federal Grant	($2,202,200)	
Less Appropriation to DDW/Board	($1,018,700)	
SUBTOTAL Sales Tax Revenue including adjustments:		$366,600
Payment:		
Interest on Investments (Both Loan and Hardship Accounts)		$156,000
Principal payments		$3,076,400
Interest payments		$781,983
Total Projections:		$4,380,983

Total Estimated State SRF Funds Available through 8-01-2021	**$8,903,132**

DIVISION OF DRINKING WATER
STATE LOAN FUNDS
PROJECTS AUTHORIZED BUT NOT YET CLOSED
AS OF July 31, 2020

Community	Loan #	Cost Estimate	Date Authorized	Date Closed/Anticipated	Authorized Funding		
					Loan	Grant	Total
Aurora City 0.75% int 30 yrs	3S258	4,228,000	Aug-18		3,804,000	424,000	4,228,000
Kane Co WCD .81% int 20 yrs	3S1712	210,000	Feb-19		168,000	42,000	210,000
Virgin Town 0% int 20 yrs	3S1702	1,200,000	Jan-19		400,000	400,000	800,000
Genola City 0% int 30 yrs	3S1732	2,849,400	Aug-19		2,273,000	326,400	2,599,400
Subtotal Loans and Grants Authorized					6,645,000	1,192,400	7,837,400
PLANNING LOANS / GRANTS IN PROCESS							
Jensen WID grant	3S1757P	40,000	May-20	May-19		40,000	40,000
Escalante	3S1737P	38,000	Aug-19	Aug-19		18,032	18,032
Fairview	3S1736P	40,000	Aug-19	Sep-19		40,000	40,000
Pinion Forest	3S1714P	70,000	Aug-19	Apr-20		20,000	20,000
Eureka	3S1743P	20,000	Sep-19			20,000	20,000
Thompson SSD	3S1747P	29,500	Jan-20	Feb-20		29,500	29,500
Church-Wells	3S1751P	40,000	Mar-20	May-20		40,000	40,000
Moroni pl grant	3S1752P	36,000	Mar-20			36,000	36,000
Sunset City pl grant	3S1754P	40,000	Apr-20	Jun-20		40,000	40,000
Austin DDS pl grant	3S1756P	40,000	Apr-20			40,000	40,000
Genola City Water Tank	3S1732	250,000	Aug-19	Mar-20		250,000	250,000
							0
Subtotal Planning in Process					0	573,532	573,532
CLOSED LOANS (partially disbursed)							
Ephraim 1% int, 20 yrs	3S251	1,422,905	Mar-18	Apr-19	560,000	62,150	622,150
Mtn Regional-Community Wtr 2% 20 yr	3S254	2,600,000	Jul-18	Dec-19	1,000,000		1,000,000
Subtotal Closed Loans Partially Disbursed					1,560,000	62,150	1,622,150
TOTAL AUTHORIZED/PLANNING/OR CLOSED BUT NOT YET FUNDED					$8,205,000	$1,828,082	$10,033,082
PROPOSED PROJECTS FOR July/August 2020							
Caineville 50/50 0% 30 yrs	3S1766	595,000			295,000	300,000	595,000
Bear River WCD 0% 20yrs	3S1761	201,005			141,000	60,005	201,005
Axtell SSD 2% 20yrs 1% LOF	3S1765P	103,000			103,000		103,000
Total Proposed Projects					539,000	360,005	899,005

DIVISION OF DRINKING WATER
STATE LOAN FUNDS
AS OF July 31, 2020

	5235 Loan Funds	5240 Interest (use for Grants)	Total
Cash:	$12,812,545	$2,641,691	$15,454,236
Less:			
Loans & Grants authorized but not yet closed (schedule attached)	(6,645,000)	(1,765,932)	(8,410,932)
Loans & Grants closed but not fully disbursed (schedule attached)	(1,560,000)	(62,150)	(1,622,150)
Proposed loans & grants	(539,000)	(360,005)	(899,005)
Administrative quarterly charge for entire year	(1,018,700)		(1,018,700)
Appropriation to DDW	0		0
FY 2020 Federal SRF 20% match	0		0
FY 2021 Federal SRF 20% match	(2,202,200)		(2,202,200)
	847,645	**453,604**	**1,301,249**
Projected repayments during the next twelve months			
Thru 08-01-2021			
Principal	3,076,400		3,076,400
Interest		781,983	781,983
Projected annual investment earnings on invested cash balance		156,000	156,000
Sales Tax allocation thru Aug-01-2021	3,587,500		3,587,500
Total	**$7,511,545**	**$1,391,588**	**$8,903,132**
* All interest is added to the Hardship Fee account.			

DIVISION OF DRINKING WATER

FEDERAL SRF

AS OF July 31, 2020

FIRST ROUND FUND		FEDERAL SECOND ROUND FUND					
1997 thru 2020 SRF Grant		Principal Repayment		Earnings on Invested Cash Balanc		Hardship Fund	
Net Federal SRF Grant	$187,337,761	Principal (P):	$69,122,603	Total:	$1,235,212	Total:	$1,393,044
Total State Matches:	$43,453,300	Interest (I):	$19,708,765				
Closed Loans:	-$222,697,701	**Total P & I:**	**$88,831,368**				
Total Grant Dollars:	**$8,093,360**						

SUMMARY		
Total Federal State Revolving Fund:	$98,159,940	
Total Federal Hardship Fund:	$1,393,044	
Subtotal:	$99,552,984	
LESS AUTHORIZED & PARTIALLY DISBURSED		
Less:		
Authorized & Partially Disbursed Closed Loans:	$74,366,936	*(see Page 2 for details)*
Authorized Federal Hardship:	$419,787	
Subtotal:	$74,786,723	
PROPOSED		
Proposed Federal Project(s):	**$7,388,000**	*(see Page 2 for details)*
Proposed Federal Hardship Project(s):	**$58,000**	
Subtotal:	**$7,446,000**	
AS OF: **July 31, 2020**		
TOTAL REMAINING LOAN FUNDS:	**$16,405,004**	
TOTAL REMAINING HARDSHIP FUNDS:	**$915,257**	

Total Balance of ALL Funds after deducting proposed actions: $17,320,261

Projected Receipts thru August 1, 2021		
2020 Fed SRF Grant	$0	
2020 State Match	$0	
2021 Fed SRF Grant & State Match	$10,295,560	
Interest on Investments	$2,011,200	
Principal Payments	$7,463,203	**Receive 60% in January**
Interest	$1,164,426	
Hardship & Technical Assistance fees	$296,966	
Fund 5215 principal payments	$108,200	
Total:	$21,339,556	

Total Estimated Federal SRF Funds Available through: 08/01/2 **$38,659,817**

DIVISION OF DRINKING WATER
FEDERAL STATE REVOVING FUND

PROJECTS AUTHORIZED BUT NOT YET CLOSED
AS OF July 31, 2020

COMMUNITY	Total Project	Project Terms	Loan #	Authorized Date	Closing Date Scheduled or Estimated	Authorized From Loan Funds (1st or 2nd Round) Loan	Forgiveness	Total	Hardship Fund
Canyon Meadows Mutual Wtr	1,925,000	90/10 1.0% hgf, 30 yrs	3F1700	Jan-19	Aug-20	1,455,000	470,000	1,925,000	
Canyon Meadows Mutual Wtr	800,000	90/10 1.0% hgf, 30 yrs	3F1700	Feb-20	Aug-20	720,000	80,000	800,000	
Hyde Park City	5,994,000	2.91% HGF 20 yrs	3F1744	Jan-20		5,000,000		5,000,000	
Spring Creek	57,947	100% principal forgiveness	3F1746	Feb-20				0	57,947
Sigurd Town	2,300,000	0%, 30 YRS	3F1745	Jun-20		1,500,000	800,000	2,300,000	
San Juan Spanish Valley	300,000	0% 30 YRS	3F1755	Jun-20		420,000	180,000	600,000	
Willow Creek Water Co	123,000	1% 20 years	3F1759	Jun-20					123,000
					TOTAL CONSTRUCTION AUTHORIZED:	$ 11,695,000	$ 1,830,000	$ 13,525,000	$ 180,947

COMMITTED ADVANCES / AGREEMENTS or PARTIALLY DISBURSED CLOSED 2ND ROUND AGREEMENTS:

					Date Closed				
								0	0
Rural Water Assn of Utah	676,000	5 yr contract for Development Specialist	Ongoing	Jan-18	Jun-18			0	135,200
Forest Glen Plat A HOA	1,438,986	0% int, 30 yrs	3F222	Feb-14	Dec-14	57,000	24,986	81,986	
Springdale	7,840,000	.5% int/hgf, 30 yrs	3F264	May-16	Oct-17	135,000	39,350	174,350	
Moab	90,000	100% pf engineering planning study	3F292P	Aug-17	Feb-18		90,000	90,000	
Granger Hunter Improvement District	20,000,000	1.25% HGA 20 yrs (portfolio)	3F1708	Feb-19	Jul-19	17,317,600		17,317,600	
Kearns Improvement District	21,000,000	1.25% hgf, 20 yrs (portfolio)	3F1725	Jun-19	Dec-19	16,600,000		16,600,000	
Central Utah WCD-Duchesne Valley WTP	18,000,000	1.25% HGF, 30 yrs	3F1731	Aug-19	Jun-20	15,820,000		15,820,000	
Central Utah WCD	10,000,000	1.25% HGF, 20 yrs (portfolio)	3F1741	Nov-19	Jun-20	7,900,000		7,900,000	
Lincoln Culinary Water Assn	2,516,000	60/40 1.25% hgf, 30 yrs	3F1696	Jan-19	Jul-20	1,108,000	738,000	1,846,000	
Swiss Alpine Water Co	1,752,000	.75% HGF 30 yrs	3F300	Feb-20	Jul-20	1,012,000		1,012,000	
Summit Culinary Water	36,600	100% pf 5 point analysis	3F1694P	Jun-18	Jul-18			0	23,140
Axtell Community Service Distribution	40,000	5 yr 0% master plan & gw well siting	3F1719P	Mar-19	May-19			0	500
Genola	40,000	100% pf engineering design	3F1735P	Aug-19	Aug-19			0	0
Hildale City	40,000	100% pf master plan	3F1704P	Nov-18				0	40,000
Central Iron Co WCD	40,000	100% pf master plan	3F1727P	Apr-19				0	40,000
					TOTAL PLANNING AUTHORIZED:	$59,949,600	$892,336	$60,841,936	$238,840
					TOTAL CONSTRUCTION & PLANNING:			$74,366,936	$419,787

AVAILABLE PROJECT FUNDS:	$23,793,004
AVAILABLE HARDSHIP FUNDS:	$973,257

PROPOSED PROJECTS FOR June 2020:

Provo City	7,388,000	1% HGF 20 yrs (disadvantaged? No lof)	3F1764		7,388,000		7,388,000	
Wilson Arch	58,000	100% principal forgiveness	3F1770					58,000
							0	
				TOTAL PROPOSED PROJECTS FOR THIS MEETING:	$7,388,000	$0	$7,388,000	$58,000

*RWAU hardship grant is being disbursed monthly

TOTAL FUNDS AFTER PROPOSED PROJECTS ARE FUNDED:	$16,405,004
TOTAL FUNDS AFTER PROPOSED HS PROJECTS ARE FUNDED:	$915,257

NOTES OF LOAN CLOSINGS SINCE LAST BOARD MEETING:

Total Recent Loan Closings	$0	$0	$0	$0

DIVISION OF DRINKING WATER
FEDERAL SRF LOAN FUNDS
AS OF July 31, 2020

	Loan Funds 1st Round	Loan Payments			TOTAL
		2nd Round		Hardship Fund	
		Principal	Interest		
Federal Capitalization Grants and State 20% match	$230,791,061				
Earnings on Invested 1st Round Funds			1,235,212		
Repayments (including interest earnings on 2nd round receipts)		69,122,603	19,708,765	1,393,044	322,250,685
Less:					
Closed loans and grants	-222,697,701				-222,697,701
SUBTOTAL of Funds Available	**$8,093,360**	**$69,122,603**	**$20,943,977**	**$1,393,044**	**$99,552,984**
Loans & Grants authorized but not yet closed or fully disbursed	-10,745,000	-62,729,600	-892,336	-419,787	-74,786,723
SUBTOTAL of Funds Available less Authorized	**-$2,651,640**	**$6,393,003**	**$20,051,641**	**$973,257**	**$24,766,261**
Future Estimates:					
Proposed Loans/Grants for current board package	-7,388,000			-58,000	-7,446,000
SUBTOTAL of Funds Available less Proposed Loans & Grants	**-$10,039,640**	**$6,393,003**	**$20,051,641**	**$915,257**	**$17,320,261**
PROJECTIONS THRU August-2021					
2021 Fed SRF Grant & State Match	10,295,560				
2020 Fed SRF Grant	0				0
2020 State Match	0				0
Projected repayments & revenue during the next twelve months		7,571,403	1,164,426	296,966	9,032,796
Projected annual investment earnings on invested cash balance		1,620,000	360,000	31,200	2,011,200
TOTAL	**$255,920**	**$15,584,406**	**$21,576,067**	**$1,243,423**	**$38,659,817**

Agenda Item 6(B)

Project Priority List
Presented to the Drinking Water Board
September 1, 2020

DRINKING WATER BOARD
PACKET FOR PROJECT PRIORITY LIST

There are two new projects being added to the project priority list

Wilson Arch West is being added to the Project Priority List with 43.5 points. Their project consists of pump and motor upgrades and replacement.

Provo City is being added to the Project Priority List with 12.9 points. Their project consists of two pump stations for aquifer storage and recovery.

FINANCIAL ASSISTANCE COMMITTEE RECOMMENDATION:

The Drinking Water Board approve the updated Project Priority List.

August 18, 2020

Utah Federal SRF Program

Project Priority List

Total Unmet Needs: **$680,754,376** **Total Needs, incl. Recent funding** **$605,169,509** **Authorized** **$369,335,491**

	date	type	%Green	Priority Points	System Name	County	Pop.	ProjectTitle	Project Total	Request DWB	Funds Authorized
N				43.5	Wilson Arch West	San Juan	9	Upgrade/replace pump, motors	$58,800	$58,000	
N				26.4	Old Meadows	Iron		Waterline and meters	$252,227	$222,227	
N				12.9	Provo City	Utah		2 pump stations and pipeline for aquifer storage and recovery	$18,020,000	$7,388,000	
A				31.6	Virgin Town	washington	596	New tank and distribution lines	$1,200,000	$800,000	$800,000
A				30.7	Canyon Meadows	Wasatch	100	Trans line, Dist line, Tank, treatment plant	$1,724,068	$1,724,068	$1,925,000
A				30	Central Utah WCD	Duchesne		Duchesne Valley WTP	$18,000,000	$18,000,000	$18,000,000
A				27.5	Sigurd Town	Sevier		Spring redevelopment, tank, chlorinator	$2,120,101	$2,020,101	
A				25	Greenwich	Piute	67	Chlorination building	$130,000	$130,000	$130,000
A				22.5	Central Utah WCD	Utah		Programmatic financing	$10,000,000	$10,000,000	$10,000,000
A				16.7	Willow Creek	Box Elder	260	Generator, mixer, meters	$123,000	$123,000	
A				11.4	Spring Creek Water Users	Iron		Meter replacement	$57,947	$57,947	
A				7.2	Diamond Valley Acres	Washington	1,370	Well equipping and conn to system	$235,000	$235,000	$235,000
A				7	Genola	Utah	1,500	Tank and well	$2,849,400	$2,849,400	$2,849,400
A				4.7	Hyde Park City	Cache		2 MG tank, trans & dist line, booster pump	$5,994,000	$5,000,000	$5,000,000

N = **New Application**
A = **Authorized**
P = **Potential Project- no application**

E= **Energy Efficiency**
W= **Water Efficiency**
G= **Green Infrastructure**
I= **Environmentally Innovative**

EMERGENCY FUNDING

Agenda Item 6(C)

DRINKING WATER BOARD PACKET
Assistant Attorney General Memorandum on SRF Debt Relief Policy

Background

At the June 9, 2020 Drinking Water Board Meeting, Division staff presented to the Board a draft policy intended to offer debt relief to SRF loan recipients during a declared state of emergency. During this presentation, the Board requested that staff obtain a legal opinion on the nature of the debt relief policy, specifically language regarding a "declared state of emergency." In the following memorandum, the Assistant Attorney General has provided their opinion on the matter and the application of the debt relief policy.

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MEMORANDUM

TO: Utah Drinking Water Board, through Marie Owens, Director, DDW

FROM: Paul McConkie, Utah Assistant Attorney General

DATE: August 20, 2020

RE: DWRSF debt relief policy, specifically language regarding "declared state of emergency"

QUESTION

On April 1, 2020, the Division of Drinking Water (DDW) issued a Regulatory Guidance During COVID 19 memorandum in coordination with the EPA's Memo dated March 26, 2020, on the subject of COVID-19 Implications for the EPA's Enforcement and Compliance Assurance Program. The April 1, 2020 Memorandum referenced DDW's recognition of difficulties that the pandemic may create for regulated communities. At the June 9, 2020 Drinking Water Board meeting, the DDW presented for Board approval a Drinking Water State Revolving Fund (DWSRF) debt relief policy (Attachment A). The Board reviewed and temporarily approved the attached policy. The proposed debt relief policy states that "during a *declared state of emergency*, and for 180 days following, the Drinking Water Board will accept requests from loan recipients to restructure their loans based on financial hardship.

In drafting the policy, DDW staff determined that while the immediate need for debt relief may involve financial stress due to the COVID-19 pandemic, that a general debt relief policy due to any declared state of emergency may likely better served the Drinking Water Board and Utah's drinking water systems.

The Board requested that staff obtain a legal opinion on the nature of the debt relief policy, specifically language regarding a "declared state of emergency" Namely, who has authority to declare an emergency and how that might be regulated or applied to debt relief under this policy.

OPINION

I. Who has authority to declare an emergency

Emergency Declaration Authority of Governor

Utah law grants the Governor the power to declare a state of emergency. Under Utah Code § 53-2a-206:

> (1) A state of emergency may be declared by executive order of the governor if the governor finds a disaster has occurred or the occurrence or threat of a disaster is imminent in any area of the state in which state government assistance is required to supplement the response and recovery efforts of the affected political subdivision or political subdivisions.

(2) A state of emergency shall continue until the governor finds the threat or danger has passed or the disaster reduced to the extent that emergency conditions no longer exist.
(3) A state of emergency may not continue for longer than 30 days unless extended by joint resolution of the Legislature, which may also terminate a state of emergency by joint resolution at any time.

Declaring state of emergency allows a state and communities to access additional funding and resources. During a state of emergency, state laws give the governor a wide range of powers for the purpose of responding to the emergency. This was seen with the issuance by the Governor of an executive order on March 6, 2020 declaring a state of emergency due to the new corona virus outbreak. In June 2020, the Governor declared a state of emergency due to civil unrest. Between then and now, the Governor has extended and continued to issue executive orders

Updated as of 8/21/20: After the Utah Legislature refused to extend an expiring state of emergency for the COVID-19 pandemic, Gov. Herbert on Thursday, August 20, 2020, issued a new emergency declaration himself**.** The Governor also issued a series of executive orders replacing some, but not all of the prior orders. Since the legislature did not act, the Governor will need to renew the declaration every thirty days. A copy of the new declaration is attached as Attachment B.

Authority of local government

Emergency declaration authorities are interrelated. Local governments and health authorities also have authority to declare an emergency and activate emergency authorities within their jurisdiction. Utah Code Section 53, Part 2 authorizes the chief executive officer of a municipality or county to issue an emergency proclamation invoking the emergency powers and operations of the city or county. The Director of the State of Utah Department of Health has authority to issued public health orders under Utah Code 26-1-10, 26-1-30, and 26-6-3. Local health departments may issue public health orders under authority of Utah Code 26A-1-101 and 114.

II. Application of debt relief policy

Authority of the State Drinking Water Board to alter, amend, or extend loans under the State Revolving Loan Fund during a declared state of emergency

The federal Safe Drinking Water Act (Section 1452 "SDWA"), 42 U.S.C. § 300J-12 et seq., (40 CFR 35.3500) preserves for States a high degree of flexibility to operate their revolving fund programs in accordance with each State's unique needs and circumstances" provided it is within certain parameters to protect the fund. This assistance may be done by (1) adjusting interest rate loans down to zero, provided the recipient beginning annual repayment of principal and interest no later than one year after project completion; (2) loan repayment is completed no later than 20 years after project completion; and (3) the loan recipient establishes a dedicated source of revenue for repayment consistent with local ordinances and state laws; and for privately-owned systems that adequate security assures repayment of the sum. See 40 CFR § 35.3525(a). Therefore, the policy for loan restructuring within the above parameters would be allowed under the Safe Drinking Water Act.

Utah Code § 73-10C-5 and UAC R309-700

Utah Code § 73-10C-5 and the implementation rules, Utah Admin. Code R309-700, give the Board authority and direction on debt relief determinations under the State Revolving Fund. In determining priority for how to administer the State Revolving Loan Fund, the Board is guided by a list of factors set forth in UAC R309-700-5 to which there is a point system attached. Any debt relief policy based upon hardship due to a declared state of emergency should not jeopardize the factors originally considered in making a loan determination. Similarly, any debt relief policy should not jeopardize the financial evaluations of R309-700-13. If, for example, the impact of an emergency declaration is a need to extend the term (duration) of the loan, the Board needs to re-evaluate the impact of the extended term on the security of the loan.

At a minimum, the Board would need to make a finding that the original purpose of the loan was to protect public health and the environment. A subsequent (additional) finding would need to be made that any changes necessary to meet the "declared emergency" are consistent with protecting health and the environment.

SUMMARY

In summary, the Board would have authority to enact the general debt relief policy allowing for loan restructuring, provided the debt relief fits within the parameters of 40 CFR § 35.3525(a).

In administering the State Revolving Loan Fund, the Board must weigh its determinations against the factors set forth in UAC R309-700-5 to which there is a point system attached.

Any debt relief policy based upon hardship due to a declared state of emergency should not jeopardize the factors originally considered in making a loan determination. Similarly, any debt relief policy should not jeopardize the financial evaluations of R309-700-13.

A finding would need to be made by the Board that the original purpose of the loan was to protect public health and the environment. A subsequent (additional) finding would need to be made that any changes necessary to meet the "declared emergency" are consistent with protecting health and the environment.

ATTACHMENT A

Drinking Water Board Policy
Regarding Debt Relief Due to a Declared State of Emergency

Utah Code Title 19 Chapter 4, Title 73 Chapter 10c, and the Drinking Water State Revolving Fund provisions of the federal Safe Drinking Water Act, authorize the Drinking Water Board to provide financial assistance to drinking water systems for infrastructure improvement construction projects and allow the Board to restructure all or part of a recipient's liability to repay due to exigent circumstances.

During a declared state of emergency, and for 180 days following, the Drinking Water Board will accept requests from loan recipients to restructure their loans based on financial hardship. The Board reserves the right to extend or shorten this timeframe based on extenuating circumstances. Loan restructure requests may be granted based upon documentation of hardship due to a declared state of emergency. A written request, including associated documentation, must be submitted on the DWB Loan Restructuring Request Form and be signed by the borrower's presiding official. A borrower's governing body must approve a restructuring request. The Board does not assume any responsibility for the cost of the loan restructuring process.

The Board authorizes staff to review and grant requests for loan restructure due to financial hardship.

The Board authorizes staff to waive the delinquent interest charges for any late payments during the restructuring process.

The Board directs staff to prepare a written report for each Board meeting detailing the number of loan restructures requested, the number of loan restructure requests granted, the names of the borrowers approved for restructuring and the restructured loan amount.

ATTACHMENT B

Gary Richard Herbert

Governor

EXECUTIVE ORDER

2020-51

Declaring a State of Emergency due to the Ongoing COVID-19 Pandemic

WHEREAS, on March 6, 2020, I issued Executive Order 2020-1, declaring a state of emergency to facilitate the State's response to the novel coronavirus disease 2019 (COVID-19) pandemic;

WHEREAS, on March 13, 2020, Donald J. Trump, President of the United states, issued the Proclamation on Declaring a National Emergency Concerning the Novel Coronavirus Disease (COVID19) Outbreak;

WHEREAS, the state of emergency declared in Executive Order 2020-1 expires on this day, August 20, 2020;

WHEREAS, COVD-19 has been characterized by the World Health Organization as a worldwide pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), a virus that spreads easily from person to person and can cause serious illness or death;

WHEREAS, the Utah Department of Hea1th has reported 47, 157 cases of COVID-19 and 2,804 COVID-19-related hospitalizations as of August 1 9, 2020;

WHEREAS, the Utah Department of Hea1th has reported 369 COVID-19-re1ated deaths as of August 19, 2020;

WHEREAS, due to the valiant efforts of state and local officials and health authorities and of the public in responding to the COVID-19 pandemic, COVID-19-related cases are declining, and Utah has experienced a seven-day average of 341 COVID-19 cases and a seven-day rolling average of 7.3% testing positivity as of August 19, 2020;

WHEREAS, despite improving conditions in Utah, COVID-19 continues to spread and threaten public health and safety throughout the state;

WHEREAS, it is imperative that state and local officials and health authorities implement measures to protect the health and safety of students, educators, and families throughout the state as schools and institutions of higher education resume classes;

WHEREAS, the negative economic and social impacts of the COVID-19 pandemic continue to be felt throughout the state;

WHEREAS, COVID-19 is a new disease caused by a virus for which there is no existing vaccine;

WHEREAS, the COVID-19 pandemic requires cooperation by public health authorities, hospitals, and the general population to avoid overwhelming hospitals and causing the higher case fatality rates experienced by other countries and regions of the United States;

WHEREAS, scientific and medical knowledge concerning COVID-19 is incomplete and continues to evolve, requiring constant adaptation by elected officials and public health authorities to address the pandemic based on new information;

WHEREAS, Utah Code S 53-2a-206(1) provides that a state of emergency may be declared by executive order of the governor if the governor finds a "disaster" has occurred or the occurrence or threat of a disaster is imminent in any area of the state in which state government assistance is required to supplement the response and recovery efforts of the affected political subdivision or political subdivisions;

WHEREAS, Utah Code 53-2a-102(5) provides that a "disaster" is an event that causes, or threatens to cause, loss of life, human suffering, public or private property damage, or economic or social disruption resulting from "natural phenomena," among other things;

WHEREAS, Utah Code 53-2a-102(13) provides that "natural phenomena" include an "epidemic," among other things;

WHEREAS, I find that the effects of the COVID-19 pandemic and its continuing threat to public health and economic and social stability are emergency conditions sufficient to constitute a disaster within the intent of the Utah Code Title 53, Chapter 2a, Disaster Response and Recovery Act;

NOW, THEREFORE, 1, Gary R. Herbert, Governor of the State of Utah, declare a "State of Emergency" due to the aforesaid circumstances requiring aid, assistance, and relief available from State resources and hereby order:

1. the continued execution of the State Emergency Operations Plan;
2. assistance from State government to political subdivisions as needed and coordinated by the Utah Department of Health, the Utah Department of Public Safety, and other state agencies as necessary;
3. the continued dissemination of timely and accurate information by state agencies to the public that will mitigate the spread of COVID-19, prevent unnecessary confusion and alarm, and mitigate impacts to the economy;
4. the continued outreach and assistance to the populations most vulnerable to COVID-19; and
5. coordination with local authorities and the private sector to maximize access to appropriate medical care while preserving critical services for those most in need.

This Order shall take effect immediately upon the expiration or termination of Executive Order 2020-1 and shall remain in effect until September 19, 2020, unless extended by the Utah State Legislature, or earlier if I find the threat of danger has passed or reduced to the extent that emergency conditions no longer exist.

IN WITNESS WHEREOF, I have hereunto set my hand and caused to be affixed the Great Seal of the State of Utah. Done in Salt Lake City, Utah, on this, the 20th day of August, 2020.

Gary R. Herbert
Governor

ATTEST:

Spencer J. Cox

Spencer J. Cox
Lieutenant Governor

2020/051/EO

Agenda Item 6(D)(i)(a)

Axtell CSSD
Presented to the Drinking Water Board
September 1, 2020

DRINKING WATER BOARD
BOARD PACKET FOR PLANNING LOAN

APPLICANT'S REQUEST:

Axtell Community Special Service District (SSD) is requesting funding to assist with the planning and permitting needed to develop a secondary water source and connection to their existing culinary system. The District does not have a second water source as required by the rules for systems with more than 100 ERCs. The District will pursue funding from USDA-Rural Development for construction of a spring development and pipeline. However, several planning and permitting steps are required by USDA-RD prior to obtaining authorization, including a Preliminary Engineering Report, Environmental Report, Division of Wildlife Resources easement, and BLM easement.

The total amount of estimated funding needed for planning is $133,000. The District is requesting $103,000 from the Drinking Water Board and a $30,000 grant from USDA-Rural Development.

STAFF COMMENTS:

The local MAGI for Axtell is $47,200, which is 98% of the State MAGI and the current average water bill is $56.13/ERC, which is 1.43% of the local MAGI. Their after project water bill at a full loan would increase to $60.80/ERC or 1.55% of the local MAGI. The following options were evaluated:

	Total Funding	Grant	Loan	Term	Interest Rate	Water Bill	% Local MAGI
Option 1	$103,000	$0	$103,000	20 yrs	*2.63%	$61.12	1.55%
Option 2	$103,000	$0	$103,000	20 yrs	2.0%	$60.80	1.55%
Option 3	$103,000	$0	$103,000	20 yrs	1.5%	$60.55	1.54%
Option 4	$103,000	$0	$103,000	20 yrs	0%	$59.84	1.52%

* The current Market Rate (RBBI)

FINANCIAL ASSISTANCE COMMITTEE RECOMMENDATION:

The Drinking Water Board authorize a loan of $103,000 at 2.0% interest for 20 years to the Axtell Community Special Service District.

APPLICANT'S LOCATION:

Axtell Community SSD is located in Sanpete County, 7 miles south of Gunnison.

MAP OF APPLICANT'S LOCATION:

PROJECT DESCRIPTION:

Axtell Community SSD commissioned a Water System Feasibility Study to evaluate the capacity of the system under current and projected system demands. Of particular concern to the District is the system's reliance on a single source (spring), which is shared with the Willow Creek Irrigation Company. On dry years, the culinary system uses a disproportionate amount of the spring flows, leaving the irrigation company with a water shortage situation. The feasibility study identified that, while the full spring flow is adequate to meet the District's needs, it cannot do so while also meeting the irrigation company's needs. The irrigation company is the entity that holds the water rights to the spring flows, and the culinary system utilizes the water as a shareholder in the irrigation company. The District does not currently have a backup or second water source as required by the rules for systems with more than 100 ERCs.

As part of the feasibility study, a hydrogeological assessment was also performed, which indicated a low probability of finding acceptable groundwater near the ACSSD service area due to the salinity of the groundwater. However, the District identified a spring, which may be a potential source for the District. The spring is located in Pole Canyon, approximately five miles to the east of the District's current source (Michaelson Spring). Pole Canyon Spring is located on land owned by the Utah Division of Wildlife Resources, and a potential spring pipeline would traverse BLM land before arriving at a potential tie-in location near the Michaelson Spring. The spring falls within the Willow Creek Irrigation Company's water rights and the irrigation company is supportive of the efforts to develop the spring to help alleviate the demand on the Michaelson Spring.

The District intends to pursue funding from USDA-Rural Development for the actual construction of the spring development and pipeline.

POPULATION GROWTH:

Projected population and number of connections for the Axtell CSSD service area is based on a 0.37% growth rate estimated by the District. The GOMB estimates a 0.90% growth rate for Sanpete County over the next 20 years:

Year	Population	Connections
2020	260	115
2030	270	117
2040	280	119

IMPLEMENTATION SCHEDULE:

DWB Authorization	September 2020
Completed Engineering Report	June 2021

COST ESTIMATE:

Legal/Bonding	$5,000
Project Administration	$15,500
DWR Special Use Permit	$10,000
Environmental Clearances	$71,500
Exploratory Excavation	$10,000
Preliminary Engineering Report	$20,000
DDW Loan Origination Fee	$1,000
Total Project Cost	**$133,000**

COST ALLOCATION:

The anticipated cost allocation for the project is shown below.

Funding Source	Cost Sharing	Percent of Project
DWB Loan (1.96%, 20-yrs)	$103,000	77%
USDA Grant	$30,000	23%
Total Amount	$133,000	100%

IPS SUMMARY:

Code	Description	Physical Facilities	Quality & Monitoring	Significant Deficiency Violations
TD01	CONTINUOUS DISINFECTION IS REQUIRED BUT CHLORINATOR LACKS AUTOMATIC SWITCHOVER	15		
SP04	ACTIVE SOURCE LACKS APPROVED UPDATES TO DWSP PLAN	5		
71	07/01/2015 CCR REPORT		15	
71	07/01/2020 CCR REPORT		15	
	Total = 50	**20**	**30**	

APPLICANT:	Axtell Community SSD 285 W Center Axtell, UT 84621 Telephone: (435) 979-2154
PRESIDING OFFICIAL & CONTACT PERSON:	Travis Blackburn Board President P.O. Box 21093 Axtell, UT 84621 Telephone: (435) 979-2154 travisaqha@yahoo.com
CONSULTING ENGINEER:	Jesse Ralphs Sunrise Engineering 25 E 500 N Fillmore, UT 84631 (435) 743-6151 jralphs@sunrise-eng.com
TREASURER/RECORDER:	Sharon Mecham Telephone: (435) 896-7968 Sharon.mecham@yahoo.com

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Axtell CSSD
COUNTY: Sanpete
PROJECT DESCRIPTION: Planning for a secondary water source

FUNDING SOURCE: State SRF

100 % Loan & 0 % Grant

ESTIMATED POPULATION:	260	NO. OF CONNECTIONS:	115 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	$56.13 *			PROJECT TOTAL:	$133,000
CURRENT % OF AGI:	1.43%	FINANCIAL PTS:	37	LOAN AMOUNT:	$103,000
ESTIMATED MEDIAN AGI:	$47,200			GRANT AMOUNT:	$0
STATE AGI:	$48,000			TOTAL REQUEST:	$103,000
SYSTEM % OF STATE AGI:	98%				

	@ ZERO % RATE 0%	@ RBBI MKT RATE 2.63%	EQUIVALENT ANNUAL PAYMENT 2.00% **	AFTER REPAYMENT PENALTY & POINTS 2.00%
SYSTEM				
ASSUMED LENGTH OF DEBT, YRS:	20	20	20	20
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	2.63%	2.00%	2.00%
REQUIRED DEBT SERVICE:	$5,150.00	$6,688.56	$6,299.14	$6,299.14
*PARTIAL COVERAGE (15%):	$0.00	$0.00	$0.00	$0.00
*ADD. COVERAGE AND RESERVE (10%):	$515.00	$668.86	$629.91	$629.91
ANNUAL NEW DEBT PER CONNECTION:	$49.26	$63.98	$60.25	$60.25
O & M + FUNDED DEPRECIATION:	$31,382.00	$31,382.00	$31,382.00	$31,382.00
OTHER DEBT + COVERAGE:	$29,750.00	$29,750.00	$29,750.00	$29,750.00
REPLACEMENT RESERVE ACCOUNT:	$3,016.60	$3,093.53	$3,074.06	$3,074.06
ANNUAL EXPENSES PER CONNECTION:	$557.81	$558.48	$558.31	$558.31
TOTAL SYSTEM EXPENSES	$69,813.60	$71,582.95	$64,206.06	$71,135.11
TAX REVENUE:	$0.00	$0.00		$0.00
RESIDENCE				
MONTHLY NEEDED WATER BILL:	$59.84	$61.12	$60.80	$60.80
% OF ADJUSTED GROSS INCOME:	1.52%	1.55%	1.55%	1.55%

Agenda Item 6(D)(i)(b)

Bear River Water Conservancy District
Presented to the Drinking Water Board
September 1, 2020

DRINKING WATER BOARD
BOARD PACKET FOR CONSTRUCTION LOAN

APPLICANT'S REQUEST:

Bear River Water Conservancy District has a project consisting of 2 test wells for the Harper Ward Project. The cost of the project is estimated at $402,010. Bear River Water Conservancy District will be contributing $201,005 towards the project. The request from the Drinking Water Board is $201,005.

STAFF COMMENTS:

The local MAGI for Bear River WCD is approximately $45,000 (98% of the state MAGI), the after project water bill would $71.39, which is 1.90% of the local MAGI. With the water bill amount being over the recommended 1.75% of the local MAGI, they do qualify to receive additional subsidy.

	Option#	Loan	%/fee	P.F.	% of local MAGI	Water bill
1	Base	$201,005	3.58%	$0	1.90%	$71.39
2	0%	$201,005	0%	$0	1.87%	$69.98
3	70/30	$141,000	0%	$60,005	1.79%	$67.19

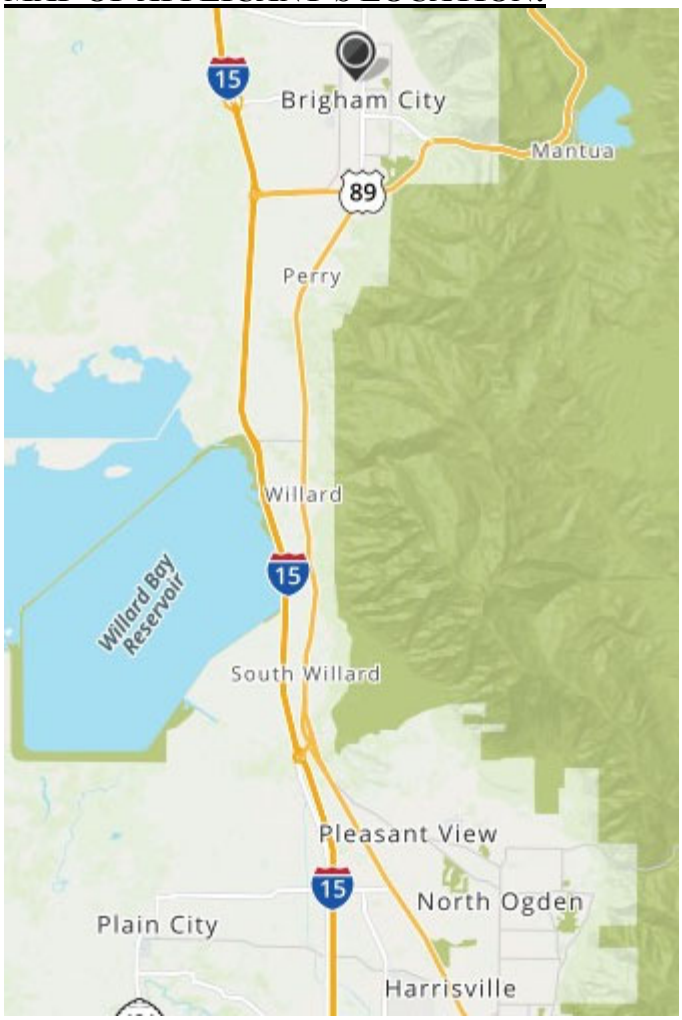
FINANCIAL ASSISTANCE COMMITTEE RECOMMENDATION:

The Drinking Water Board authorize a loan of $141,000 and a grant of $60,005 to Bear River WCD at 0% interest for 20 years.

APPLICANT'S LOCATION:

Bear River WCD is located in Box Elder County approximately 25 miles North of Ogden.

MAP OF APPLICANT'S LOCATION:



PROJECT DESCRIPTION:

Bear River Water Conservancy District has a project consisting of 2 test wells to find water for the Harper Ward project. Harper Ward does not have their own source and currently purchases water from Brigham City..

POPULATION GROWTH:

Projected populations and number of connections are shown in the table below:

Year	Population	Connections
2020	350	103
2030	385	113
2040	423	124

IMPLEMENTATION SCHEDULE:

FA Committee Conference Call:	July 2020
DWB Funding Authorization:	Sep 2020
Begin Construction:	Oct 2020
Complete Construction:	Nov 2020

COST ESTIMATE:

Test Well	$402,010
Total Project Cost	**$402,010**

COST ALLOCATION:

The cost allocation proposed for the project is shown below:

Funding Source	Cost Sharing	Percent of Project
DWB Loan	$141,000	35%
DWB Grant	$60,005	15%
System contribution	$201,005	50%
Total	$402,010	100%

IPS SUMMARY:

Code	Description	Physical Facilities	Quality & Monitoring	Significant Deficiency Violations
	Total = -0			

CONTACT INFORMATION:

APPLICANT:	Bear River WCD 102 West Forest Street Brigham City, UT 84302 435-723-7034
PRESIDING OFFICIAL & CONTACT PERSON:	Carl Mackley General Manager 102 West Forest Street Brigham City, UT 84302 435-723-7034 carlm@brwcd.com
RECORDER:	Charles Holmgren 435-279-3303
ENGINEER:	William Bigelow Hansen, Allen & Luce 859 W. South Jordan Parkway, ste 200 South Jordan, UT 84095 801-566-5599 bbigelow@hansenallenluce.com

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Bear River WCD
COUNTY: Box Elder
PROJECT DESCRIPTION: 2 test wells

FUNDING SOURCE: State SRF

70 % Loan & 30 % Grant

ESTIMATED POPULATION:	350	NO. OF CONNECTIONS:	103 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	$231.90 *			PROJECT TOTAL:	$402,010
CURRENT % OF AGI:	6.18%	FINANCIAL PTS:	70	LOAN AMOUNT:	$141,000
ESTIMATED MEDIAN AGI:	$45,000			GRANT AMOUNT:	$60,005
STATE AGI:	$45,895			TOTAL REQUEST:	$201,005
SYSTEM % OF STATE AGI:	98%				

	@ ZERO % RATE	@ RBBI MKT RATE		AFTER REPAYMENT PENALTY & POINTS
	0%	2.63%		0.00%
SYSTEM				
ASSUMED LENGTH OF DEBT, YRS:	20	20		20
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	2.63%		0.00%
REQUIRED DEBT SERVICE:	$7,050.00	$9,156.19		$7,050.00
*PARTIAL COVERAGE (15%):	$0.00	$0.00		$0.00
*ADD. COVERAGE AND RESERVE (10%):	$705.00	$915.62		$705.00
ANNUAL NEW DEBT PER CONNECTION:	$75.29	$97.78		$75.29
O & M + FUNDED DEPRECIATION:	$20,612.00	$20,612.00		$20,612.00
OTHER DEBT + COVERAGE:	$51,250.00	$51,250.00		$51,250.00
REPLACEMENT RESERVE ACCOUNT:	$3,433.10	$3,538.41		$3,433.10
ANNUAL EXPENSES PER CONNECTION:	$731.02	$732.04		$731.02
TOTAL SYSTEM EXPENSES	$83,050.10	$85,472.21		$83,050.10
TAX REVENUE:	$216,667.00	$216,667.00		$216,667.00
RESIDENCE				
MONTHLY NEEDED WATER BILL:	$67.19	$69.15		$67.19
% OF ADJUSTED GROSS INCOME:	1.79%	1.84%		1.79%

* Equivalent Residential Connections

Agenda Item 6(D)(i)(c)

Caineville Special Service District
Presented to the Drinking Water Board
September 1, 2020

DRINKING WATER BOARD
BOARD PACKET FOR CONSTRUCTION LOAN

APPLICANT'S REQUEST:

Caineville Special Service District has a project consisting of a treatment facility, fire hydrants and tank upgrades. The cost of the project is estimated at $600,000 and Caineville SSD is contributing $5,000 towards the project.

STAFF COMMENTS:

There is no information for Caineville SSD's MAGI because it is not part of a town or municipality. Staff considered two different methods to determine whether Caineville SSD qualifies for additional subsidy.

First, staff used the MAGI for the neighboring town of Hanksville, which closely approximates Caineville's economic conditions. Hanksville's MAGI is $21,800, or 45% of the State MAGI. At full loan the estimated after project water bill will be $156.15 per month per connection, which is 8.60% of the local MAGI.

Second, staff considered the MAGI for Caineville's ZIP code, which is $34,800 or 72.5% of the State MAGI. Under this scenario, the estimated after project water bill at full loan will be 5.39% of the local MAGI.

In either case, Caineville SSD qualifies as a hardship community and is eligible to receive additional subsidy.

Figures in the table below are based on Hanksville's MAGI.

Option #	Description	Repayable Loan Amount	Interest Rate	Term	Principal Forgiveness	Monthly Water Rate	% Local MAGI
1	Full Loan	$ 595,000	2.05%	30 yrs	0	$156.15	8.60%
2	50/50	$295,000	**0.00%**	**30 yrs**	**$300,000**	**$68.04**	**3.75%**

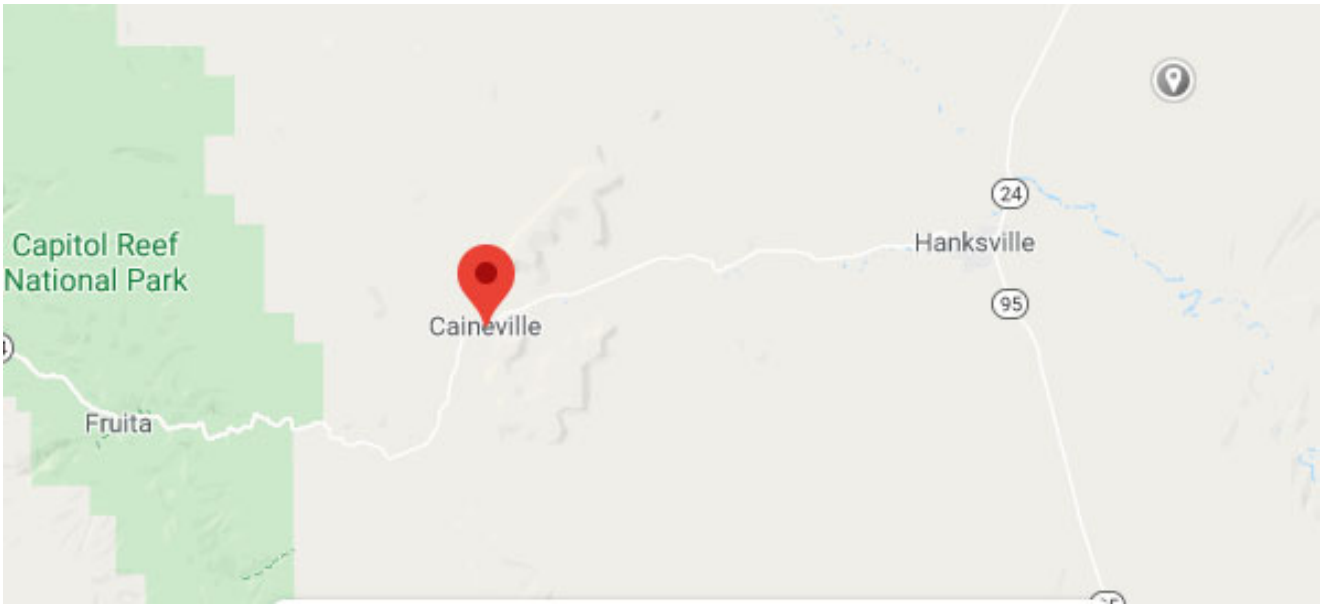
FINANCIAL ASSISTANCE COMMITTEE RECOMMENDATION:

The Drinking Water Board authorize a loan of $295,000 at 0.00% interest for 30 years and a grant of $300,000, to the Caineville SSD. Conditions include they resolve any deficiencies on their IPS report and implement a rate structure for the water system.

APPLICANT'S LOCATION:

Caineville SSD is located in Wayne County 18 miles West of Hanksville.

MAP OF APPLICANT'S LOCATION:



PROJECT DESCRIPTION:

Caineville Special Service District has a project consisting of a treatment facility, fire hydrants and tank upgrades. A Master Plan was completed within the past year and the treatment facility is graded as the highest priority for the system.

The Master Plan also included water management options to encourage conservation and discussed ways to better utilize the sources supplying the system.

Most of the connections in the system are residential and each residential connection consists of 1 ERC, except one connection that uses more water and has been assigned 2 ERC's. The commercial connection is a hotel and the amount of ERC's associated with the hotel is 6.5 ERC's for a total of 26.5 ERC's for the system.

COST ESTIMATE:

Legal/Bonding/Admin	$ 15,000
Environmental	$ 10,000
Engineering – CMS	$ 65,000
Construction	$ 490,000
Contingency (~ 10%)	$ 20,000
Total	**$600,000**

COST ALLOCATION:

The cost allocation proposed for the project is shown below:

Funding Source	Cost Sharing	Percent of Project
DWB Loan	$295,000	49%
DWB principal forgiveness	$300,000	50%
Recipient contribution	$5,000	1%
Total	$600,000	100%

IMPLEMENTATION SCHEDULE:

FA Committee Conference Call:	July 2020
DWB Funding Authorization:	September 2020
Complete Design:	December 2020
Plan Approval:	January 2021
Advertise for Bids:	February 2021
Begin Construction:	May 2021
Complete Construction:	October 2021

IPS SUMMARY:

Code	Description	Physical Facilities	Quality & Monitoring	Significant Deficiency Violations
S024	NO CHECK VALVE ON WELL DISCHARGE PIPING	5		
	Total = -5	5	0	0

CONTACT INFORMATION:

APPLICANT:	Caineville Special Service District PO Box 150 Caineville, UT 84775 435-691-1771 johndoylejackson@gmail.com
PRESIDING OFFICIAL & CONTACT PERSON:	John Jackson General manager PO Box 150 Caineville, UT 84775 435-691-1771 johndoylejackson@gmail.com
CONSULTING ENGINEER:	Kelly Chappell Ensign Engineering 225 North 100 East Richfield, UT 84701 435-896-2983 kchappell@ensignutah.com
RECORDER:	Randy Ramsley 435-456-9146 mesafarm@mesafarmmarket.com

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Caineville
COUNTY: Wayne
PROJECT DESCRIPTION: Tmnt facility, hydrants, valves, tank upgrades

FUNDING SOURCE: State SRF

50 % Loan & 50 % Grant

ESTIMATED POPULATION:	25	NO. OF CONNECTIONS:	20 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	$23.50 *			PROJECT TOTAL:	$600,000
CURRENT % OF AGI:	1.29%	FINANCIAL PTS:	41	LOAN AMOUNT:	$295,000
ESTIMATED MEDIAN AGI:	$21,800			GRANT AMOUNT:	$300,000
STATE AGI:	$48,000			TOTAL REQUEST:	$595,000
SYSTEM % OF STATE AGI:	45%				

	@ ZERO % RATE	@ RBBI MKT RATE		AFTER REPAYMENT PENALTY & POINTS
	0%	2.63%		0.00%
SYSTEM				
ASSUMED LENGTH OF DEBT, YRS:	30	30		30
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	2.63%		0.00%
REQUIRED DEBT SERVICE:	$9,833.33	$14,339.84		$9,833.33
*PARTIAL COVERAGE (15%):	$1,475.00	$2,150.98		$1,475.00
*ADD. COVERAGE AND RESERVE (10%):	$983.33	$1,433.98		$983.33
ANNUAL NEW DEBT PER CONNECTION:	$614.58	$896.24		$614.58
O & M + FUNDED DEPRECIATION:	$4,038.00	$4,038.00		$4,038.00
OTHER DEBT + COVERAGE:	$0.00	$0.00		$0.00
REPLACEMENT RESERVE ACCOUNT:	$0.00	$0.00		$0.00
ANNUAL EXPENSES PER CONNECTION:	$201.90	$201.90		$201.90
TOTAL SYSTEM EXPENSES	$16,329.67	$21,962.80		$16,329.67
TAX REVENUE:	$0.00	$0.00		$0.00
RESIDENCE				
MONTHLY NEEDED WATER BILL:	$68.04	$91.51		$68.04
% OF ADJUSTED GROSS INCOME:	3.75%	5.04%		3.75%

$0.00

Agenda Item 6(D)(ii)(a)

Provo City
Presented to the Drinking Water Board
September 1, 2020

DRINKING WATER BOARD
BOARD PACKET FOR CONSTRUCTION LOAN

APPLICANT'S REQUEST:

Provo City is requesting funding to construct two pump stations and a pipeline running east from the Provo River to Rock Canyon. The first pump station will be located on the Provo River and the second pump station will be located along the Timpanogos Canal. Water will be pumped from these two sources to Rock Canyon for aquifer storage and recovery. They scored 12.9 points on the Project Priority List.

The total estimated cost of the project is $18,020,000. The City is contributing $2,581,500. They have applied for a $750,000 WaterSMART grant from the Bureau of Reclamation and a loan from Board of Water Resources. BWR indicates they are able to loan $7,300,000 at 1.0% for 20 years. The remaining amount Provo is requesting from the Drinking Water Board is **$7,388,000**.

STAFF COMMENTS:

The local MAGI for Provo is $31,600, which is 66% of the State MAGI and the current average water bill is $39.99/ERC. If DWB funded the entire $18M project at full loan, the city's after project water bill would be $31.30/ERC, which is 1.19% of the local MAGI. The after project water bill for a $7.38M full loan is $29.73/ERC or 1.13% of their local MAGI. Based on the system's % of State MAGI, Provo City qualifies to be considered for additional subsidy.

The following options were evaluated:

	Total Funding	Grant	Loan	Term	Interest Rate	Water Bill	% Local MAGI
Option 1	$7,388,000	$0	$7,388,000	20 yrs	1.69%	$29.73	1.13%
Option 2	$7,388,000	$0	$7,388,000	20 yrs	1.0%	$29.64	1.13%
Option3	$7,388,000	$738,000	$6,650,000	20 yrs	1.0%	$29.51	1.12%

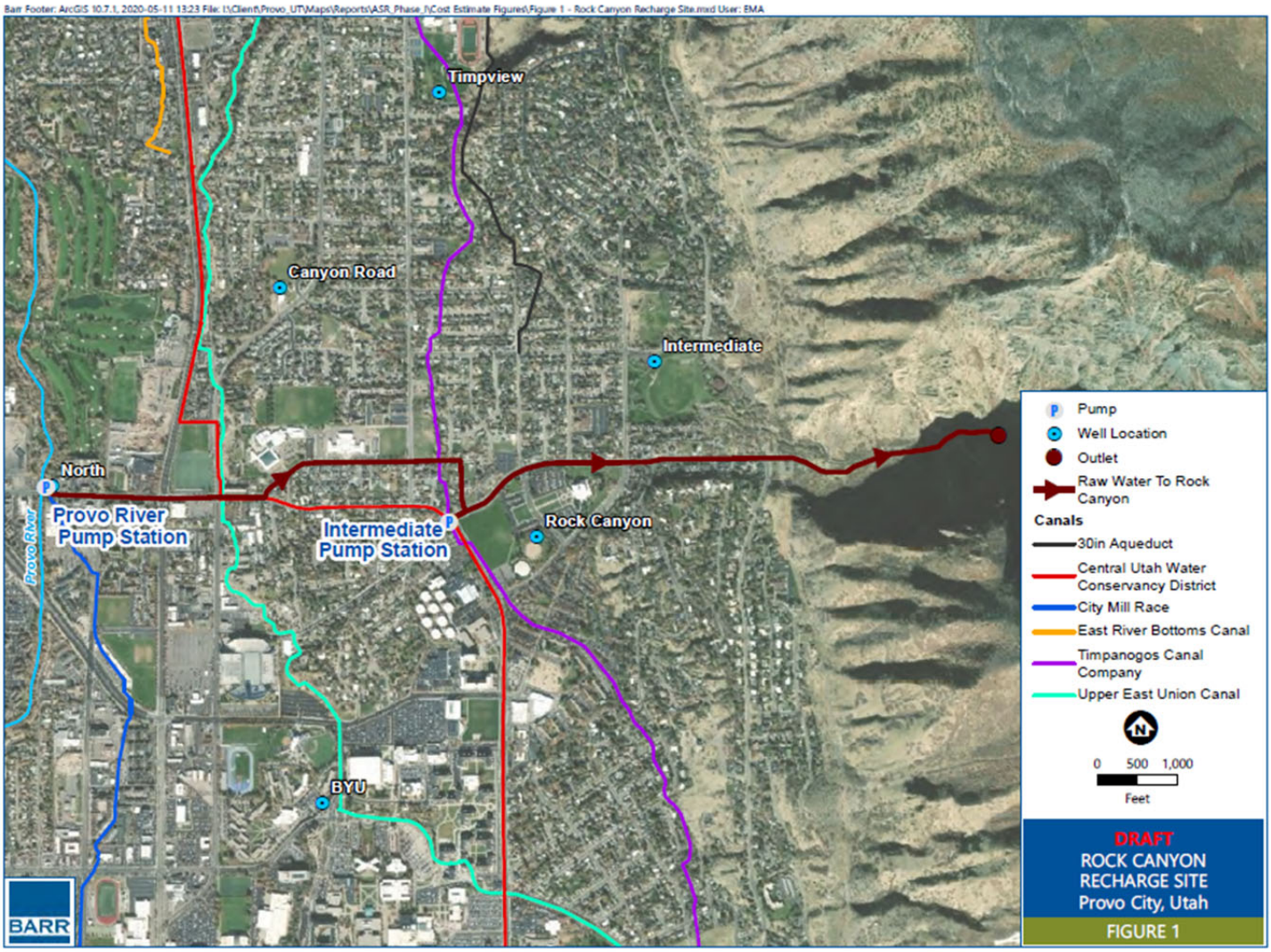
FINANCIAL ASSISTANCE COMMITTEE RECOMMENDATION:

The Drinking Water Board authorize a loan of $7,388,000 at 1.0% interest for 20 years to Provo City. Conditions include that they resolve all issues on their compliance report.

APPLICANT'S LOCATION:

Provo City is located in Utah County and provides water to 29,435 equivalent residential connections.

MAP OF APPLICANT'S PROJECT:



PROJECT DESCRIPTION:

Provo, along with much of the Wasatch Front is experiencing rapid population growth. With population growth comes an increase in water demand and a need to secure a long term sustainable water supply. During this time of growth, the aquifers beneath Provo, which are a key part of its water supply, have been declining for decades and have increased the impact of drought on the city. These conditions have led to the focus of implementing aquifer storage and recovery projects to provide drought resiliency and secure a long term regional groundwater supply. This project is the first of many that Provo aims to implement to achieve these goals.

POPULATION GROWTH:

Projected population and number of connections for Provo City is based on a 1.33% growth rate estimated by city:

Year	Population	Connections
2020	116,713	19,607
2030	138,905	23,336
2040	151,879	25,516

IMPLEMENTATION SCHEDULE:

DWB Authorization	September 2020
Complete Design	November 2020
DDW Plan Approval	December 2020
Advertise for Bids	January 2021
Loan Closing	February 2021
Begin Construction	March 2021
Complete Construction	September 2021

COST ESTIMATE:

Legal/Bonding	$60,000	
Environmental Study	$140,000	
Engineering – Design and CMS	$2,480,000	*= 13.76%*
Construction – Transmission Line	$6,430,000	
Construction – Pump Stations	$5,390,000	
Construction – Electrical upgrades, SCADA, traffic control	$900,000	
Land Acquisition	$600,000	
Contingency	$2,020,000	
DDW Loan Origination Fee	*waived*	
Total Project Cost	**$18,020,000**	

COST ALLOCATION:

The anticipated cost allocation for the project is shown below.

Funding Source	Cost Sharing	Percent of Project
Local Contribution	$2,581,500	14%
DWB Loan (1%, 20 yrs)	$7,388,000	41%
BWR Loan (1%, 20 yrs)	$7,300,000	41%
BOR Grant	$750,000	4%
Total Amount	$18,020,000	100%

IPS SUMMARY:

Code	Description	Physical Facilities	Quality & Monitoring	Significant Deficiency Violations
TP011	CHLORINE ROOM AIR INLET NOT LOCATED NEAR CEILING THROUGH WALL LOUVERS (Provo Canyon Chlorinator)	15		
S024	NO CHECK VALVE ON WELL DISCHARGE PIPING (Rock Canyon Well)	5		
S001	UNAPPROVED SOURCE IN SERVICE (Big Springs)*			200
	Total = 220	**20**		**200**

* The water system is required to measure and record the spring flow data once a month for a minimum of three years, or each month the spring is reasonable accessible for a minimum of three years. The spring flow data must be submitted to the Division for spring yield evaluation by 5/1/2020. This deficiency becomes effective if the water system fails to submit the 3-year monthly spring flow data and obtain a permanent operating permit for Big Springs (WS041) by 5/1/2020. File #9545

APPLICANT:	Provo City Water Resources 1377 S 350 E Provo, UT 84606 Telephone: (801) 852-6773 sjones@provo.utah.gov
PRESIDING OFFICIAL or CONTACT PERSON:	Dave Decker Public Works Director 1377 S 350 E Provo, UT 84606 Telephone: (801) 852-6771 ddecker@provo.utah.gov
CONSULTING ENGINEER:	Jeff Davis Barr Engineering Co. 170 S Main St Salt Lake City, UT 84101 (801) 333-8420 Jdavis@barr.com
BOND ATTORNEY	Eric Hunter Chapman and Cutler LLP 215 S State Street Salt Lake City, UT 84111 (801) 536-1441 ehunter@chapman.com
TREASURER/RECORDER:	Amanda Ercanbrack Telephone: (801) 852-6524 Aercanbrack@provo.org

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Provo City
COUNTY: Utah
PROJECT DESCRIPTION: 2 pump stations and pipeline for aquifer storage and recovery

FUNDING SOURCE: Federal SRF

90 % Loan & 10 % P.F.

ESTIMATED POPULATION:	116,713	NO. OF CONNECTIONS:	29435 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	$39.99 *			PROJECT TOTAL:	$18,020,000
CURRENT % OF AGI:	1.52%	FINANCIAL PTS:	47	LOAN AMOUNT:	$6,650,500
ESTIMATED MEDIAN AGI:	$31,600			PRINC. FORGIVE.:	$738,000
STATE AGI:	$48,000			TOTAL REQUEST:	$7,388,500
SYSTEM % OF STATE AGI:	66%				

	@ ZERO % RATE	@ RBBI MKT RATE		AFTER REPAYMENT PENALTY & POINTS
	0%	2.63%		1.00%
SYSTEM				
ASSUMED LENGTH OF DEBT, YRS:	20	20		20
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	2.63%		1.00%
REQUIRED DEBT SERVICE:	$332,525.00	$431,866.80		$368,539.55
*PARTIAL COVERAGE (15%):	$0.00	$0.00		$0.00
*ADD. COVERAGE AND RESERVE (10%):	$33,252.50	$43,186.68		$36,853.96
ANNUAL NEW DEBT PER CONNECTION:	$12.43	$16.14		$13.77
O & M + FUNDED DEPRECIATION:	$8,353,146.00	$8,353,146.00		$8,353,146.00
OTHER DEBT + COVERAGE:	$983,781.25	$983,781.25		$983,781.25
REPLACEMENT RESERVE ACCOUNT:	$584,252.60	$589,219.69		$586,053.33
ANNUAL EXPENSES PER CONNECTION:	$337.05	$337.22		$337.12
TOTAL SYSTEM EXPENSES	$10,286,957.35	$10,401,200.42		$10,328,374.08
TAX REVENUE:	$0.00	$0.00		$0.00
RESIDENCE				
MONTHLY NEEDED WATER BILL:	$29.39	$29.71		$29.51
% OF ADJUSTED GROSS INCOME:	1.12%	1.13%		1.12%

$0.00

Agenda Item 6(D)(ii)(b)

Wilson Arch West
Presented to the Drinking Water Board
September 1, 2020

DRINKING WATER BOARD
BOARD PACKET FOR CONSTRUCTION ASSISTANCE

APPLICANT'S REQUEST:

Wilson Arch Water & Sewer Company is requesting funding to upgrade their distribution pumps, motors, and controller for the west side system. This project scored 43.5 points on the Project Priority List.

The total amount of funding needed is $58,800. The water company will be contributing $800 as in-kind labor towards the project. The amount they are requesting from the Drinking Water Board is **$58,000**.

STAFF COMMENTS:

The local MAGI for the Wilson Arch community is $35,700, which is 74% of the State MAGI. The system provides water to 18 ERC and the current average water bill is $83.22/ERC, which is 2.8% of the local MAGI. The estimated after project water bill at full loan would be $97.06/ERC or 3.26% of the local MAGI. Based on MAGI and average monthly water bill, Wilson Arch qualifies to be considered for additional subsidy.

The following options were evaluated:

	Total Funding	Principal Forgiveness	Loan	Term	Interest Rate	Water Bill	% Local MAGI
Option 1	$58,000	$0	$58,000	20 yrs	1.98%	$96.99	3.26%
Option 2	$58,000	$0	$58,000	20 yrs	0%	$93.58	3.15%
Option 3	$58,000	$18,000	$40,000	20 yrs	0%	$91.14	3.06%
Option 4	$58,000	$58,000	$0	-	-	$78.14	2.63%

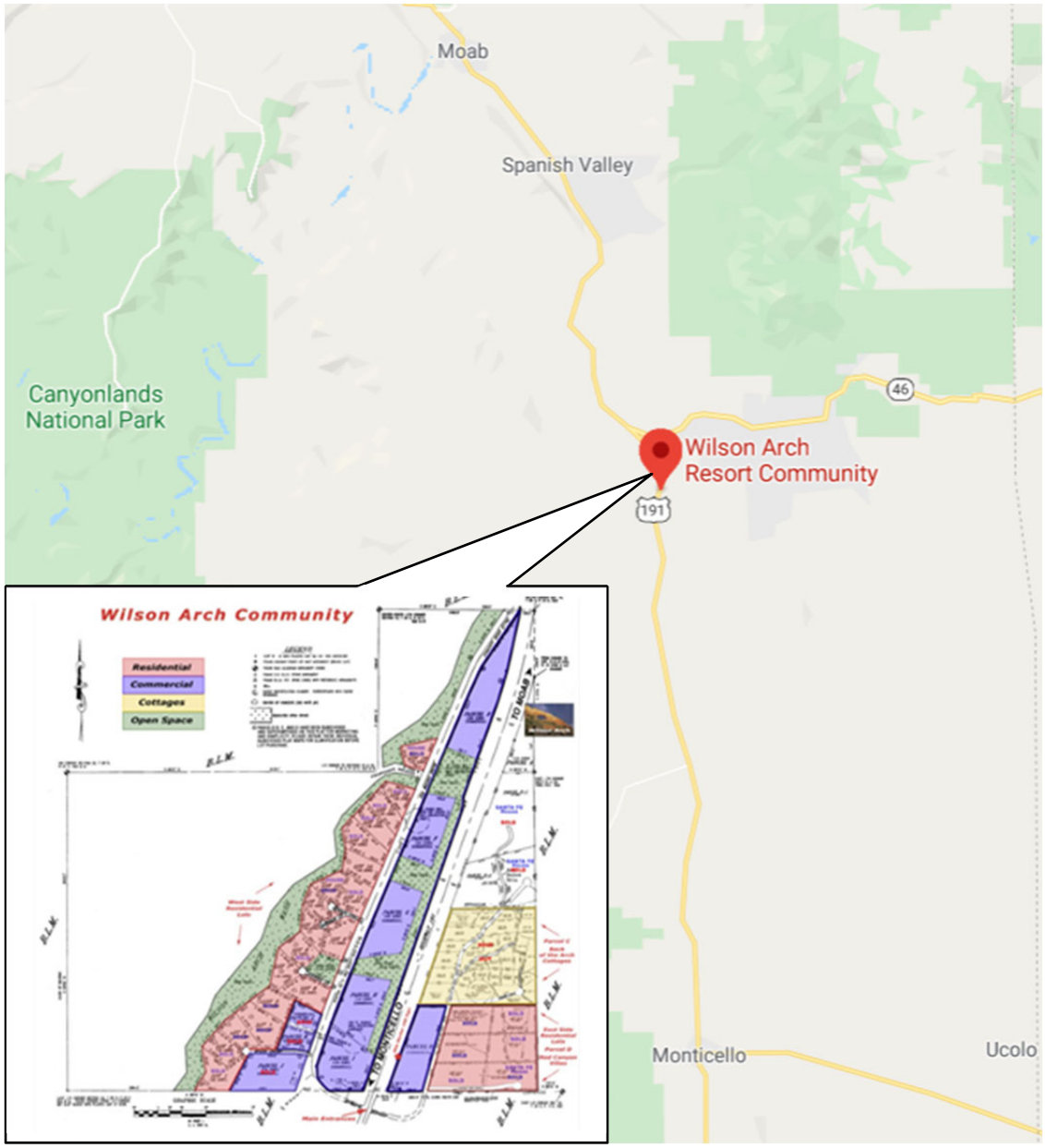
STAFF RECOMMENDATION:

The Drinking Water Board authorize $58,000 in Principal Forgiveness to Wilson Arch Water & Sewer Company.

APPLICANT'S LOCATION:

Wilson Arch Water & Sewer Company is a private company that owns and operates the water infrastructure in the Wilson Arch Resort Community in San Juan County. The water system is bisected by US Highway 191

MAP OF APPLICANT'S PROJECT:



PROJECT DESCRIPTION:

The Wilson Arch West Side Pump Facility is currently in use but not approved and the water company is taking steps to meet DDW requirements in order to obtain an operating permit. During a recent service call, a technician determined the current controller is maxed on its load capacity and cannot be expanded. The technician also noticed that the second storage tank/distribution pump was failing and recommended it be replaced before a failure could possibly contaminate the water supply. A third issue discovered was that the two well pumps are not automatically switching on and off when water demand is called for and staff have to manually turn pumps on and off. Upgrading the distribution pumps will increase and stabilize system pressure and allow for a 4th provisional well to be added to the system when needed. A new controller will automate well pump activation when demand is called for and allow for 24-hour remote monitoring of the west side system.

POPULATION GROWTH:

Projected population growth is based on estimates provided by the water company:

Year	Population
2020	9
2030	19
2040	25

IMPLEMENTATION SCHEDULE:

DWB Authorization	September 2020
DDW Plan Approval	September 2020
Complete Construction	September 2020

COST ESTIMATE:

Engineering – Design, Permit, CMS	$15,000
Construction	$39,800
Contingency (10%)	$4,000
Total Project Cost	**$58,800**

COST ALLOCATION:

Funding Source	Cost Sharing	Percent of Project
Local Contribution (in-kind)	$800	1%
DWB Grant	$58,000	99%
Total Amount	$58,800	100%

APPLICANT:	Wilson Arch Water & Sewer Company PO Box 906 Moab, UT 84532 Telephone: (435) 686-2306 twistedtreeartgallery@gmail.com
PRESIDING OFFICIAL or CONTACT PERSON:	Philip V. Glaze Board of Director PO Box 906 Moab, UT 84532 Telephone: (435) 686-2306
CONSULTING ENGINEER:	Daniel Hawley Jones & DeMille Engineering 1535 South 100 West Richfield, UT 84701 (435) 896-8266 daniel.h@jonesanddemille.com
TREASURER/RECORDER:	Dawn Howe Telephone: (435) 686-2306 twistedtreeartgallery@gmail.com
SYSTEM ATTORNEY	Christina Sloan The Sloan Law Firm 76 S Main Street, Ste 1 Moab, UT 84532 (435) 259-9940 sloan@thesloanlawfirm.com

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Wilson Arch West
COUNTY: San Juan
PROJECT DESCRIPTION: Upgrade pumps, motors, controllers

FUNDING SOURCE: Federal SRF

0 % Loan & 100 % P.F.

ESTIMATED POPULATION:	9	NO. OF CONNECTIONS:	18 *	SYSTEM RATING:	INACTIVE
CURRENT AVG WATER BILL:	$83.22 *			PROJECT TOTAL:	$58,800
CURRENT % OF AGI:	2.80%	FINANCIAL PTS:	36	LOAN AMOUNT:	$0
ESTIMATED MEDIAN AGI:	$35,700			PRINC. FORGIVE.:	$58,000
STATE AGI:	$48,000			TOTAL REQUEST:	$58,000
SYSTEM % OF STATE AGI:	74%				

	@ ZERO % RATE	@ RBBI MKT RATE		AFTER REPAYMENT PENALTY & POINTS
	0%	2.63%		1.98%
SYSTEM				
ASSUMED LENGTH OF DEBT, YRS:	20	20		20
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	2.63%		1.98%
REQUIRED DEBT SERVICE:	$0.00	$0.00		$0.00
*PARTIAL COVERAGE (15%):	$0.00	$0.00		$0.00
*ADD. COVERAGE AND RESERVE (10%):	$0.00	$0.00		$0.00
ANNUAL NEW DEBT PER CONNECTION:	$0.00	$0.00		$0.00
O & M + FUNDED DEPRECIATION:	$16,075.00	$16,075.00		$16,075.00
OTHER DEBT + COVERAGE:	$0.00	$0.00		$0.00
REPLACEMENT RESERVE ACCOUNT:	$803.75	$803.75		$803.75
ANNUAL EXPENSES PER CONNECTION:	$937.71	$937.71		$937.71
TOTAL SYSTEM EXPENSES	$16,878.75	$16,878.75		$16,878.75
TAX REVENUE:	$0.00	$0.00		$0.00
RESIDENCE				
MONTHLY NEEDED WATER BILL:	$78.14	$78.14		$78.14
% OF ADJUSTED GROSS INCOME:	2.63%	2.63%		2.63%

$0.00

Agenda Item 7

Rural Water Association Report
Presented to the Drinking Water Board
September 1, 2020

DRINKING WATER BOARD PACKET
Rural Water Association Report

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Janell Braithwaite – Management Technician.....4

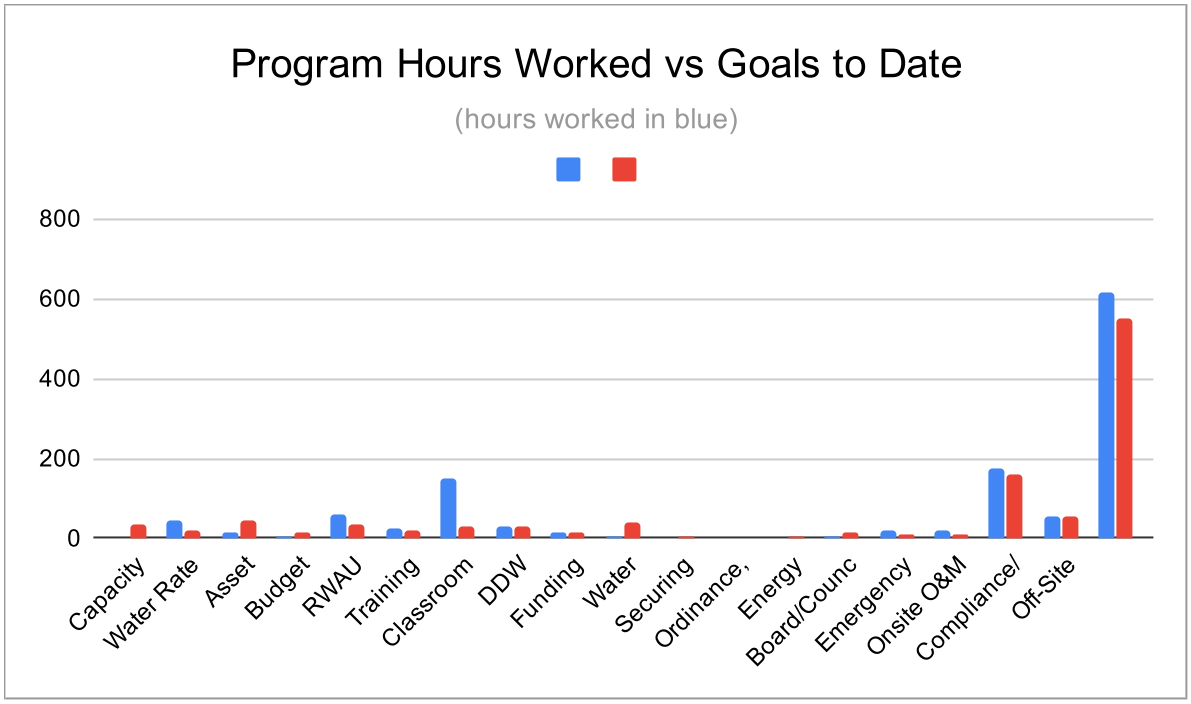
Curt Ludvigson – Management Technician.....6

Rural Water Association - DWB Report

Report Period: July, 2020

Terry Smith - Compliance Specialist

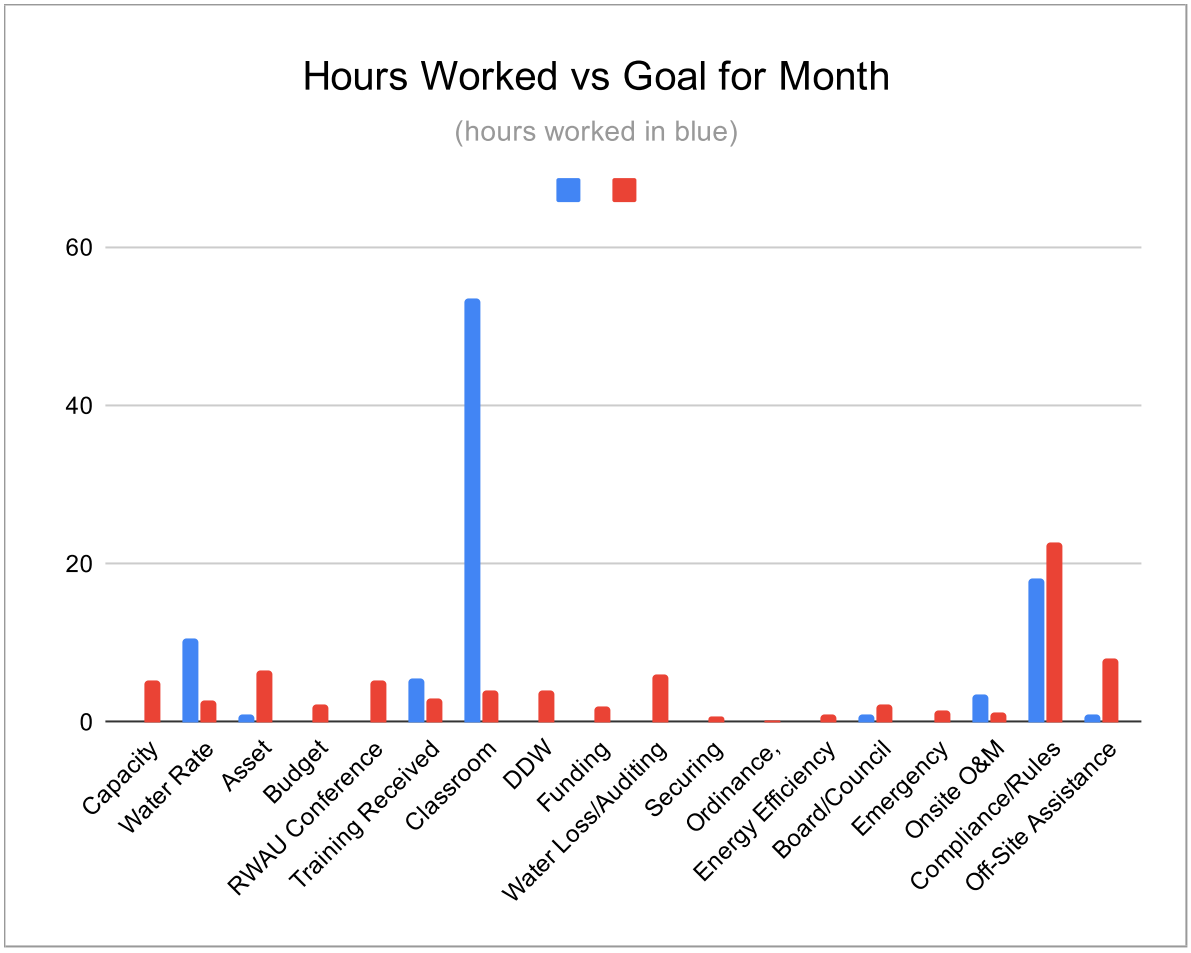
Contract Goal Titles	Report Period Hours:	Program Hours to Date:	Program Goals:
Capacity Development/Master Planning	0.0	37.3	64.0
Water Rate Development/Analysis	10.5	18.7	10.5
Asset Management/Evaluation	1.0	46.7	80.0
Budget Planning/Evaluation	0.0	15.2	26.0
RWAU Conference	0.0	37.3	64.0
Training Received	5.5	21.0	36.0
Classroom Instruction/Training	53.5	28.0	48.0
DDW Interaction/Meetings/Reports	0.0	28.0	48.0
Funding Procurement	0.0	14.0	24.0
Water Loss/Auditing	0.0	42.0	72.0
Securing Engineering	0.0	5.8	10.0
Ordinance, Resolutions, By-Laws Development	0.0	2.3	4.0
Energy Efficiency Study	0.0	7.0	12.0
Board/Council Training	1.0	15.2	26.0
Emergency Response	0.0	10.5	18.0
Onsite O&M Training	3.5	8.2	14.0
Compliance/Rules Assistance	18.3	158.7	272.0
Off-Site Assistance	1.0	56.0	96.0
Totals:	**94.25**	**552**	**925**



Report Period: July, 2020

Notable Assistance & Work Performed

System	Description:
Deer Springs Ranch Lower	Assisting Jeff with Deer Springs Ranch - TC rule
NEW HARMONY TOWN	Onsite - addressed council in reference to booster pump rule
WOODLAND HILLS CITY	Working with Janell on water rates for Woodland Hills
COLEMAN M-HOME COURT	Assisting Coleman MH Court with Cross Connection program
COVERED BRIDGE CANYON	Assisting David Jones - CCR, sampling, IPS
MOUNTAIN VIEW SSD	Meeting with Paula - CC program & sampling
NAVAJO LAKE CAMPGROUN	Met with Navajo Lake Campground personnel - Disinfection process
OLD MEADOW WATER CO	Old Meadows - assisting with Lead/Copper reporting
DANIEL DOMESTIC WATER	Assisting Mary w/ operator contract/duties to hire
BIG WATER MUNICIPAL	Assisting Janell - Big Water rates/spreadsheet
PINE VALLEY IRRIG CO	Assisting Pine Valley with compliance deficiences
MONTE VISTA COM WTR CO	Assisting planning development for disinfection/tank cleaning
MANDERFIELD CUL WTR	Assisting w/ sampling, backup generator requirements, etc.
SUMMIT SSD	Looked at sources and chlorinator to advise on disinfection, etc.
AURORA CITY	Assisting Janell with Aurora City rate model

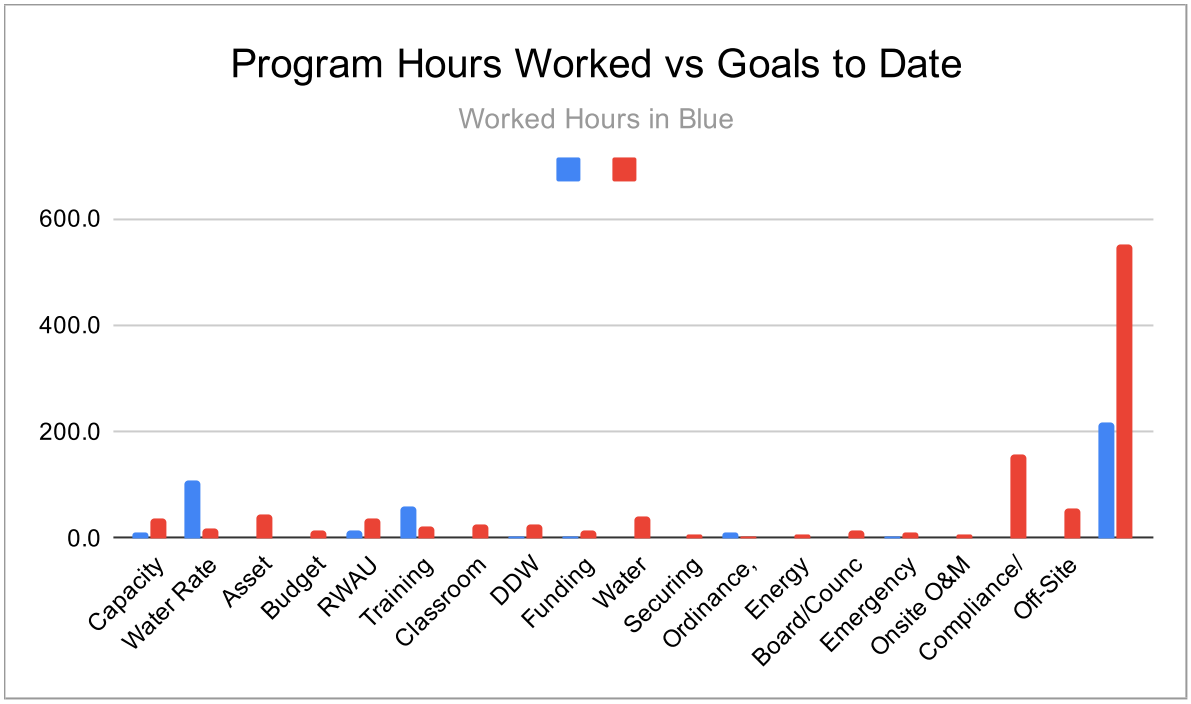


Rural Water Association - DWB Report

Report Period: July, 2020

Janell Braithwaite - Managment Technician

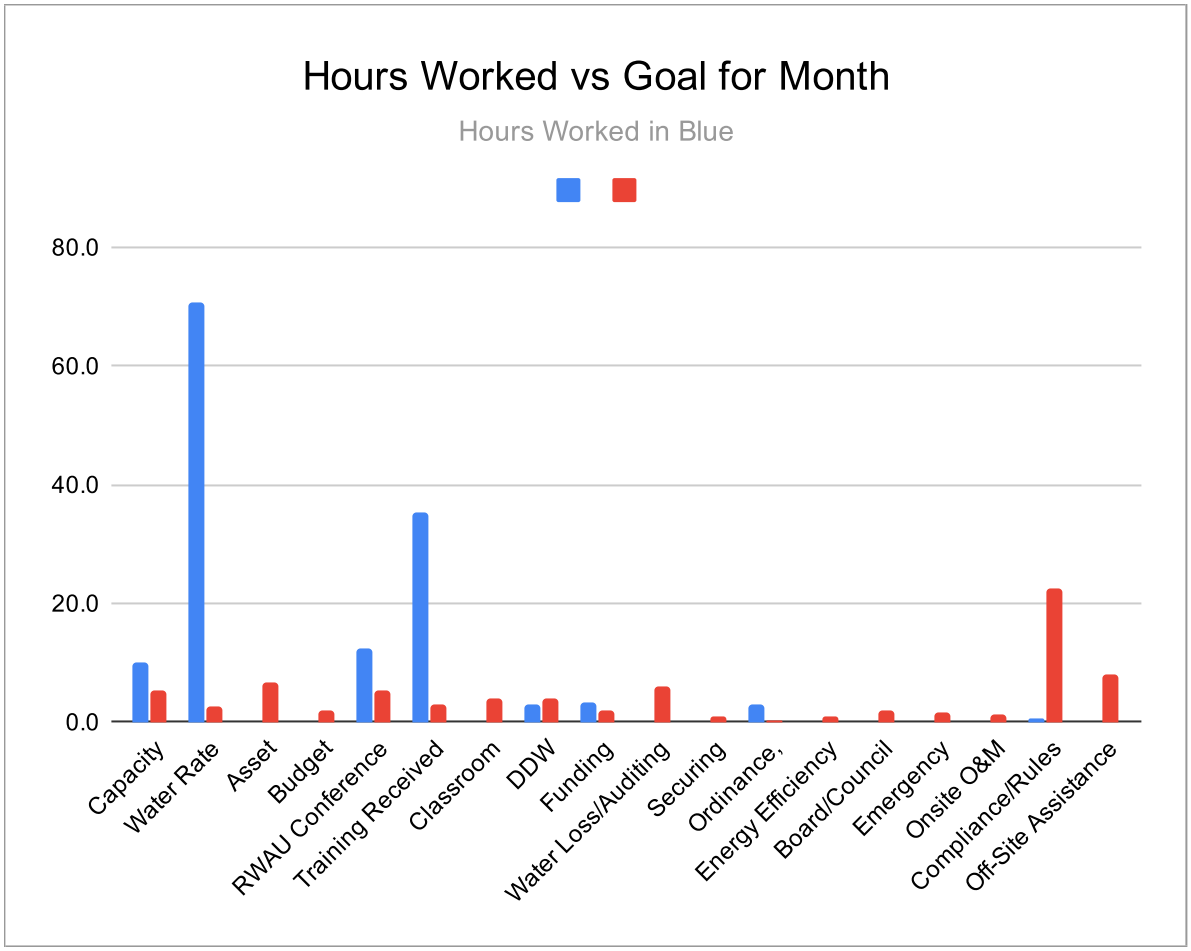
Contract Goal Titles	Report Period Hours:	Program Hours to Date:	Program Goals:
Capacity Development/Master Planning	10.25	37	64
Water Rate Development/Analysis	70.75	19	32
Asset Management/Evaluation	0.00	47	80
Budget Planning/Evaluation	0.00	15	26
RWAU Conference	12.50	37	64
Training Received	35.50	21	36
Classroom Instruction/Training	0.00	28	48
DDW Interaction/Meetings/Reports	3.00	28	48
Funding Procurement	3.50	14	24
Water Loss/Auditing	0.00	42	72
Securing Engineering	0.00	6	10
Ordinance, Resolutions, By-Laws Development	3.00	2	4
Energy Efficiency Study	0.00	7	12
Board/Council Training	0.00	15	26
Emergency Response	0.00	11	18
Onsite O&M Training	0.00	8	14
Compliance/Rules Assistance	0.75	159	272
Off-Site Assistance	0.00	56	96
Total:	**139.25**	**552**	**946**



Report Period: July, 2020

Notable Assistance & Work Performed

System Name:	Description:
WOODLAND HILLS CITY	Online w/Terry working on Water Rate study for Woodland HIlls
Clark Bench	Review DDW letter to Clark Bench Water System, Curt and I will be contacting Clark Bench system
	Source Protection meeting online w/DDW
WOODLAND HILLS CITY	Water Rate research/data study from Woodland HIlls
AURORA CITY	By phone-called City Recorder, Clint Johnson at Aurora City to determine what their water problems were and what we could do to help
WOODLAND HILLS CITY	City council meeting w/Woodland Hills to discuss water project
HEBER CITY	Prepare for Heber City meeting, system upgrades
WOODLAND HILLS CITY	Reviewed Utah Code for clarification on public hearing requirements, emailed Terry and Seth Oveson at the State Auditor's Office
HEBER CITY	Teams meeting with Heber City, Horrocks Engineering and Curt
BIG WATER MUNICIPAL	Water Rate Survey-gather data and start putting together
WOODLAND HILLS CITY	City Council meeting with Woodland Hills re: Water project and rates
AURORA CITY	Aurora City Council meeting to discuss water project
BIG WATER MUNICIPAL	Big Water Rate Study
AURORA CITY	Aurora City Water Rate Study
WOODLAND HILLS CITY	Meeting with engineer and finance committee chairman to review water

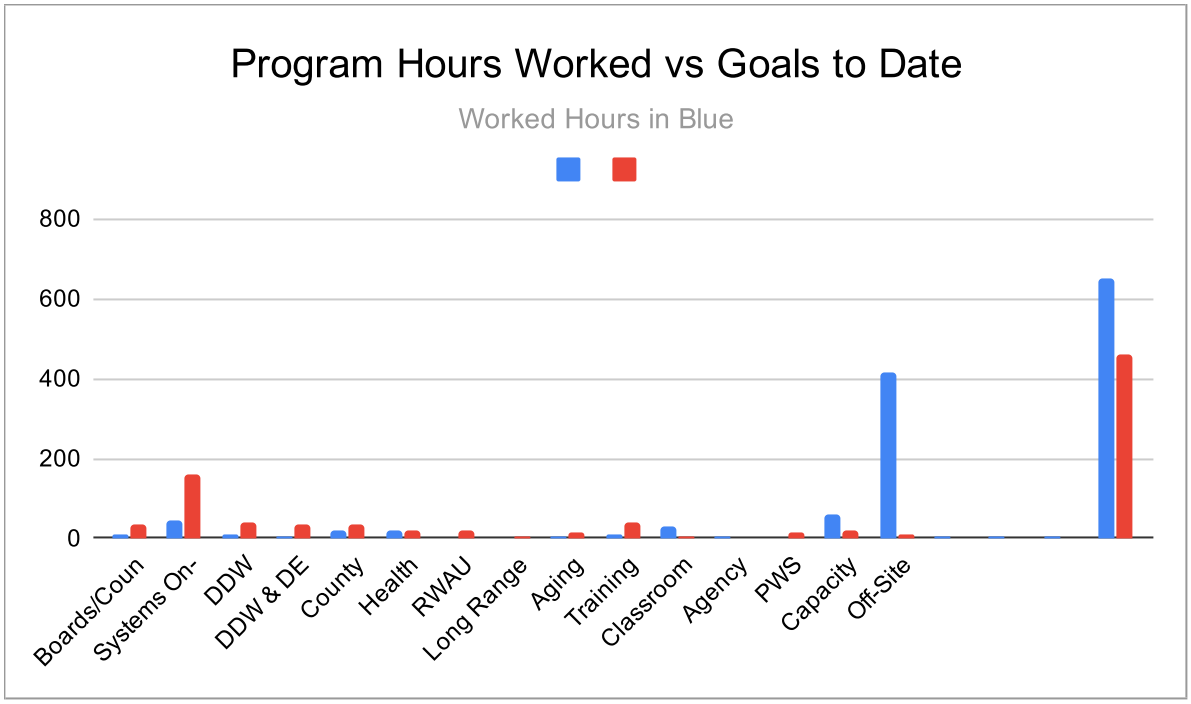


Rural Water Association - DWB Report

Report Period: July, 2020

Curt Ludvigson - Managment Technican

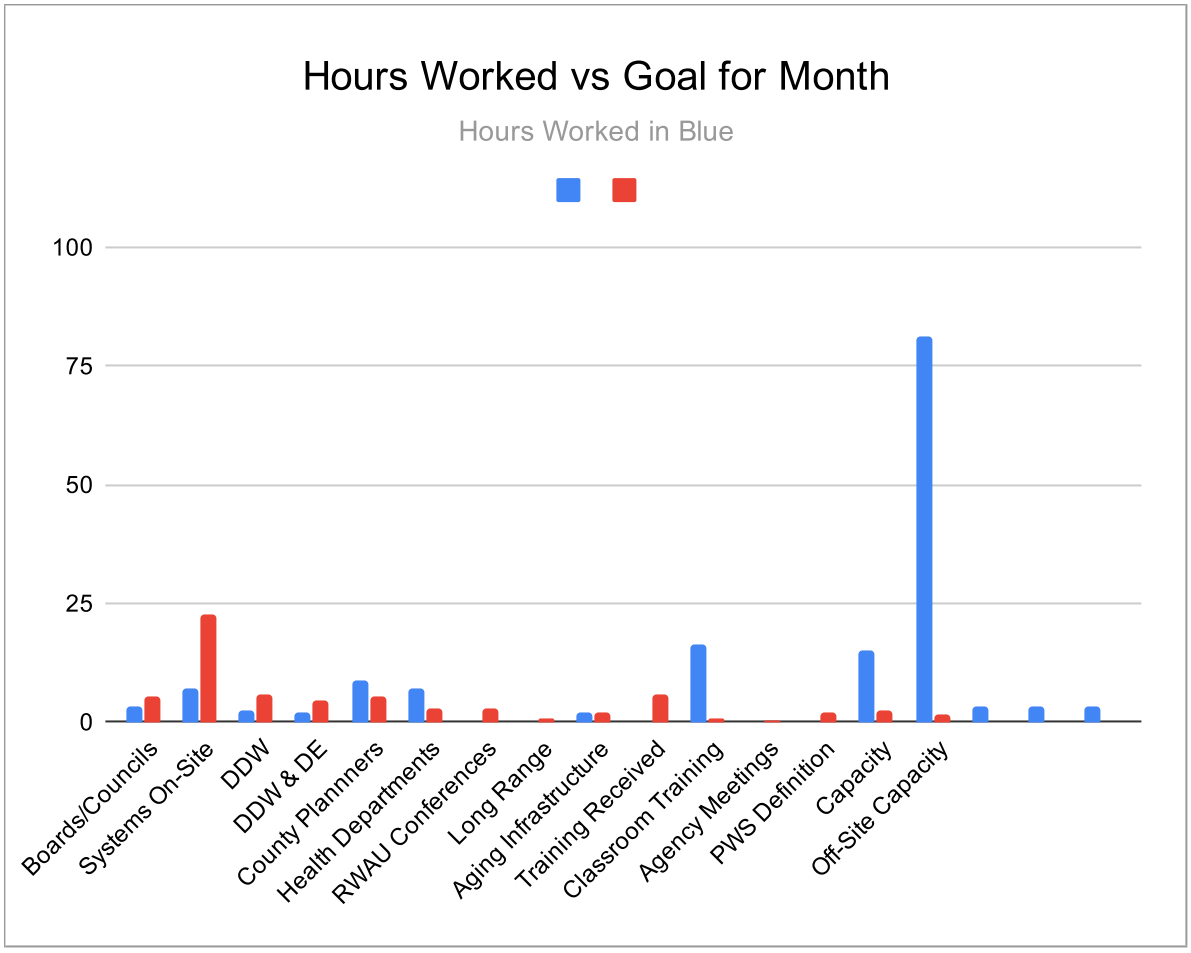
Contract Goal Titles	Report Period Hours:	Program Hours to Date:	Program Goals:
Boards/Councils	3.50	37.33	64
Systems On-Site	7.00	158.67	272
DDW Interaction/Meetings	2.50	41.42	71
DDW & DE	2.00	32.67	56
County Plannners	9.00	37.33	64
Health Departments	7.00	21.00	36
RWAU Conferences	0.00	21.00	36
Long Range Planning	0.00	5.83	10
Aging Infrastructure Planning	2.00	14.00	24
Training Received	0.00	42.00	72
Classroom Training	16.25	5.83	10
Agency Meetings	0.00	2.33	4
PWS Definition Training	0.00	14.00	24
Capacity Development Planning	15.00	18.67	32
Off-Site Capacity Development	81.25	10.50	18
Total:	**155**	**463**	**793**



Report Period: July, 2020

Notable Assistance & Work Performed

System Name:	Description:
	Phone Call with Michael Grange discussing Funding and Systems with needs
CHURCH WELLS SSD	Zoom meeting with Church Wells
	Meeting with the District Engineer about spring projects in Sterling and Fairview
WOODLAND HILLS CITY	Zoom Meeting with Woodland Hills Council
FAIRVIEW CITY	Meeting with Fairview Mayor discussing the process of changing engineers and the progress on the Spring project
MORONI CITY	Meeting with Moroni Mayor and Clerk discussing their budget and
WALLSBURG TOWN	Phone call with Wallsburg Town about possible emergency funding
Sanpete County	Sanpete County Planning Commission Meeting
Millard County	Millard County Planning Commission Meeting
	Central Utah Health Department Board Meeting
BIG WATER MUNICIPAL	Working on rates for Big Water
AURORA CITY	Aurora Council Meeting discussing a project that they need to do
WOODLAND HILLS CITY	Meeting with Woodland Hills and DDW personnel discussing funding for the project the city needs to do
CHURCH WELLS SSD	Work on rates and budget review for Church Wells
AXTELL COM SERVICE DIST	Working on rates work for Axtell SSD



Agenda Item 8

DRINKING WATER BOARD PACKET
Division of Drinking Water Legislative Audit Report

Background

The Legislative Audit Subcommittee requested that the Office of the Legislative Auditor General conduct an in-depth budget review of the Department of Environmental Quality (DEQ). Over the course of several months Division staff worked closely with auditors to provide any and all documentation needed to complete the audit. The auditors presented their findings and recommendations for the Department and the Division to the Utah Legislature on August 18, 2020. The following is chapters one and two of their report. Visit https://olag.utah.gov/olag-web/ to view the full report.

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Chapter II DDW Can Improve Waters Systems' Time to Compliance..…….....14

Chapter I
Introduction

The mission of the Department of Environmental Quality (DEQ) is to safeguard and improve Utah's air, land, and water through balanced regulation. DEQ carries out its mission through the combined efforts of its five operational divisions.

The Department of Environmental Quality (DEQ) is responsible for safeguarding and improving Utah's air, land and water.

DEQ has been granted primacy by the Environmental Protection Agency (EPA) to enforce the federal Clean Air Act, Clean Water Act, Safe Drinking Water Act, Comprehensive Environmental Response Compensation, and Liability Act, and the Resource Conservation and Recovery Act. In addition, as an agreement state with the Nuclear Regulatory Commission (NRC), Utah has been granted authority to regulate certain uses of radioactive materials.

The five operational divisions oversee and regulate air, water, hazardous waste, super fund sites, radiation, and other environmental concerns. This chapter discusses the following:

- The statutory mandate for our office to conduct in-depth budget reviews and provide an overview of the risks we identified during the audit
- DEQ's structure, revenues, and expenses from fiscal years 2015 through 2019
- DEQ's permit and program fees generated from fiscal years 2015 through 2019
- An audit follow-up of a 2012 legislative audit

Additionally, *A Performance Audit of the Division of Air Quality* (Report #2020-05) was conducted in conjunction with this in-depth budget review.

In-Depth Budget Reviews Are Statutorily Required, Risks Identified

We performed a risk assessment of the department's structure, controls, efficiencies, revenues.

The Legislative Audit Subcommittee prioritized this audit, which provides a review of DEQ's budget and performance. To complete this review, we conducted a risk assessment of the department's structure, controls, efficiencies, revenues, and spending from fiscal years 2015 through 2019. The chapters in this report reflect our risk analysis and statutory language for in-depth budget reviews.

Utah Code 36-12-15.1 requires the Office of the Legislative Auditor General to annually audit the appropriations of at least one entity. The intent of these audits, as outlined in statute, is to determine how efficiently and effectively the entity has used its appropriated funds. These and other statutory requirements for in-depth budget reviews are shown in Figure 1.1.

Figure 1.1 In-Depth Budget Audits Require a Review of Appropriations and Spending. The following is a summary of statutory language defining the required elements of in-depth budget reviews.

- The entity's appropriation history
- The entity's spending and efficiency history
- Historic trends in the entity's operational performance effectiveness
- Whether the entity's size and operations are commensurate with its spending history
- Whether the entity is diligent in its stewardship of state resources

Source: ***Utah Code*** 36-12-15.1

Statute specifies elements that are to be covered in an in-depth budget review.

To conduct this audit, we performed a risk-based review of DEQ's operations and identified key concerns related to the department's budget and operations. The fulfillment of statutory requirements guiding this review can be found in each chapter of this report.

Budget Review Summarizes Revenues, Expenses, and Fees

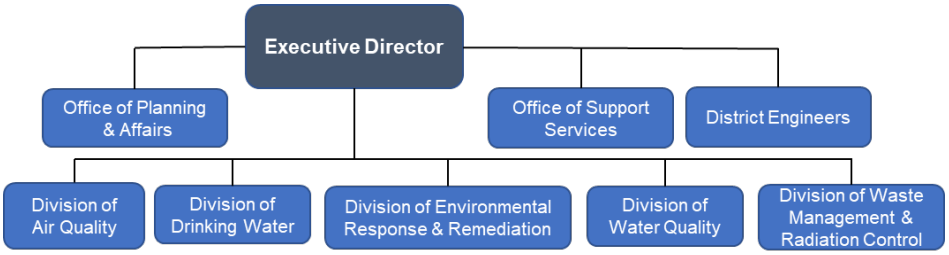
DEQ has six divisions, an administrative division and five operational divisions that implement both federal and state statutes concerning the environment. The department receives both state and federal funding as well as revenue from fees to accomplish state and

federal mandates. The department receives the majority of its funding from three sources: federal funds, state general funds, and restricted accounts. This section provides a brief review of DEQ's revenues, expenses, and fees from fiscal years 2015 through 2019.

DEQ Has Five Main Divisions

The department is charged with implementing and enforcing state and federal environmental rules and regulations. Figure 1.2 provides an organizational view of the department and its divisions. The focus of DEQ's five divisions is administering programs that protect Utah's environment.

Figures 1.2 DEQ Administration Oversees Five Divisions with Diverse Mandates. The divisions have federal as well as state mandates that must be followed.



Source: Auditor Generated

The department, along with its divisions, is responsible for monitoring, issuing permits, inspecting, enforcing, partnering, assisting, and funding to protect and uphold state and federal regulations. The department has four different boards that adopt and enforce rules related to particular environmental areas. The department also has one advisory board that seeks the best available science to identify legislative actions and helps prioritize potential legislation that will improve air quality.

The Department of Environmental Quality (DEQ) along with its five divisions, is responsible for monitoring, issuing permits, inspecting and enforcing state and federal regulations.

Majority of DEQ Funding Comes From Three Major Sources

Federal funds, general funds, and restricted accounts[1] are the three largest funding sources for the department, accounting for 83 percent

[1] Restricted accounts are defined in statute as "collections that are deposited, by law, into a separate fund . . . for a specific program or purpose."

of DEQ's funding in fiscal year 2019. Figure 1.3 shows the total funding for the department from the various sources as well as the percentage of the total funding.

Figure 1.3 Federal Funds, Restricted Funds, and General Fund Appropriations Fund More Than 80 Percent of DEQ's Operations. Federal funds make up 33 percent of the department's budget.

Funding Sources	2019 Funding	Percentage of DEQ Funding
Federal	$23,495,000	32.9%
General Fund (Ongoing and One-Time)	20,501,200	28.7
Restricted and Other Accounts*	14,814,200	20.7
Dedicated Credits	10,604,500	14.8
Beginning Non-Lapsing	1,856,500	2.6
Transfer	239,100	0.3
Total	**$71,510,500**	**100%**

Source: Auditor summary of Legislative Fiscal Analyst COBI data.
**DEQ has account types that include restricted and expendable special revenue accounts. These numbers are rounded and do not include lapsing and closing non-lapsing fund balances.*

Federal funding provided DEQ with the highest percentage of funding in 2019.

Revenue from restricted accounts comprise 21 percent of funding and comes from permit, registration, and disposal fees. It should be noted that fines levied by the department go back to the general fund or to some restricted accounts.

DEQ Six Division-Level Budgets Vary Significantly. Figure 1.4 shows the budgets of DEQ's six divisions. This data includes all funding sources for the divisions. The Division of Air Quality's (DAQ) budget increased by 46 percent, the largest increase since 2015. A large portion of this funding increase, which are pass-through funds, was caused by various federal and state incentive programs to improve the state's air quality. The air quality incentive programs will be discussed further in Chapter II of Report 2020-05.

The Division of Drinking Water had the second largest budget percentage increase from fiscal years 2015 through 2019, increasing by 16 percent during this time.

Figure 1.4 DEQ's Budget Appropriations for its Six Divisions for Fiscal Years 2015 through 2019. All six division's appropriation budgets have increased since 2015.

Divisions	2015	2016	2017	2018	2019	%Chng
Executive Director	$5.2	$5.6	$5.6	$5.6	$5.6	8%
Air Quality	15.8	14.3	15.9	17.5	23.0	46
Drinking Water	5.4	5.6	6.7	5.7	6.2	16
Environmental Response	7.0	6.7	6.9	7.5	7.3	4
Water Quality	11.3	10.8	11.0	11.2	12.2	8
Waste Mgt & Radiation Ctrl[2]	10.3*	9.2	9.1	9.5	9.7	5**

Source: FINET
** The combined budget amount of both divisions before they were consolidated in 2015*
*** Percent change is from 2016. The percent change in WMRC's budget is (-7%) from 2015 to 2019 but in 2015 they were two separate divisions.*

The Division of Air Quality's budget has increased 46 percent for 2015 – 2019.

The Division of Waste Management and Radiation Control's budget increased 5 percent during this time from 2016 to 2019 after the two divisions were consolidated. Because of the consolidation, some programs were moved from the WMRC division to other DEQ divisions as well as the x-ray program being reduced to two inspectors. DEQ's budget growth would be in line with other state agencies' budget growth except for the fact the DAQ received extra pass-through funds for air quality incentive programs.

DEQ's Appropriations Have Increased. Figure 1.5 shows a history of the department's appropriations for the last five years.

[2] The radiation division and waste management divisions were combined July 1, 2015. The 2015 budget numbers are a combination of the divisions.

Funding from Federal and General Funds has increased since 2015.

Figure 1.5 DEQ Funding from Federal Fund, General Fund, Restricted and Other Accounts, and Other Sources from Fiscal Year 2015 through 2019. Amounts are in millions of dollars.

Revenues	2015	2016	2017	2018	2019
Federal	$17.8	$16.8	$17.0	$18.1	$23.5
General Fund	14.6	14.2	14.5	15.2	20.5
Restricted and Other Accounts	12.9	12.2	14.7	14.3	14.8
Dedicated Credits	10.6	8.6	9.1	9.1	10.6
Beginning Non-Lapsing	0.5	1.8	2.0	2.2	1.9
Transfer	0.5	0.9	0.4	0.3	0.2
Total	**$56.9**	**$54.5**	**$57.7**	**$59.2**	**$71.5**

Source: Legislative Fiscal Analysts 2015 and 2019 COBI publications

The largest increase has been in federal appropriations, which increased 33 percent over this time. General funding increased 29 percent over the same time. A large portion of the federal and state funding is pass-through funds to be used to improve air quality and are not used for operations. DEQ's funds are carried forward from previous year funding, approved as dedicated credits,[3] or passed through as transfers[4] for a purpose outlined in statute.

In addition, other accounts that can be considered enterprise funds are included. DEQ administration has oversight of these funds, which are to be used similarly to a private business in that the costs of goods and services are to be recovered. The following are examples: water development security fund, drinking water loan program, state revolving fund for drinking water projects, and hardship grant programs for drinking water projects. It is important to note that, if enterprise funds receive any federal funds, these cannot be comingled with state funds.

DEQ's Revenue Generated from Permits and Fees Has Increased Since Fiscal Year 2015. Figure 1.6 shows the revenues generated from DEQ's five divisions. Revenues from fees and permits

[3] Dedicated credits are collected by an agency to fund its operations. These credits may include revenue from permits, fees, fines, or sales of goods or services and can be expended for any purpose within a program or line-item.

[4] Pass-through funding is defined in ***Utah Code*** 63J-1-220 as money appropriated to a state agency that is intended to be passed to a local government entity, private organization, or person and can be one-time or ongoing.

have increased for all five divisions from 2015 to 2019. The Division of Water Quality (DWQ) revenue from fees and permits increased by 55 percent over the five-year period.

The Division of Water Quality's (DWQ) revenue from fees and permit has increased (55%) the most since 2015.

Figure 1.6 Overall Revenues Generated from Fees and Permits from DEQ's Five Divisions from 2015 to 2019. Revenues from fees and permits increased 12 percent during this time. The revenues from fees and collections in this figure are for operational budgets only and not for the restricted funds.

	2015	2016	2017	2018	2019
DAQ	$5,284,617	$5,536,738	$5,524,822	$5,412,471	$6,170,487
DDW	185,928	187,263	185,409	195,356	231,385
DERR	624,591	678,370	737,710	848,580	803,600
DWQ	1,107,173	1,159,505	1,480,038	1,503,053	1,715,791
WMRC	1,473,484	730,104	1,006,936	639,385	773,248
Total	**$8,675,793**	**$8,291,980**	**$8,934,915**	**$8,598,845**	**$9,694,511**

Source: Auditor Analysis

DWQ's storm water fee had the largest increase in terms of amount from 2015 to 2019. The total amount increase over the five years was $525,250. The main reason for the increase is due to the increased construction in the state. Revenues generated from permit and fees can change year to year depending on many factors that are outside the control of the department.

DEQ's Expenditures Differ Among the Divisions

DWQ's revenues from permits and fees saw a large increase from 2015 – 2019 because of the increased construction the state has experienced.

Reviewing the expenditures of DEQ's six divisions provides insight into their operations. Spending within these budgets varies significantly. Figure 1.7 shows division spending and the percentage of spending from fiscal years 2015 through 2019. For example, in 2019, DAQ spent $23 million compared to the DDW, which spent $6 million. In comparison only DERR's[5] overall expenses decreased over the five-year period.

[5] The Division of Environmental and Remediation (DERR)

Divisional spending at DEQ from 2015 to 2019 shows that there is a large variation among the divisions.

Figure 1.7 Division Expenditures Increased for Four Divisions Since Fiscal Year 2015. The Division of Air Quality had the largest amount of expenses of the divisions but much of the expenses can be attributed to pass-through funds and air quality incentive programs.

Divisions	2015	2016	2017	2018	2019	%Chng
Executive Director	$5.2	5.6	5.4	5.6	5.6	8%
Air Quality	15.9	14.5	15.9	17.8	23.0	44
Drinking Water	5.2	5.5	5.6	5.6	6.0	15
Environmental Response	6.6	6.3	6.4	6.6	6.4	-4
Water Quality	11.2	10.7	10.9	11.2	12.2	9
Waste Mgt & Radiation Ctrl[6]	9.6*	8.1	8.2	8.4	9.0	11**

Source: Legislative Fiscal Analyst
** The combined expenditure amount of Waste Management and Radiation divisions before they were consolidated in 2015.*
*** Percent change is from 2016. The percent change in WMRC's budget is (-11%) from 2015 to 2019 but in 2015 they were two separate divisions.*

DAQ had the highest percentage of increase in expenses from 2015 to 2019 at 44 percent, much of which can be attributed to air quality incentive programs.

Divisional Expenses for Attorney General Services Are Significant

The Attorney General's Office (AGO) provides many vital legal services to DEQ and its divisions.

Because the environmental section of the Utah Attorney General's Office (AGO) provides multiple services to the DEQ, we included it in our review. The following are examples of the services provided to the department and its divisions.

- Responding to request for legal assistance, including legal reviews, research, and responding to inquiries
- Assisting the DEQ with the implementation of environmental regulations
- Representing the DEQ in administrative hearings, adjudicative proceedings, civil litigation, and appeals before state and federal courts

[6] The radiation division and waste management division were combined on July 1, 2015.

- Providing legal support in rulemaking, records requests (subpoenas and Government Records Access and Management Act requests), and legislation

- Representing the DEQ Executive Director's Office and Division Directors

- Advising DEQ's statutory boards on rulemaking, enforcement, and other functions and duties

The Legislature determines the level of funding for the services. Figure 1.8 shows the divisions' expenses for fiscal years 2015 through 2019 for AGO services. Overall, AGO expenses have increased by 9 percent.

Figure 1.8 Division Expenditures for Attorney General Services for Fiscal Years 2015 through 2019. Overall expenses for the DEQ divisions have increased 9 percent over 5 years.

Div.	2015	2016	2017	2018	2019	%Chng
EDO	211,675	234,339	251,663	294,500	147,831	-30%
DAQ	220,200	305,251	248,968	262,200	307,855	40
DERR	244,300	239,140	237,805	198,900	174,103	-29
DDW	27,800	26,404	27,909	21,400	52,662	89
DWQ	136,600	149,725	176,212	197,000	195,882	43
WMRC	230,100	235,540	241,943	211,300	290,867	26
Total	**$1,070,675**	**$1,190,400**	**$1,184,500**	**$1,185,300**	**$1,169,200**	**9%**

Source: Legislative Fiscal Analyst

The Division of Drinking Water (DDW) had the largest increase in the percentage of expenses for AGO services.

Even though the Division of Drinking Water (DDW) expenses were the lowest among the operational divisions, its percentage of total AGO expenses increased the most from fiscal year 2015 through 2019. The overall AGO expenses of the Division of Environmental Response and Remediation (DERR) decreased by 29 percent over the same period.

Next, Figure 1.9 shows the Fiscal Year 2020 budget increases for AGO services for each division. Since its one of the department's responsibilities is to regulate and enforce state and federal environmental policies, AGO's services are in high demand.

Figure 1.9 Fiscal Year 2020 Budget Appropriation Increases for Attorney General Services by Division. The Division of Air Quality's budget increased the most among the divisions for AGO services.

Divisions	2019-2020	Percent of Total
EDO	$111,400	23%
DAQ	117,900	24
DDW	9,800	2
DERR	81,500	17
DWQ	74,200	15
WMRC	87,300	18
Total	**$ 482,100**	**100%**

Source: COBI

Appropriation budget amounts are set by the Legislature for DEQ's divisions.

The AGO attorneys aid DEQ with permitting and enforcement actions. While attorneys do not review every permit or enforcement action, divisions may request assistance for such actions as drafting permit and enforcement document templates or language for specific permit and enforcement conditions.

DEQ Implemented Recommendations Of the 2012 Radiation Audit

In 2012, our office completed *A Performance Audit of the Division of Radiation Control* (report 2012-10). Since the 2012 audit, the division merged with the hazardous waste division and is now the Division of Waste Management and Radiation Control (WMRC).

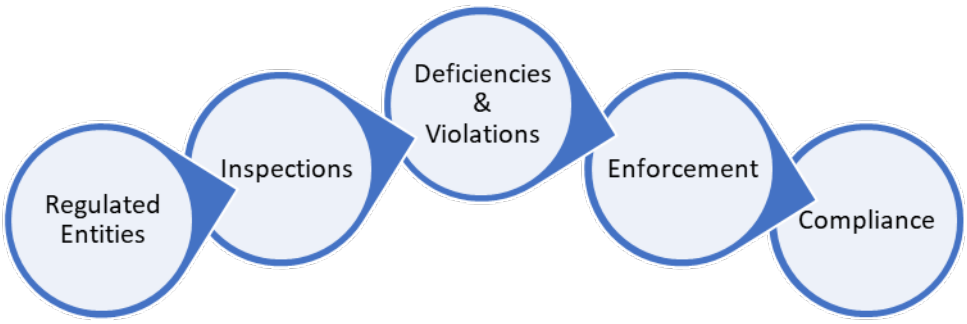
Utah Code 36-12-15(10) directs our office to follow up on any previous audit recommendations to ensure they were implemented. Six recommendations in the 2012 audit report were directed to the division and two were submitted to the Legislature for consideration. Appendix A of this report summarizes the division recommendations and implementation status.

Evaluating the Regulatory Framework Was a Key Focus of Our Audit Work

DEQ's regulatory effectiveness and efficiency were major themes of our review of each division. As shown in Figure 1.10, elements of this framework are tied together. Where we were able to collect data,

this report identifies DEQ's effectiveness and efficiency in meeting its regulatory mission.

Figure 1.10 Report's Regulatory Framework for Evaluation of DEQ Oversight Efficiency and Effectiveness. Throughout the report, we revisit this framework to show how divisions tracked essential elements of its regulatory processes.



Source: Auditor Generated

This tear drop will be used throughout this report when discussing how well the divisions are regulating.

Each framework element is described below.

- **Regulated Entities** – We requested data on any entity that fell within DEQ's regulatory jurisdiction. Specifically, we assessed whether DEQ tracked entity-specific regulatory activities back to the individual entities.
- **Inspections** – We requested data on any oversight activity that could result in a deficiency finding for the regulated entity. We used this data to identify whether inspections occurred at required frequencies and to tie inspections to other regulatory activities.
- **Deficiencies and Violations** – We requested data on entities' regulatory deficiencies identified by an inspection or other method. Specifically, we assessed whether deficiencies were tracked from inspection activities to a date of compliance.
- **Enforcement** – We requested data on any enforcement action taken against a regulated entity. Specifically, we assessed whether enforcement data was tied to specific deficiencies.
- **Compliance** – We requested data showing when regulated entities returned to compliance after a documented deficiency or violation was identified.

Ultimately, we believe that tracking the above data helped identify how effectively and efficiently DEQ's oversight activity brought regulated entities into compliance. We acknowledge that permitting entities is a large portion of DEQ's work. This audit did not concentrate on DEQ's permitting operations but focused on the inspection and compliance processes that DEQ divisions regulate. Since DEQ is a regulatory agency, we wanted to determine if required inspections were being completed as well as how well DEQ enforced entities' return to compliance when violations were accessed.

Scope and Objectives

This audit was prioritized in accordance with ***Utah Code*** 36-12-15.1, which authorizes in-depth budget reviews of state entities, as prioritized by the Legislative Audit Subcommittee. Accordingly, this audit was conducted to assess DEQ's budget and programs. Chapter I of this report has addressed DEQ's mission, structure, budget, revenue, and expenses. The remaining chapters address the following issues, identified during our in-depth budget review.

This in-depth budget review reports on risks identified in various divisions and programs throughout DEQ.

- Chapter II focuses on the Division of Drinking Water (DDW) to determine how well inspections of the entities they regulate are occurring, as well as their enforcement of entities that were out of compliance.

- Chapter III focuses on whether regulation is needed of above-ground storage tanks (AST) that currently are not regulated by the state. In addition, the chapter focuses on the Division of Environmental Response and Remediation's (DERR) inspection practices and enforcement.

- Chapter IV looks at programs within the Division of Waste Management and Radiation Control (WMRC) to determine if required inspections were occurring as well as enforcement of entities out of compliance.

- Chapter V evaluates the Division of Water Quality (DWQ) to determine how well inspections of the entities they regulate are occurring, as well as their enforcement of entities that were out of compliance.

Chapter II
DEQ Division of Drinking Water Can Improve Water Systems' Time to Compliance

The Department of Environmental Quality's (DEQ) Division of Drinking Water (DDW) has increased enforcement, but still needs to improve in cases where water systems are not correcting deficiencies. DDW can implement time to compliance tracking to help improve its regulatory processes for returning water systems to compliance. DDW also needs to periodically review deficiency exceptions granted to water systems.

Lack of enforcement has allowed significant water system deficiencies to go uncorrected for years, possibly because DDW has never issued a fine or penalty. Deficiencies can allow contaminants from sources like irrigation water, dead animal carcasses, sewage, and other sources to contaminate a water supply and sicken those who drink it. We found that DDW had 115 significant deficiencies that went unresolved for 5 years or longer, and that 49 water systems currently have had at least one unresolved deficiency for longer than a year. DDW's new director has increased enforcement and the median time to compliance has decreased. That said, deficiency and violation tracking and reporting could help the division continue to improve water system compliance.

Deficiencies can allow contaminants from sources like dead animals, raw sewage, irrigation water, and other sources into drinking water.

As discussed in Chapter I, we used a framework to analyze the effectiveness of DEQ's regulatory oversight. The framework relied heavily on DEQ data during the audit. Because DDW data was extensive, we were better able to analyze the effectiveness of its regulatory activities. The teardrop figure in the margin shows DDW-provided data for each regulatory element in the framework.

DDW Oversees Utah's Drinking Water Systems

A water system is any public or private entity serving water to at least 15 connections or serving an average of at least 25 people per day for at least 60 days per year.

DDW is governed by both federal and state Safe Drinking Water Acts and is responsible for overseeing Utah's drinking water systems. A water system is any public or private entity that

- provides water to at least 15 service connections or
- serves an average of at least 25 people daily for at least 60 days out of the year.

Even if the system serves a privately owned community (a resort, for example), the system is still regulated by DDW.

As part of DDW's regulatory responsibilities, the division is required to evaluate a system's water sources, treatment, distribution, storage, management, and other system components. When a system does not meet Safe Drinking Water standards, DDW issues deficiencies and violations.

For this chapter, we considered only significant deficiencies in our analyses of water system data. Significant deficiencies are defined in *Utah Administrative Rule* (R309-215-15(22)(b) and include the following.

> A defect in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that EPA determines to be causing, or has the potential for causing the introduction of contamination into the water delivered to consumers.

Deficiencies can become failure-to-fix violations if DDW finds that the water system has not corrected the deficiencies in a timely manner.

A recent example of a significant deficiency at the Magna Water District sparked a boil order for Magna and parts of West Valley City and Salt Lake City. A screen had reportedly been removed on a water tank overflow drain-pipe and a racoon had entered the tank and died.

While deficiencies are not required to be reported to the EPA, violations are. Violations range from health-based issues like unhealthy contaminant levels to monitoring and reporting requirements like taking water samples and submitting sample results to DDW.

Figure 2.1 identifies the number of water systems in Utah by size and shows the average time systems of those sizes take to correct deficiencies and violations.

Figure 2.1 The Majority of Utah Water Systems Serve Less than 500 Consumers. Smaller systems tend to take longer to resolve violations, while system size appears to have less of an impact on days to compliance for deficiencies.

System Size	Number	Population Size	Average Days to Compliance	
			Deficiencies	Violations
Very Large	10	>100,000	287	36
Large	119	>10,000	194	98
Small	219	>500	256	118
Very Small	1,596	<=500	265	140
Total	**1,944**	**-**	**254**	**131**

** System deficiency and violation data are for calendar years 2015 – 2019.*
*** Deficiencies in this table are only significant deficiencies as defined by DDW.*
Source: DDW data

Most water systems are very small and tend to take longer to resolve violations.

As shown in Figure 2.1, larger systems tend to resolve violations more quickly than smaller systems. Very small systems, serving 500 or fewer consumers, are more likely to allow violations to go uncorrected longer. Reasons given for uncorrected issues is that smaller systems lack the expertise that larger systems have or have full time paid operators.

Figure 2.1 also shows that the time to compliance for significant deficiencies is greater than violations in every system size category. One possible reason for the difference is that violations are reported directly to the U.S. Environmental Protection Agency while deficiencies mostly stay with DDW. Deficiencies also focus more on physical facilities issues, whereas violations often result from monitoring and reporting issues or contaminants found in systems' drinking water samples.

While Compliance Has Improved, DDW Enforcement Is Still Lacking

DDW has improved the time it takes for water systems to correct deficiencies and violations. Deficiency and violation enforcement actions were historically low compared to recent years. The median

time to compliance has gone from 1,020 days in 2005 to 74 days in 2019. But despite the recent increase in enforcement, some systems continue to be deficient. Those systems could be incentivized to comply sooner if DDW used its penalty authority. As mentioned earlier in the chapter, DDW reported it has never issued a fine or penalty for a violation. DDW could also include a time to compliance measure in its performance tracking.

Drinking water contamination led to deaths in Flint, Michigan in 2014-15 and in Milwaukee, Wisconsin in 1993.

Uncorrected deficiencies and violations have the potential to lead to water contamination and public health problems. Contamination issues led to 12 reported deaths in Flint, Michigan in 2014 and 2015 and 69 reported deaths in Milwaukee, Wisconsin in 1993. The recent water boil order for Magna and parts of other Utah cities is a closer-to-home example of a deficiency leading to contaminants (a racoon) entering the water supply. In that case, the racoon had reportedly not been dead in the water supply long enough to decay and cause serious health concerns.

DDW Has Improved Water System Compliance In Recent Years

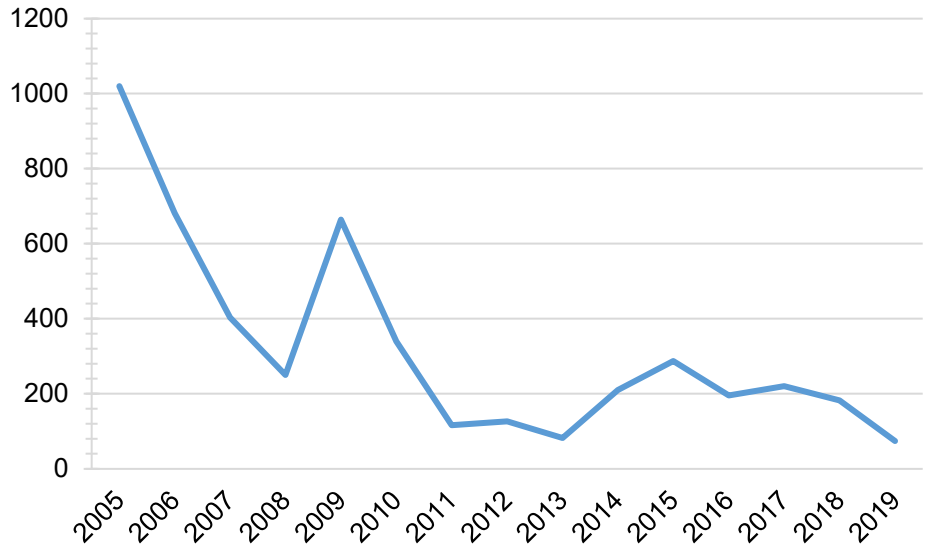
Division of Drinking Water data since 2005 shows 115 significant deficiencies that went unresolved for over 5 years.

In the past, some water systems took years to resolve significant deficiencies. According to DDW data since 2005, 115 significant deficiencies went unresolved for over 5 years.

One example of a long-time unresolved deficiency happened in American Fork City's water system. The deficiency was an unsecure structure for a water supply at Timpanogos Cave. The deficiency went uncorrected for 12 years until it was resolved in 2016. Another example of a long-time unresolved deficiency for a smaller water system occurred at Lakeside Resort. The system had a major issue with standing water in a drinking water spring collection area (which can cause water contamination). That deficiency went uncorrected for 18 years until February 2020. While we heard no reports of either deficiency causing serious harm, DDW's own standards indicate that the deficiencies were an unnecessary risk to public health for what we consider to be an excessive amount of time.

Water systems have been resolving significant deficiencies more quickly in recent years. Figure 2.2 shows an improving trend of water systems correcting deficiencies in shorter amounts of time.

Figure 2.2 Median Time to Compliance for Significant Deficiencies Is Decreasing. According to DDW deficiency data, median time to compliance has decreased from 1,020 days in 2005 to 74 days in 2019.



Source: DDW deficiency data

Median time to compliance has been decreasing since 2005.

As shown above in Figure 2.2, the median time for water systems to correct significant deficiencies has been improving. In recent years, the median time to compliance is well below one year. That said, some systems are still slow to resolve significant deficiencies as will be discussed in the next section.

DDW Enforcement Did Not Sufficiently Address Significant Deficiencies

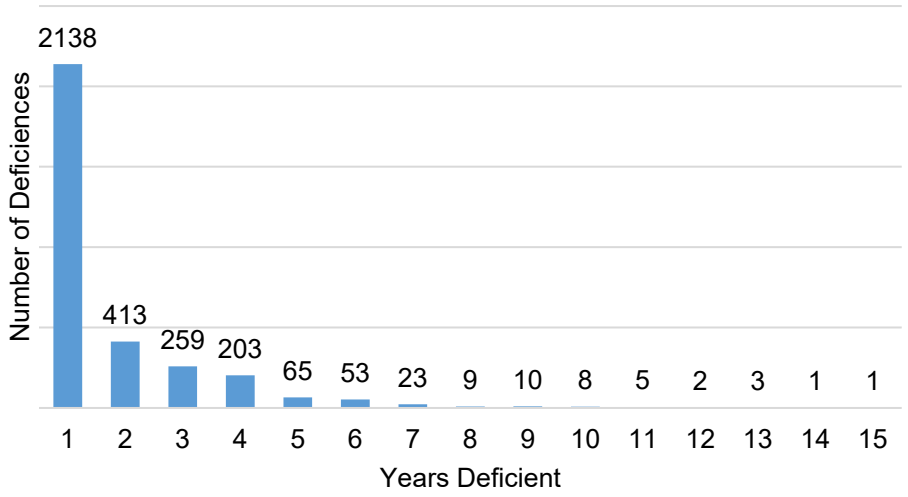
We estimate DDW took enforcement action on 10 percent of deficiencies and 4 percent of violations.

DDW appears to have taken enforcement action on a small percentage of water system deficiencies and violations. We estimate that DDW took enforcement action on 10 percent of significant deficiencies and 4 percent of violations since 2015. To estimate the enforcement, we collected data on all deficiencies, violations, and enforcement actions for the last five years. Where a deficiency or violation was followed by an enforcement action for the same water system within a year, we considered the enforcement to be tied to the deficiency or violation(s).

Although water systems resolve many deficiencies without enforcement, some systems allow deficiencies to linger and present health risks to their populations. Potential health risks could be as mild

as vomiting or as severe as death. Figure 2.3 shows the significant deficiencies that took longer than one year to resolve.

Figure 2.3 Data Since 2005 Shows that While Most Significant Deficiencies Were Resolved Within a Year, Many Deficiencies Took Longer. Of the 3,193 resolved deficiencies on record, 1,055 (33 percent) took longer than one year to resolve.



Source: DDW deficiency data

Of all deficiencies since 2005, 29 percent took between 1 to 5 years and 4 percent took over 5 years to reach compliance.

While most deficiencies were corrected in less than one year, 940 cases (29 percent) took between one to five years to correct and 115 cases (4 percent) took over five years to correct.

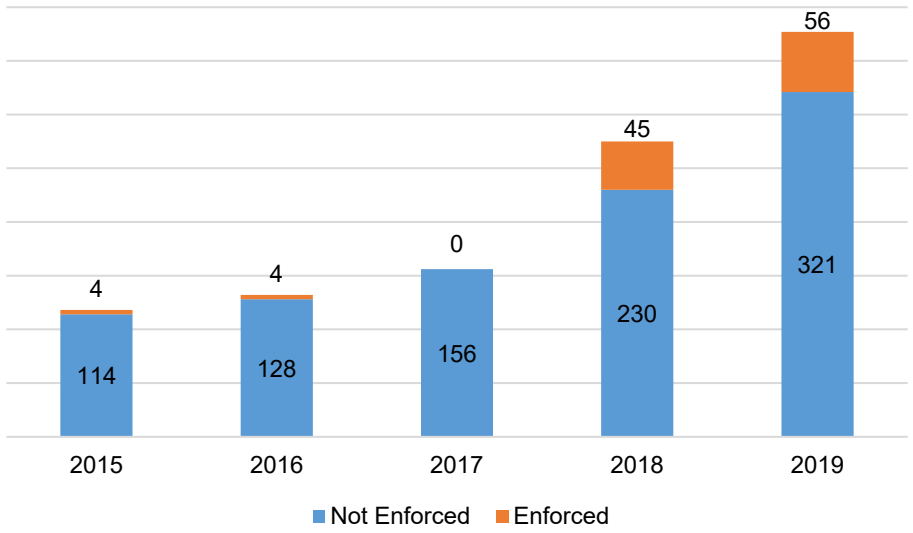
DDW leadership told us that one reason DDW has not enforced on more issues is because enforcement is costly. DDW has not had a large budget for pursuing fines or penalties. As shown in Figure 1.8 of Chapter 1, DDW has by far the lowest Attorney General budget of all the divisions. DEQ uses the Attorney General's office in its enforcements to ensure they meet legal requirements and best practices.

Informal enforcement action appears to have been inadequate in some prolonged deficiency cases.

DDW leadership also reported that they frequently work informally with the water systems to resolve deficiencies. While those efforts may contribute to the number of systems with deficiencies resolved within a year, we believe at least some water systems might have benefited from stronger and more consistent enforcement. Had the 119 systems with 5-year unresolved significant deficiencies been penalized according to DDW authority, they may have corrected the deficiencies sooner.

Next, Figure 2.4 illustrates the lack of enforcement action in earlier years and the trend toward increased enforcement in later years. As the figure shows, enforcement on significant deficiencies considerably increased in 2018.

Figure 2.4 DDW Has Rarely Used Enforcement Actions. In 2019, DDW enforced on 56 significant deficiencies, while 321 received no enforcement. We estimate that DDW took enforcement action on 10 percent of significant deficiencies (109 out of 949) since 2015.



Source: DDW deficiency and enforcement data

Enforcement on significant deficiencies increased in 2018 and 2019.

DDW staff reported that the increase in deficiencies are due to multiple changes including technical enhancements on their database, better software and training. Staff also reported that the increase in enforcement is due to a change in priorities from the new director hired in 2017.

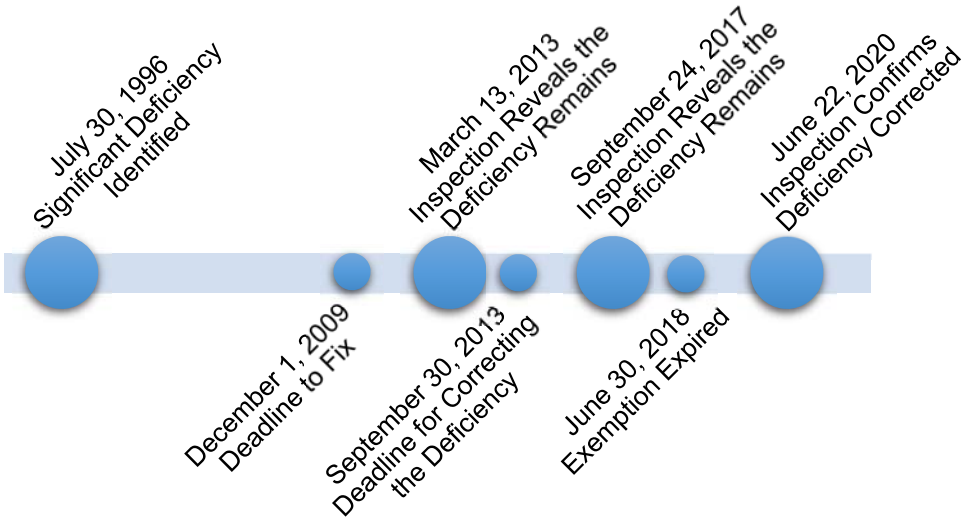
DDW Has Not Enforced on Lingering Deficiencies

Of the 74 unresolved significant deficiencies for over one year, 70 percent have not yet received any formal enforcement.

Water systems on average have been reducing the time taken to resolve deficiencies, but 74 significant deficiencies have still been unresolved for over a year. Of the unresolved deficiencies, 52 (70 percent) have not yet resulted in any kind of enforcement action from DDW.

According to DDW data, one system had a significant deficiency for over 23 years until June of 2020. A Utah country club was found to have an insufficient well casing elevation in 1996. Figure 2.5 is a timeline of DDW's history with the country club.

Figure 2.5 One Water System's Significant Deficiency Was Outstanding Since 1996. The system was given a temporary compliance exemption, but the exemption expired in 2018. A recent inspection in June 2020 found the deficiency was corrected.



Source: DDW Documentation

Despite being repeatedly identified as a significant deficiency, this water system deficiency went unresolved for almost 24 years.

Well casing elevation is important because contaminants can spill into the water source without proper protection. In this case, not only is the access to the well not elevated, but it is also in a pit with nothing to prevent spillage from entering the well. In 2013, the system requested a five-year extension to correct the deficiency but was denied due to the deficiency's "significant nature and the potential hazard to public health." Despite the initial denial, the water system was later granted a five-year exception that allowed the system to continue to operate with the deficiency.

Despite DDW's concern for the deficiency's risk to public health, we found no record of any additional corrective action being taken on the deficiency since the extension was requested. According to DDW records, the deficiency was corrected by June of 2020. DDW reported that this specific lingering deficiency was due to a lack of coordination between units within the division and employee turnover. While we did not find evidence of documented harm being reported from this

The Division of Drinking Water director is required to promptly notify water systems of violations and require corrections by specific dates.

case, we believe the lingering risk to public health should have resulted in some kind of enforcement action.

Utah Code 19-4-107 requires that when a violation of DDW rule or order has occurred, the director (or DDW board) shall promptly notify the system and issue an order requiring correction of that violation or a filing of an exemption by a specific date.

Statute also provides the division with the authority to assess penalties for water system violations. ***Utah Code*** 19-4-109 states that "Any person that violates any rule or order…is subject to a civil penalty of not more than $1,000 per day for each day of violation." Penalties can be increased for willful violators and those who fail to take corrective action.

DDW reported that assessing penalties as allowed by statute has been difficult because that process must go through the Drinking Water Board. Perhaps for that reason, DDW reports that it has never issued a fine or penalty. DDW's board review requirement recently changed with Senate Bill 88 passed in 2020, which allows the DDW director to assess penalties directly.

Although the Division of Drinking Water can issue penalties, the director reports that has not happened.

DDW Performance Tracking Can Improve Water System Compliance

DDW can improve performance tracking with the data they already collect by tracking water systems' time to compliance. DDW does not currently track how long it takes a system to become compliant even though the division has the data available to them. At least 2 programs at DEQ actively track time to compliance to ensure a timely return to compliance for their entities.

The Division of Drinking Water does not formally track the time it takes for systems to reach compliance.

We believe measuring time to compliance could provide the division and the department with valuable insight into effective division practices and help the division guide its continuous improvement processes. We believe continuous process improvement of DEQ's overall regulatory effectiveness would contribute to DEQ's mission of safeguarding and improving Utah's air, land, and water through balanced regulation. We recommend that the division begin tracking and reporting entities' time to compliance as a part of DDW's continual process improvement efforts.

DDW Should Regularly Review Compliance Exemptions

DDW does not periodically review compliance exemptions it has granted to water systems. Exemptions are increasing, but oversight over past exemptions granted is not. In the few cases where exemptions have been set to expire, DDW does not review the system afterward to see if the deficiency is still present. We recommend DDW periodically review compliance exemptions.

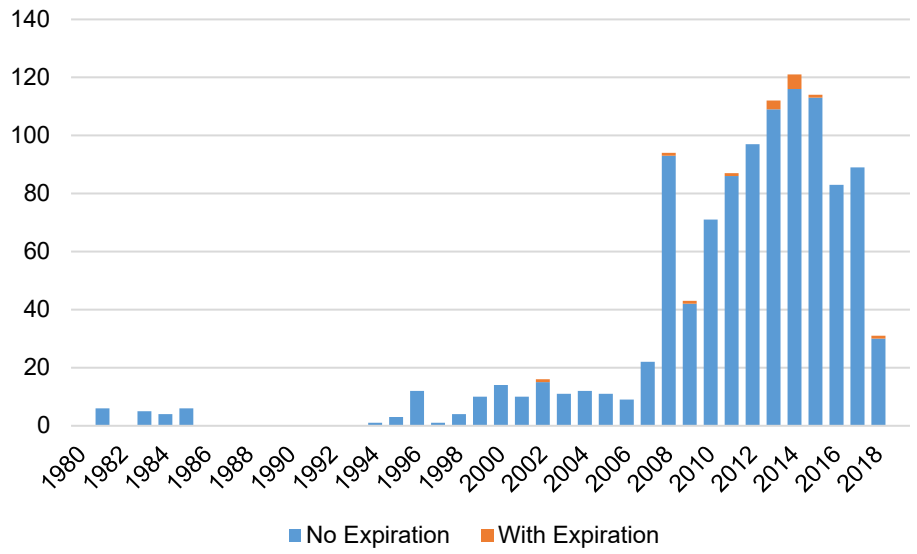
Exemptions allow water systems to continue to operate with system deficiencies.

An exemption (called an exception by DDW) allows a water system to operate with a significant deficiency without enforcement from DDW. *Utah Administrative Rule* R309-105-6(2)(b) states that "the [DDW] Director may grant an 'exception' to portions of [system facilities] standards if it can be shown that the granting of such an exception will not jeopardize the public health." Water systems are required to submit plans for mitigating health risks when requesting an exception.

DDW has 1,099 exemptions on record since 1981.

DDW has 1,099 deficiency exemptions on record since 1981. Figure 2.6 shows exemptions by the year they were granted. The figure also shows the exemptions that were given expiration dates, which will be discussed below the figure.

Figure 2.6 DDW Records Show 1,099 Compliance Exemptions Have Been Granted. The exemptions allow significant deficiencies to go uncorrected, sometimes indefinitely.



Source: DDW Exceptions Data

As Figure 2.6 shows, DDW drastically increased the number of exemptions granted in the 10-year period between 2008 and 2018. DDW staff told us the reason for the increase was an increased thoroughness in engineering review (leading to more exemptions being requested.) Staff also told us that exemption tracking improved during that time. According to staff, the exemptions drop off after 2018 was due to changes that streamlined simple water projects.

Only 14 of the 1,099 (1 percent) exemptions on record had an expiration date.

Also shown in Figure 2.6 is the number of exemptions that included an expiration date. DDW data shows that 14 of the total 1,099 exemptions (1 percent) were given an expiration date. Only two exemptions in the past five years had expirations.

The lack of expiration dates for exemptions makes the lack of periodic review more problematic. Without a mechanism for exemptions to be revisited, either through periodic review or through expiration, significant deficiencies posing public health hazards can persist indefinitely.

DDW has no formal process to review past exemptions, meaning an exemption granted in 1981 may have not been reviewed since.

The country club water system discussed earlier in the chapter was granted an exemption for a significant deficiency with one of its wells. That exemption was given after DDW denied the country club's request for a five-year extension in 2013, citing the ". . . significant nature of [the] deficiencies and the potential hazard to public health." In the denial, DDW told the country club it would consider granting a temporary exemption if improvements were made to mitigate the deficiency. DDW could not provide any evidence that any mitigation for the deficiency took place prior to or immediately following the exemption.

DDW's willingness to grant an exemption for an already established potential health hazard raises concerns about the validity of other exemptions the division has granted. Also concerning is the fact that the exemption was set to expire in 2018; four years after the country club committed to correcting the deficiency. Still more concerning is that DDW only became aware in June 2020, that the water system corrected the deficiency sometime after DDW's inspection in 2017.

The country club water system deficiency highlights both a lack of adequate enforcement by DDW and a need to follow up on any deficiency exemptions. We believe DDW should have reviewed this and all other deficiency exemptions to ensure that public health

continues to be safeguarded. We recommend that DDW develop a set schedule for reviewing existing exemptions so that risks to public health are more effectively mitigated.

Recommendations

1. We recommend that the Division of Drinking Water utilize its enforcement authority to correct significantly noncompliant water systems.

2. We recommend that the Division of Drinking Water track and report the time it takes for its regulated entities to reach compliance.

3. We recommend that the Division of Drinking Water periodically review water system exceptions for continued appropriateness.

Agenda Item 10(B)

Processed Enforcement Actions August 18, 2020						
PWS ID	PWS Name	PWS Type	Pop Served	IPS Pts	Rating	Rating Date
Finalized AO						
UTAH18028	SANDY CITY	Community	99750	2	Approved	03/11/1980
UTAH09069	PARADISE PARK	Non-Community	120	60	Not Approved	6/14/2018
UTAH25023	BRICKERHAVEN	Non-Community	150	55	Not Approved	9/5/2019
Corrective Action Systems						
UTAH25013	GOSHEN TOWN WATER SYSTEM	Community	925	195	Corrective Action	3/8/2016
UTAH15038	TAGGARTS GRILL	Non-Community	60	110	Corrective Action	2/6/2018
UTAH09077	BRISTLECONE	Non-Community	180	65	Corrective Action	1/23/2019
UTAH26049	SWISS ALPINE	Community	300	100	Corrective Action	4/14/2016
UTAH26026	BRYANTS FORK SUMMER HOMES	Non-Community	50	0	Corrective Action	6/11/2019
UTAH02078	M & J TRAILER HOME COMMUNITY	Community	27	10	Not Approved	8/20/2018
UTAH07067	SOUTH DUCHESNE	Community	128	250	Not Approved	4/24/2019
UTAH25133	JEHOVAHS WITNESS CHURCH	Non-Community	100	150	Corrective Action	9/16/2019
UTAH03006	COVE WATERWORKS	Community	52	125	Corrective Action	9/17/2019
UTAH22001	CLUFFWARD PIPELINE	Community	188	100	Corrective Action	9/30/2019
UTAH07061	VALLE DEL PADRES SUBDIV	Non-Transient	98	600	Corrective Action	11/13/2019
UTAH25096	VIVIAN PARK HOMEOWNERS	Community	365	50	Corrective Action	1/13/2020
UTAH06006	KAYSVILLE CITY	Community	27300	15	Approved (per rc)	3/10/2020
UTAH25184	BATEMANS MOSIDA FARMS	Community	90	100	Corrective Action	4/14/2020
UTAH26061	CAMP ROGER YMCA	Non-Community	210	140	Corrective Action	1/14/2020
UTAH26074	SOAPSTONE SUMMER HOMES	Non-Community	110	80	Corrective Action	5/22/2020
UTAH09074	LAKE FRONT ESTATES	Non-Community	25	85	Corrective Action	5/22/2020
UTAH02003	BOTHWELL	Community	360	55	Corretive Action	5/22/2020
UTAH02031	GIRLS HOME	Non-Community	300	400	Corrective Action	5/27/2020
UTAH29086	PINE VIEW HOMEOWNERS	Community	105	115	Corrective Action	5/28/2020
UTAH26064	MILL HOLLOW	Non-Community	220	95	Corrective Action	6/9/2020
UTAH26050	BACK FORTY RANCH HOUSE	Non-Community	70	5	Corrective Action	6/15/2020
UTAH25082	TIE FORK REST AREA	Non-Community	301	95	Corrective Action	6/16/2020
UTAH09001	ANTIMONY TOWN	Community	135	100	Corrective Action	6/24/2020
UTAH01015	GREENVILLE WARD	Non-Community	100	60	Corrective Action	8/11/2020
UTAH25179	RIGTRUP EGG FARM	Non-Transient	35	55	Corrective Action	8/11/2020
UTAH26033	DEER CREEK PARK LLC	Non-Community	150	540	Corrective Action	7/8/2020
UTAH02062	WILLOW CREEK WATER	Community	175	75	Corrective Action	8/11/2020
UTAH18005	COPPERTON IMPROVEMENT DISTRICT	Community	990	160	Corrective Action	8/11/2020
UTAH29009	NORDIC	Community	509	195	Corrective Action	7/8/2020
UTAH22114	BAR X MUTUAL	Non-Community	136	75	Corrective Action	8/18/2020
UTAH24049	PINE MEADOWS PUD	Community	224	50	Corrective Action	8/18/2020
UTAH27051	ZION CANYON	Community	3380	250	Corrective Action	7/8/2020
UTAH27052	ZION CANYON -EAST GATE	Non-Community	27	5	Corrective Action	7/8/2020
Failure to Comply						
UTAH25077	RIVERBEND GROVE, INC.	Non-Community	25	420	Not Approved	12/13/2016
UTAH11043	OLD MEADOWS	Community	48	285	Not Approved	04/18/2017
Not Approved Systems						
UTAH09084	JNB MARINE	Non-Community	36	60	Not Approved	9/17/2002

UTAH15001	CROYDON PIPELINE CORPORATION	Community	92	15	Not Approved	7/7/2015
UTAH10034	SUN ARCHVIEW LLC	Non-Community	506	35	Not Approved	4/18/2017
UTAH03005	CORNISH TOWN WATER SYSTEM	Community	270	60	Not Approved	9/27/2018
UTAH07023	YELLOWSTONE CAMPGROUND	Non-Community	25	135	Not Approved	9/27/2018
UTAH12028	HOUWELINGS TOMATOES	Non-Transient	150	455	Not Approved	5/29/2019
UTAH09016	BLUE SPRUCE CG	Non-Community	30	30	Not Approved	8/19/2019
UTAH15018	SOUTH ROBINSON SPRINGS	Community	28	105	Not Approved	9/9/2019
UTAH09028	CALF CREEK	Non-Community	300	65	Not Approved	9/9/2019
UTAH27093	CANAAN SPRINGS/BIG PLAINS SSD	Community	48	335	Not Approved	11/12/2019
UTAH04052	MADSEN BAY WATER COMPANY	Non-Community	30	100	Not Approved	12/17/2019
UTAH11012	ESCALANTE VALLEY HOUSING	Community	100	60	Not Approved	12/17/2019
UTAH18179	L & B RESOURCES	Non-Transient	100	640	Not Approved	12/17/2019
UTAH13001	ALTON TOWN WATER	Community	136	170	Not Approved	4/24/2020
UTAH07009	MT TABBY SPRINGS	Non-Community	434	135	Not Approved	4/24/2020
UTAH15029	STODDARD INN	Non-Community	25	285	Not Approved	4/24/2020
UTAH20073	INDIANOLA LDS CHAPEL	Non-Transient	320	135	Not Approved	5/12/2020
UTAH15015	MOUNTIAN GREEN	Community	60	95	Not Approved	5/12/2020
UTAH27086	NORTH VALLEY RANCHES	Community	25	200	Not Approved	6/2/2020
UTAH07039	ESCAPE RV-LAKESIDE PARK	Non-Community			Not Approved	

Current News

Current News
Presented to the Drinking Water Board
September 1, 2020

DRINKING WATER BOARD PACKET
Current News

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Provo referendum sponsors concerned brewpub could harm water treatment facility

By Genelle Pugmire Daily Herald

May 27, 2020

https://www.heraldextra.com/news/local/central/provo/provo-referendum-sponsors-concerned-brewpub-could-harm-water-treatment-facility/article_d02e93bf-b462-5242-9115-08975bd4cd80.html

The Class F beer license allowing ancillary breweries passed by the Provo Municipal Council is causing a virtual brouhaha between brewpub supporters and sponsors of a referendum on the issue.

Former council members and residents seeking a referendum on the Class F beer license dealing with ancillary breweries or brewpubs in Provo have less than one month to gather more than 3,100 signatures for it to be on the November ballot.

Referendum sponsors' concern

Kim Santiago, referendum sponsor and former councilwoman, is concerned residents aren't getting all the information on certain aspects of having ancillary breweries in Provo.

In an email letter sent to "neighbors," Santiago said, "We have several reasons for doing this but one reason that resonates with many is this; our sewer rates have, on average, increased 15% every year over the last 5 years and will increase the same amount for at least 3 more years just to take care of our current sewer infrastructure problems. 70% of the water in brewing is wasted and the waste is four times more potent/corrosive than residential waste."

During Santiago's time in office she and other former council members sponsoring the referendum voted in favor of a seven-year CIP plan to improve the wastewater treatment plant, which by Utah State regulations had to be brought up to higher specifications. The city is doing a pay-as-you-go remake of the plant.

That plan includes yearly increases in the utility fees to take care of those improvements.

However, Santiago is concerned that taxpayer money would be used if the ancillary breweries were to damage the treatment plant now and into the future.

"We (the citizens) are paying a lot of money and significant increases at this time when people are losing jobs," Santiago said. "Who is going to absorb those costs?"

Santiago also cites other articles she has gathered from other cities and brewers talking about the significance the corrosive wastes can have on the wastewater system.

Santiago is concerned Provo is not prepared for future wear and tear on the infrastructure.

“How are they going to pre-treat their (brewpubs’) waste before it enters the system?” Santiago asks.

Provo city ready

Mark Ogren, manager of the treatment plant, says it starts at the federal level on down.

“The Federal Environmental Protection Agency has regulations 40 CFR Part 403.8 requiring all Public Owned Treatment Works to regulate and control commercial and industrial wastewater entering their treatment system,” Ogren said.

Ogren added, the Utah Division of Water Quality and Provo City have adopted and implemented this wastewater Pretreatment Program.

“Brewing alcohol requires yeast, hops, barley and sugar which is high in carbonaceous, organic material. This organic material increases the pollutant levels in their wastewater,” Ogren said. “The higher levels of pollutants requires additional treatment cost. Provo City Code, Chapter 10.03 & 10.04 addresses these types of wastewater discharges. A brewpub would be required to install a treatment system that reduces their wastewater pollutant levels to limits outlined in City Code.”

Ogren said they will be issued a Wastewater Contribution Permit, allowing Provo’s pretreatment coordinator to monitor, sample and inspect their facility, processes and discharge waters.

“To assure compliance, Provo’s staff will sample their process wastewater through a dedicated pipe excluding sanitary wastewater,” Ogren added. “The sample results will be analyzed by a certified lab for various suspected pollutants. If the pollutant levels exceed Provo’s local limits, then a surcharge fee will be applied.”

If pollutant levels are extremely high or they don’t comply, Provo has legal authority to discontinue providing wastewater service and/or invoke an administrative penalty of up to $1,000.00 per violation per day, civil penalty up to $10,000.00 per violation per day, and/or criminal penalties.

Ogren noted that other cities are using their state- and federal-approved pretreatment programs to control wastewater and sludge discharged from brewpubs.

“We don’t believe any special code is required for brewpubs,” Ogren said. “Our staff needs to be notified of their location, treatment system and approve business licenses.”

Wayne Parker, chief administrative officer, said the CIP plans for the treatment plant were developed before the city even knew that brewpubs might be considered. So while they were not specifically included in the plans, the impact in the overall waste flow is not anticipated to be significant."

As far as residents having to foot the bill for any infrastructure issues, Parker said, "The impact from a brewery will not be paid for by the citizens of Provo as there are programs in place to make sure their waste streams are treated or are surcharged (billed separately) to make up that extra cost."

Given the requirement that a brewpub, like any other user that creates wastewater that has contaminants beyond those generated in a typical household — like restaurants with grease traps or manufacturers, or companies dealing with oil — they would have to pretreat the wastewater before it even hit the sewer system. The anticipated density of brewpubs in the downtown or elsewhere would likely not create any damage to the wastewater treatment process or plant, according to Parker.

When it comes to the issues involved with the referendum, Santiago said she wants citizens going in with eyes wide open and knowing all the information.

Santiago appears hesitant when it comes to believing Provo is ready to handle the issues brewpubs will bring.

"I don't want my taxpayer dollars to defend a law that can't be fulfilled," Santiago said.

Petition signatures due

According to Amanda Erchanbrack, city recorder, the referendum group needs to collect 3,157 valid signatures to be placed on November's ballot.

They are required to collect 7.5% of the 42,097 registered voters' signatures from throughout the city. Signatures cannot be centered in one area of the city.

The breakdown in the numbers needed from each voting district required by law is as follows:

District 1: 821

District 2: 387

District 3: 627

District 4: 813

District 5: 509

During public hearings on the zoning and licensing issue, Santiago, a nurse, said she was concerned for many reasons about the approval of the ancillary breweries.

Santiago said that in every ordinance placed on the dais, there are the “wherefores” and “whereas” clauses. The last whereas clause says, “This will further the health, safety and welfare of the city of Provo.”

“Why can’t we just embrace the city we are,” Santiago added. “There is a lot of talk about diversity. I argue we are more diverse by being ourselves, and not like every other city in America.”

USDA offers $281 million to improve water and wastewater infrastructure in 36 states

by KHGI

Wednesday, May 27th 2020

https://foxnebraska.com/news/local/usda-offers-281-million-to-improve-water-and-wastewater-infrastructure-in-36-states

WASHINGTON — An investment of $281 million in 106 projects is being used to improve water and wastewater infrastructure according to the U.S. Department of Agriculture (USDA) in rural communities in 36 states, including Nebraska, and Puerto Rico. The USDA is funding the projects through the Water and Waste Disposal Loan and Grant program.

Nearly $1.2 million will be used for a water project in the city of Crawford that will benefit 997 rural resident, according to the USDA Rural Development Nebraska State Director Karl Elmshaeuse.

“Having a water infrastructure that is reliable and safe is essential for rural communities. Rural Development is committed to helping rural Nebraska prosper,” said Elmshaeuser.

The investment in the city of Crawford will be used to improve the city’s water system through installation of distribution pipe, valves, fire hydrants, meters and parts of the collection system. The USDA says these improvements will ensure a safe water source and promote water conservation practices.

“These investments will bring modern, reliable water and wastewater infrastructure to rural communities. They will replace deteriorating, leaking water pipes with new ones and upgrade water handling systems that are decades old. These investments create jobs and improve public health and safety for our rural neighbors,” Brand said. “Under the leadership of President Trump and Agriculture Secretary Perdue, USDA is committed to partnering with rural communities to help them improve their infrastructure, because when rural America thrives, all of America thrives.”

USDA is funding projects in Alabama, Arkansas, California, Colorado, Georgia, Iowa, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Missouri, Mississippi, Montana, Nebraska, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Puerto Rico, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Washington, West Virginia, Wisconsin and Wyoming.

The department informs eligible applicants include rural cities, towns and water districts. The funds can be used for drinking water, stormwater drainage and waste disposal systems in rural communities that meet population limits.

Below are examples of water and wastewater projects in rural communities that will receive funding:

The city of Mabton, Wash., will use a $677,000 loan and a $296,195 grant to drill a new well. The city owns and operates a domestic water system that serves 632 active, metered connections. Ground water is currently pumped from two wells, delivered to an 800,000-gallon reservoir, treated by chlorination for disinfection and distributed to customers. The new well will augment water capacity, resulting in improved reliability.

The city of Auburn, Ky., will use a $6.1 million loan and a $2.6 million grant to replace the wastewater treatment plant to accommodate increased discharge from a new industrial facility. The expanded treatment plant will continue to provide safe and reliable wastewater treatment services for customers in rural Logan County while expanding capacity for economic development.

In Terlton, Okla., Pawnee County Rural Water District #2 will use a $1.7 million loan and a $597,000 grant to rehabilitate wells and bring the water treatment plant up to Oklahoma Department of Environmental Quality standards. These improvements will enable the district to reduce the amount of water it is required to purchase. This will help lower operating expenses and increase the efficiency and sustainability of the system. The district provides water to 2,174 rural residents.

The USDA informs that for application or eligibility information, view the interactive RD Apply tool or contact one of USDA Rural Development's state or field offices.

Water Watch: Weber Basin Water ensures that drinking water is safe and contaminate free

By Darren Hess

May 29, 2020

https://www.standard.net/lifestyle/health/water-watch-weber-basin-water-ensures-that-drinking-water-is-safe-and-contaminate-free/article_ffe94599-bb61-50d1-b322-14906510442f.html

It is a crazy time for all of us right now, donning a mask and maybe gloves to go to the store or anywhere in public for that matter. The COVID-19 pandemic has really changed our way of life for the last several weeks and may possibly change our lives even more moving forward. Hopefully, we can get back to some form of normalcy fairly soon.

Weber Basin Water Conservancy District has seen and heard that there has been a rush on purchasing bottled water during this pandemic. The district would like to address this concern that the public water supply could possibly become contaminated.

First, just a little insight into Weber Basin Water. The district is a large water provider in northern Utah delivering water to 700,000 people living in five counties. We deliver wholesale drinking water to approximately 50 cities and agencies, secondary or outdoor water to over 22,000 retail connections, irrigation or raw water to other agencies and agricultural users, and drinking water to residents in the upper mountain valleys by way of exchange.

Weber Basin Water would like to assure the public that drinking water supplies are safe. In order to certify that your drinking water is safe, our water professionals continue to come to work each day. These professionals include engineers, chemists, administration personnel, water treatment plant operators, maintenance personnel, lab personnel, distribution system operators and many others. These water professionals are indeed the unsung heroes who do their job day in and day out to guarantee that you have safe drinking water. They perform their duties without complaint and look forward to delivering this valuable resource to district customers.

In fact, in the event the COVID-19 pandemic continues to worsen, and the district needed to sequester employees at its water treatment facilities for seven days at a time or longer without seeing their families, we had employees volunteer for that duty due to their desire to serve the public. We would like to thank all our employees for their continued service and their

willingness to come to work each day and perform their duties despite the potential for possible infection.

The district also maintains a fully accredited water quality laboratory to ensure that it meets and exceeds the highest drinking water standards. The district continues to take the required compliance water samples and report those results to the Utah Division of Drinking Water. Our laboratory remains open and is fully functional as we continue to perform water quality tests for many agencies and cities throughout northern Utah. This is an essential service and one the district will continue to staff to ensure that drinking water supplies are safe.

The virus that causes COVID-19 is not a waterborne pathogen and has not been detected in drinking water. The district owns three conventional water treatment plants located from Ogden to Bountiful that are currently treating water for culinary purposes. Conventional water treatment methods that use filtration and disinfection will remove or inactivate viral and bacterial pathogens. Consequently, there are not any concerns that someone will contract COVID-19 from the drinking water supply. The district hopes this information will help to alleviate any concerns regarding this virus and the safety of our drinking water supplies.

Working together will guarantee a bright and safe future as the effects of the pandemic begin to ease.

ASU Law professor outlines critical role of water in world's biggest issues

https://asunow.asu.edu/20200528-asu-law-professor-outlines-critical-role-water-world%E2%80%99s-biggest-issues-pandemics

May 28, 2020

There is no magic wand that can solve all of the world's problems. But water might be the closest thing.

In his new book, Rhett Larson, the Richard Morrison Professor of Water Law at the Sandra Day O'Connor College of Law at Arizona State University, explains how water is the common element in so many of humankind's most pressing challenges.

Released in April, the book titled "Just Add Water: Solving the World's Problems Using Its Most Precious Resource" was written in part to correct widespread misconceptions about the scope of water law, something Larson has been dedicated to his entire professional life.

"People will ask me what sort of law I teach, and I'll say water law," he said. "And they'll often say, 'Oh, well that's very narrow.' And I'll just think, 'Narrow? How can water law be narrow?' Most of the world — and most of us — is water. What area of law could have broader importance and a broader impact than water law? So in some ways the book is about showing people just how central water is to virtually every problem on Earth."

To illustrate the point, Larson addresses social challenges chapter by chapter in his book, underscoring water's impact on a wide range of issues. For some, such as climate change, the connection to water is readily apparent. But perhaps less so for issues such as racism, gender inequality, terrorism, war, mass migrations and space travel.

"Water is at the center of all of those problems," Larson said. "So if we were to pick any problem on Earth to invest our time and energy into fixing, looking for the most impact in as many areas of our lives as possible, if we would just focus on water security — helping every person have enough clean water at acceptable costs and risks — that would go further in solving more problems than any other intervention we could have."

Pandemic underscores water's impact

Larson finished writing the book in September, several months before the first whispers of coronavirus began. But the book includes a prescient chapter on the pivotal connection between water and outbreaks of infectious disease.

Now, several months later, with the world in the throes of the COVID-19 pandemic, epidemiologists have been thrust into the public spotlight.

“And the beginning of modern epidemiology really began with a water question,” Larson said.

He explains the origins can be traced to John Snow, a 19th-century English physician (not the “Game of Thrones” character).

“In London in the 19th century, they were seeing repeated outbreaks of cholera, and a lot of the prevailing scientific theory at the time was that the cholera was spreading by miasma, contaminated air,” Larson said. “So the government would crack down on industries that they thought were polluting the air and making people sick. People would light large bonfires all over London to burn and clean the air.”

But Snow, Larson said, was able to isolate a critical variable involving water. He noticed that people who were living upstream of sewer discharges in the Thames River were largely safe, but people who lived downstream were the ones who were, predominantly, getting sick.

“In particular, there were large clusters of sick people around a well that was on Broad Street in London, and that was located near a septic system,” Larson said. “So his theory was that it must be coming from the sewage, it must be coming from water pollution. And legend has it that John Snow went to this pump on Broad Street and broke the handle off of it to keep people from drinking contaminated water and saved the city.”

More than a century later, Larson says, another London-based epidemiologist, David Bradley, further highlighted the intimate relationship between infectious disease and water. In 1972, Bradley and his colleagues unveiled the Bradley Classification, which places disease transmission into four categories, all directly linked to water:

Water-borne diseases, such as cholera and typhoid, which are transmitted through contaminated water sources.

Water-washed diseases, such as diarrhea, which occur when a lack of clean water compromises personal hygiene.

Water-based diseases, involving hosts that live in the water. Examples include schistosomiasis, a thin worm hosted by snails, and dracunculiasis, commonly known as guinea worm.

Water-related insect vectors, transmitted by insects that breed in water. Most notably malaria and dengue fever.

All of these infectious diseases are directly related to water availability and water security, Larson said, and he points out in his book that water policy is often siloed in what he calls the blue and the green agenda.

“Most water experts either focus on the blue agenda, which is water rights and getting people enough water supply, or the green agenda, which involves water quality and keeping people from polluting the water,” he said. “But I am arguing that people should also focus on what's called the red agenda. The red agenda is focusing on disease vectors.”

Larson points to the Diama Dam, built in the 1980s on the Senegal River in Africa. Although it addressed the blue agenda by improving water access, such projects can bring mosquito-breeding environments closer to humans, or expand snail habitat for more schistosomiasis transmission. A similar tradeoff is made right here in Arizona, as expanded water infrastructure heightens the risk of the mosquito-borne West Nile virus.

“And what happens when we say, ‘Well, we want to address mosquito breeding by putting pesticides in the water to kill mosquito larvae,’ but there are laws or regulations that prevent that discharge? That's focusing on the green agenda, protecting water quality and avoiding pollution,” Larson said. “But it might aggravate the red agenda, allowing more mosquitoes to breed. So the chapter is really about helping us find ways to reconcile the blue and the green agenda with the red agenda — making water law more sensitive to public health.”

Exploring solutions

The issues involving water and public health are complex and require due diligence and a delicate balancing act. Larson suggests allowing for emergency permitting procedures, which could result in greater water pollution, at least in the short term, in order to expedite actions intended to combat disease. He also recommends a public health analysis for any water infrastructure projects. Just as any large public works project is preceded by an environmental impact assessment, the ultimate impact on public health should be studied in advance of constructing canals or dams.

Larson also stresses the importance of integrating local stakeholders into decision-making processes on water policy. To point out how priorities might differ by location, he talks about disinfection byproducts, or DBPs, which are created when disinfectants such as chlorine are used to address organic pollution. DBPs like total trihalomethanes or bromides are carcinogenic, so they are closely regulated in the United States.

“But what if you have a small village in a developing community and you build a drinking-water treatment system?” Larson asks. “If there's a lot of organic pollution in that river and you treat it with chlorine, there's going to be disinfectant byproducts. But the reality is that in that community, they don't have the luxury of worrying about getting cancer in 60 years — they're worried about getting cholera tomorrow. So when we develop systems, we need to think about what the water quality standards should be in order to meet the concerns of that particular system. And if we have to trade off concerns — acute concerns for pathogens versus chronic concerns for carcinogens — sometimes that's a trade-off you have to make. And the only way to make it is by integrating local feedback and local stakeholder participation.”

Closer to home, Larson points to the current plight of the Navajo Nation – which spans portions of Arizona, New Mexico and Utah. Despite a largely rural landscape with low population density, the Navajo Nation has the highest per capita COVID-19 infection rate in the country, surpassing even New York City. It seems an anomaly for such a sparsely populated region to be so hard-hit by a disease spread by close human contact. But once again, Larson says, water is a critically important factor.

“They have small communities that are spread out very far, and it's difficult to provide a sustainable, affordable, adequate water supply,” he said. “So it's hard for people to be able to get enough water for the kind of hygiene that’s needed to fight this disease. And hygiene, washing our hands, is the most important thing that we can do.”

Larson points out the luxury that many Americans may take for granted, having nearly unlimited access to clean water from multiple points in our homes and businesses.

“One of the best ways that we can help our neighbors and our family in the Navajo Nation, and to make sure that this never happens again, is to find a way to get more resources to them, to be able to improve their water infrastructure and improve water security,” he said.

UTWARN Supports Rural Utah During COVID-19

Small systems receive big support from local network that provides backup operators, training and logistics

By Christian V. Jensen

https://deq.utah.gov/communication/news/utwarn-supports-rural-utah-during-covid-19

Throughout the COVID-19 pandemic response, drinking water and wastewater system operators have been on-duty providing vital services to homes, citizens and businesses across Utah. These tireless and dedicated individuals are frontline workers and ensure the protection of public health through safe drinking water and sewers. The infrastructure they operate is critical.

The Utah Water and Wastewater Agency Response Network (UTWARN) was set up to quickly respond to events like the coronavirus and ensure the seamless operation of water infrastructure. Administered by the Rural Water Association of Utah (RWAU), UTWARN provides operational assistance to water systems across the state.

For example, there may be systems, that due to an outbreak of COVID-19, require backup operators. In such a case, a neighboring water systems or resources from other cities could be called in to provide backup coverage. Additionally, UTWARN is compiling a pool of certified water and wastewater operators who are available at a moment's notice to provide emergency on-site assistance. Operators do not need to be a member of the UTWARN network to take advantage of the system. However, RWAU encourages systems to participate in this effort.

In May, UTWARN took steps to provide even more assistance by coordinating the delivery of 50,000 cloth facemasks for water operators and staff. These masks were manufactured and donated by the Hanes Corporation and are being distributed to drinking water and wastewater operators to increase their ability to maintain social distancing while continuing to provide their essential public service to all Utah communities.

"There may be systems, that due to an outbreak of COVID-19, require operational assistance," said Dale Pierson, executive director of the Rural Water Association of Utah—the organization that administers UTWARN. "Accordingly, the Utah Water and Wastewater Agency Response Network is compiling a pool of certified water and wastewater operators who might be available to provide emergency on-site assistance to other systems in the event a system has a personnel shortage."

The masks were attained through a joint effort of the US Environmental Protection Agency (EPA), the Federal Emergency Management Agency (FEMA), the American Water Works Association (AWWA), UTWARN and RWAU. The masks are being distributed to systems primarily by RWAU. Masks are available to all sizes and types of drinking water and wastewater systems on a first-come-first-served basis. Five points of distribution will be located throughout the state where systems may pick up masks they request.

The Utah Water and Wastewater Agency Response Network have selected the Central Utah Water Conservancy District as the main distribution site for the 50,000 cloth facemasks. Masks will also be available at Bear River WCD (Brigham City), Central Utah WCD (Orem), Price River WID (Price), Washington County WCD (Saint George), and Jordan Valley WCD (West Jordan). to drinking water and wastewater operators. Additional distribution times will be announced through June 5 or until the masks run out.

Water systems play a vital role in public health. Without this valuable infrastructure, it is hard to believe how life, even pre-coronavirus life, would be the same.

New front opens in the fight over the Lake Powell pipeline

By Brian Maffly

・Published: June 1
Updated: June 02, 2020

https://www.sltrib.com/news/environment/2020/06/01/new-front-opens-fight/

The water rights behind the proposed Lake Powell pipeline are not actually coming from the project's namesake lake, but rather from the major reservoir upstream on the Green River.

Now, Utah water officials' new request to overhaul those rights has handed opponents a fresh opportunity to thwart the proposed pipeline just as federal officials are about to release a long-awaited environmental review of the $1.2 billion project, which would funnel 82,000 acre-feet of water from Lake Powell to St. George.

The request, known as a change application, seeks to shift the the water rights' "point of diversion" from Flaming Gorge Reservoir to a spot 400 miles downstream behind Glen Canyon Dam. The change, which also keys into where and how the water would be used, is needed to fit the goals of the pipeline, which is to bolster water supplies for Utah's mushrooming Washington County.

The application was filed now because the timing made sense at this stage in the project's development and has no bearing on whether the pipeline gets built, according to Joel Williams, assistant director of the Utah Division of Water Resources.

Environmental groups hope to block or at least delay the project's approval if they can persuade Utah State Engineer Teresa Wilhelmsen to deny the change application filed April 13. Exhibit A in the many protests filed is the Colorado River system's chronically diminishing flows in the face of climate change, long-term drought and overallocation.

"This change application is predicated on this idea that there's plenty of water available for Utah in the Colorado River in the future," says Zach Frankel, executive director of the Utah Rivers Council. "We don't think there's going be enough water for Utah's share of the Colorado today."

In a related development, the federal Bureau of Reclamation expects to release a draft environmental impact statement Friday that will identify a "preferred" alternative for the pipeline, which would move water 140 miles through southern Utah and northern Arizona.

A 1922 interstate compact divvies up water flowing in the Colorado River and its many tributaries among seven basin states and Mexico. For decades, Utah has underutilized its share,

pegged at 23% of the Upper Basin's flows above 7.5 million acre-feet, while the three Lower Basin states have historically drawn water in excess of their allocations, largely to fuel urban growth and corporate agriculture.

The Lake Powell pipeline, authorized by the Utah Legislature in 2006, can be seen as the state's effort to put more of its share to use by sending it to rapidly growing Washington County. Kane County pulled out in April after concluding it wouldn't need to supplement its existing water sources for decades. Yet the new change application includes that county, which had planned to reap 4,000 acre-feet.

That indicates the Kane County Water Conservancy District hopes to keep the door open to tapping water flowing through the pipeline in the future.

The pipeline's diversion would use less than 6% of Utah's 1.4 million-acre-foot allocation of the Colorado, according to the state's change application.

"There are no vested Utah water rights that will impacted by the the project," the application states. "Approval of the application will provide economic benefit to the citizens of Utah and water security, drought protection, and long-term reliability for the citizens of southern Utah."

This water is critical to sustaining the "existing economy of the area and meeting future demand," it adds, and represents a "wise use" of Utah's allocation.

Environmental groups dispute that assertion.

"The proposed transfer would send scarce water to an area that profligately wastes it," the Center for Biological Diversity writes in its protest. "Rudimentary water conservation measures could supply the purported water needs of [the St. George] area. Thus, sending water to this area to fuel more growth is by definition wasteful."

Utah holds rights dating back to 1958 to water in the tributaries of the Green River but has yet to develop them. To fill the pipeline, the state promised a total of 86,000 acre-feet of these rights to the Kane County and Washington County water districts many years ago.

"Under the proposed change application, the water right will still be used for the construction of a public water supply project," Williams says. "The application seeks to change the place of use from the area served by the Central Utah Project to the fast-growing southern Utah region."

The language in the application proposes changing the place and nature of use from agriculture in the Uinta Basin to municipal uses in Kane and Washington counties.

Protect Yourself from Harmful Algal Blooms this Summer

By DEQ Communications Staff

https://deq.utah.gov/communication/news/protect-yourself-from-harmful-algal-blooms-this-summer

As warmer weather returns to Utah, residents are advised to take steps to protect themselves from harmful algal blooms and waterborne pathogens while recreating on the water. The Beehive State boasts outstanding rivers, reservoirs and lakes. On a hot day, few things satisfy like jumping in one of these waterbodies. Whether it's waterskiing, swimming or kayaking, getting wet is one of the top ways to pass the time during the summer months.

Water recreation, however, isn't without its risks. Some of those risks include cyanobacteria blooms and waterborne pathogens.

Cyanobacteria blooms, or harmful algal blooms, and waterborne pathogens pose health risks and can put a damper on fun summer plans. This year, Utah's Department of Environmental Quality's (DEQ) Division of Water Quality (DWQ) and the Department of Natural Resources (DNR) want to remind recreators to take steps to protect themselves while on the water.

"There are a number of factors that contribute to the development of harmful algal blooms. These include weather patterns, temperature and nutrients (nitrogen and phosphorus) in the water," said Division of Water Quality Director Erica Gaddis. "Before boating, swimming or fishing, be sure to check water conditions."

Harmful algal blooms occur when stagnant, nutrient-rich water warms up in the summer and becomes the ideal breeding ground for cyanobacteria — commonly known as blue-green algae. Under these circumstances, the bacteria can reproduce quickly, overwhelm the waterbody and in some cases produce skin, liver and nervous system toxins.

Harmful algal blooms may look like pea soup, green or blue paint, or have a scum layer or mats/foam floating on the surface. The water may also appear in shades of green, blue-green, yellow, brown or red.

Waterborne pathogens are bacteria, viruses and parasites that can occasionally be found in Utah waters. These waterborne pathogens can cause diarrhea, vomiting, cramps, fever and rashes. People can be exposed to these pathogens if they swallow water when they swim or eat food without washing their hands first.

The Division of Water Quality and local health departments sample waterbodies for waterborne pathogens throughout the recreation season (May to October) to keep the public, local health departments and other stakeholders informed of current conditions. DWQ posts updates on sampling results and health advisories as soon as the information becomes available at ecoli.utah.gov.

Due to state budget uncertainty, DWQ cannot monitor, sample or provide updates for harmful algal blooms on Utah waterbodies until at least July 1, 2020.

Because cyanobacteria blooms can appear quickly — sometimes in hours — and shift locations based on weather conditions, water recreators are asked to avoid:

Water that resembles spilled paint, antifreeze or grass clippings

Surface scum or film

Discolored or streaking water

Green globs on or below the surface of the water

Utah's waters offer unparalleled recreational opportunities and are generally safe. Water recreators, however, can take a few simple steps to protect themselves, their families and their pets while enjoying Utah's waters:

Don't swallow water when swimming

Avoid areas of scum when boating

Wash hands with clean water before eating or preparing food

When fishing, clean fish well and discard the guts

Don't let pets drink from scummy water

For concerns about possible human exposure, call your physician or the Utah Poison Control at 800-222-1222. For concerns about possible animal exposure, contact a local veterinarian. For concerns about possible livestock exposure, contact the Utah Department of Agriculture and Food at 801-538- 7100.

To learn more about harmful algal blooms, visit habs.utah.gov.

“Forever” Chemicals in Drinking Water Found to Cause Early Menopause, Cancers and Other Health Issues: Study

Carla Simmons Jun 03, 2020 10:09 PM EDT

https://www.sciencetimes.com/articles/25931/20200603/forever-chemicals-drinking-water-found-cause-early-menopause-cancers-health.htm

A recent study published by the Endocrine Society found that women who had higher levels of per- and poly-fluoroalkyl (PFAS) chemicals in their blood also experienced early menopause compared to women who had lower levels. Researchers have found that menopause occurred about an average of two years earlier than expected in women with high PFAS blood levels.

Aside from menopause, the contaminants were also discovered to cause a myriad of other health issues, including thyroid disease and cancers of different types.

PFAS are commonly called "forever" chemicals because technically, they can survive for an indefinite period. Because the chemicals do not break down in the body, they tend to accumulate over time.

Experts say that a lot of people are exposed to these chemicals from drinking water. According to the Endocrine Society, around 110 million Americans are at risk of exposure to these chemicals in tap water.

In May 2016, the United States Environmental Protection Agency published a document enumerating sources of exposure to these fabricated chemicals. The report revealed that some of the leading causes include drinking water and food.

The list also revealed that several consumer products such as water repellents, flame repellants, contact paper, particular food containers, and more were supplies of the chemicals.

Furthermore, scientists say that contaminants may come from different sources, such as non-stick cooking pans and the foams used to stop fires.

The U.K. National Health Service says that early menopause occurs when a woman's periods stop before the age of 45. Experts say it could happen naturally or could come as a side effect of specific treatments.

Furthermore, early menopause can also happen naturally if a woman's ovaries fail to make normal levels of certain hormones, particularly estrogen. This condition is also referred to as primary ovarian insufficiency or premature ovarian failure.

According to the researchers, early menopause can lead to certain problems concerning heart and bone health. Moreover, it could also decrease the overall quality of life.

Ning Ding, the study leader, explained that PFAS is widely scattered and can be detected almost everywhere. Once they enter the body, they stay there for a very long time.

Furthermore, this causes potentially harmful effects of the body, particularly with ovarian function, Ding adds. The authors urge that raising awareness about the issue is vital to reduce exposure to the said chemicals.

Water Filters: Yay or Nay?

The authors of the study say that, unfortunately, avoiding PMAS chemicals could be difficult. Another study conducted earlier this year found that while some water filters can remove these substances, others could also most likely increase exposure to them.

The study revealed that the most common types of filters, such as activated carbon filters, were less effective. On the contrary, whole-home water filtering systems were discovered to potentially increase the risk of exposure to the mentioned chemicals.

The paper also mentioned that several states in the U.S. are moving toward more rigid regulations toward maintaining quality drinking water for its citizens.

To cite an example, the New Jersey Department of Environmental Protection (NJDEP) adopted a Maximum Contaminant Level (MCL) of 13 parts per trillion for perfluorononanoic acid (PFNA) in late 2018. It was reportedly the first constitutional regulation of its kind.

However, despite increased awareness and prospective regulations regarding drinking water quality, PFAAs are still detected at high levels in treated drinking water time and again.

Something in the water: Pollutant may be more hazardous than previously thought

Date: June 5, 2020

Source: Johns Hopkins Medicine

Summary: Perchlorate, a chemical compound used in rocket fuels and other materials, may be a more hazardous pollutant than previously thought, says a new study.

https://www.sciencedaily.com/releases/2020/06/200605121514.htm

Sometimes toxins, such as hazardous wastes and industrial byproducts, seep into groundwater, the source of our drinking water. One such pollutant is perchlorate, a chemical compound used in rocket fuels, fireworks, fertilizers and other materials. The compound is thought to contribute to health issues in humans such as hypothyroidism, the decreased production of hormones from the thyroid gland, which can impact development.

In a new study published May 25, 2020, in the journal *Nature Structural & Molecular Biology*, researchers at Johns Hopkins Medicine, Vanderbilt University and the University of California, Irvine, report on the mechanism that perchlorate uses to impact and damage normal functioning of the thyroid gland.

The findings, they say, suggest that an acceptable safe concentration of perchlorate in drinking water is 10 times less than previously thought.

The researchers focused on how perchlorate blocks a main route by which iodide, the negatively charged form of the element iodine, enters thyroid cells. Iodide helps the thyroid make hormones that are essential to the body's regulation of metabolism, temperature and other important functions.

Thyroid cells control the incoming flow of iodide by using a protein channel called the sodium/iodide symporter, also known as the Na+/I- symporter or NIS. Like other cellular transport systems, a "lock-and-key" approach is used to move iodide, with NIS acting as the lock and sodium as the key. Sodium fits into NIS at two binding sites to unlock the channel, enabling iodide to pass through and accumulate inside a thyroid cell.

The team, led by L Mario Amzel, Ph.D., professor of biophysics and biophysical chemistry at the Johns Hopkins University School of Medicine, and Vanderbilt University researcher Nancy Carrasco, M.D., determined that perchlorate blocks the channel by latching onto the NIS protein and changing its shape. Less sodium binds to the misshaped channel, thereby significantly lowering the amount of iodide that can be moved inside thyroid cells.

The researchers studied how varying concentrations of perchlorate affects iodide transport by first growing thyroid cells that expressed the gene SLC5A5, which encodes the instructions for building NIS channels. Next, perchlorate and radioactive iodine were placed outside of some of the cells and just radioactive iodine outside the others. Finally, the researchers tracked how much glowing iodide was allowed to enter the cells in both groups. They found that there was much less iodide inside thyroid cells treated with perchlorate than in untreated ones, even at very low concentrations of the chemical.

In May 2020, the U.S. Environmental Protection Agency (EPA) ruled not to place regulations on the amount of perchlorate that can be allowed in drinking water. The findings from the new study strongly suggest that this environmental pollutant is more hazardous than previously thought, raising serious concern about the decision.

"We hope that these findings will prompt the EPA to change its mind," Amzel says.

National Ground Water Association & Other Associations Urge US EPA To Expedite Regulation Of PFAS

June 6th, 2020 by **Guest Contributor**

https://cleantechnica.com/2020/06/06/national-ground-water-association-other-associations-urge-us-epa-to-expedite-regulation-of-pfas/

Letter Sent to EPA Administrator Urges Science and Research To Be The Leading Factor In Determining PFAS Regulations

Westerville, OH — The National Ground Water Association and eight of the country's leading drinking water organizations are urging the U.S. Environmental Protection Agency (EPA) to move expeditiously as it evaluates drinking water standards for two per- and polyfluorinated substances (PFAS).

In a letter to EPA Administrator Andrew Wheeler, the National Ground Water Association (NGWA), Association of California Water Agencies (ACWA), Association of Metropolitan Water Agencies (AMWA), American Water Works Association (AWWA), Ground Water Protection Council (GWPC), Irrigation Association (IA), National Association of Water Companies (NAWC), National Rural Water Association (NRWA), and National Water Resources Association (NWRA) asked EPA to employ a holistic regulatory approach that protects source water from PFAS contamination, addresses public health concerns, and ensures public confidence.

In February, the EPA announced its proposal to regulate PFOS and PFOA, two PFAS compounds, and requested comment on regulatory approaches for other PFAS. In the absence of a federal standard, several states have moved forward with setting their own regulations for various PFAS.

PFAS are a large group of man-made chemicals used in consumer products and industrial processes. In use since the 1940s, they have properties that make them persistent in the environment.

"At NGWA we have always believed good regulations are based on sound science" said NGWA CEO Terry S. Morse, CAE, CIC. "The implications of regulating these substances will be far-reaching so it's crucial they are crafted with input from the scientific community."

Three years of testing found that 72% of testing detecting PFOS and PFOA sent to the EPA were found in groundwater.

The following requests are outlined in the letter to the EPA:

Provide the resources required to complete the technical and economic analyses necessary to support a proposed SDWA action for PFOA and PFOS.

Begin engagement with outside experts to develop and review a public health risk assessment for PFAS beyond PFOA and PFOS to guide determining which PFAS or groups of PFAS should be targeted for data collection and risk management measures.

Actively engage water systems, local government, state agencies, and other key stakeholders in the practical implementation of PFAS risk management including establishing the adequacy of analytical methods and capacity, effective risk communication, and sustainable treatment options, among other important factors.

Accelerate research on water treatment, occurrence, and health effects to support future decision making and contaminant prioritization.

Leverage available regulatory tools in other statutes to gather occurrence and health risk assessment data and organize them to support research and decision making, using regulatory tools that include the Toxics Release Inventory, Sections 4 and 8 of the Toxic Substances Control Act, and the Unregulated Contaminant Monitoring Rule.

US Senate passes bill to fund water infrastructure for Navajo Nation in Utah

By Connor Richards Daily Herald

Jun 8, 2020

https://www.heraldextra.com/news/local/govt-and-politics/us-senate-passes-bill-to-fund-water-infrastructure-for-navajo-nation-in-utah/article_89a3a089-07eb-5025-aa49-aaaf38eb35d2.html

The United States Senate passed a bill Thursday that would settle current and future water rights claims by the Navajo Nation in Utah and authorize $210 million in federal funding for water infrastructure to provide the Nation with clean drinking water.

The Navajo Utah Water Rights Settlement Act, sponsored by U.S. Sen. Mitt Romney, R-Utah, Sen. Martha McSally, R-Arizona, and Sen. Kyrsten Sinema, D-Arizona, would "settle a decades-long negotiation among the Navajo Nation, federal government and the State of Utah over water rights for Utah Navajos," according to a summary of the bill, and "demonstrates a commitment to working towards orderly, cost-effective, and fair Indian water right settlements in Western states."

"Passing this bill is an important part of keeping a longstanding promise by the federal government to Native American tribal members," the summary said. "It would significantly contribute to the water needs of the Navajo Nation in Utah — half of its population lacks indoor plumbing — and resolve a legal claim in a fiscally responsible way designed to prevent millions in additional legal costs."

The Navajo Nation, which spans across Arizona, New Mexico and southeastern Utah, has long lacked access to clean drinking water and water infrastructure.

According to the Navajo Nation Department of Water Resources, nearly a third of the Navajo Nation population "does not have access to clean reliable drinking water."

Additionally, the Navajo Nation has been devastated by the COVID-19 pandemic.

CNN reported on May 18 that the Navajo Nation had surpassed New York and New Jersey as having the highest per-capita COVID-19 infection rate in the country.

There have been 6,020 positive coronavirus cases and 277 deaths in the Navajo Nation as of Friday, according to the Navajo Department of Health.

“The COVID-19 pandemic has disproportionately impacted the Navajo Nation in our state, and the shortage of running water in nearly half of homes is contributing to the spread,” Romney said in a press release. “With this legislation, we will be able to provide access to water and wastewater facilities for the Navajo Nation and also provide the long-needed water infrastructure for its citizens.”

In addition to authorizing $210 million in federal funding for water development projects and settling all water rights claims by the Navajo Nation within Utah, the bill also would provide the Nation with the right to deplete 81,500 acre-feet of water a year from Utah’s apportionment of the Colorado River Basin.

The state of Utah would be required to contribute $8 million in installments over three years, according to a summary of the bill, and has already approved the funding.

Gov. Gary Herbert praised the bill and called it “the result of more than 15 years of good faith work between Utah leaders, the U.S. Department of Interior and the Navajo Nation.”

“It will create clean drinking water projects for our Navajo friends and certainly for Utah’s future water needs,” Herbert said in the press release.

Navajo Nation President Jonathan Nez said the coronavirus pandemic has “compounded” the “drinking water crisis on the Navajo Reservation” and asked the House to pass the bill “without delay.”

“As the Navajo Nation continues to struggle to address COVID-19, we welcome the passage by the United States Senate of the Navajo Utah Water Rights Settlement Act, which would provide desperately needed funding for clean drinking water to our members,” Nez said in the press release.

Rep. Rob Bishop, R-Utah, introduced a version of the bill in the House in January 2019. Utah’s other federal representatives, Republicans John Curtis and Chris Stewart and Democrat Ben McAdams, signed on as cosponsors.

There have been other efforts to assist the Navajo Nation during the pandemic. Last month, the Utah Farm Bureau raised money to deliver thousands of pounds of lamb to the Navajo Mountain, Mexican Water, Aneth and Oljato chapters of the Navajo Nation, which are each located in San Juan County.

Parasitic fungi keep harmful blue-green algae in check

Date: June 9, 2020

Source: Forschungsverbund Berlin

Summary:

When a lake is covered with green scums during a warm summer, cyanobacteria -- often called blue-green algae -- are usually involved. Mass development of cyanobacteria is bad for water quality. But cyanobacteria can become sick, when for instance infected by fungal parasites. Researchers found out that these infections do not only kill cyanobacteria, they also make them easier to consume for their natural predators. Fungal parasites thus help to slow down the growth of blue-green algae.

https://www.sciencedaily.com/releases/2020/06/200609111050.htm

When a lake is covered with green scums during a warm summer, cyanobacteria -- often called blue-green algae -- are usually involved. Mass development of such cyanobacteria is bad for water quality because they can deprive the water of oxygen and produce toxins. But cyanobacteria can become sick, when for instance infected by fungal parasites. Researchers from the Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB) found out that these infections do not only kill cyanobacteria, they also make them easier to consume for their natural predators. Fungal parasites thus help to slow down the growth of blue-green algae.

Blue-green algal blooms are an increasing problem in waterbodies worldwide: Higher temperatures and growing nutrient loads lead to excessive growth of cyanobacteria. These mass developments affect water quality because many cyanobacteria produce toxins and reduce the oxygen concentration in the water, sometimes leading to death of fish and other aquatic organisms.

The international team led by IGB found that algal growth can be controlled by parasitic fungi. "Many of these algae have long filamentous shapes or grow in colonies, which makes them difficult to be eaten by their natural predators," explains Dr. Thijs Frenken, first author of the study and researcher at IGB and the University of Windsor in Canada. Chytrids, a very common group of fungi, often infect cyanobacteria. The researchers have now shown that, in addition to infecting and killing algae, the fungi "chop" the algae into shorter pieces, making them easier to be eaten by small aquatic organisms. "We knew that fungal infections reduce the growth of cyanobacteria, but now we know that they also make them easier prey," says IGB researcher Dr. Ramsy Agha, head of the study.

Fungi as food supplements for zooplankton

The researchers showed that in addition to "chopping" infected cyanobacteria filaments and making them more vulnerable to predation by small organisms in the water, zooplankton, parasitic fungi themselves serve as a valuable food supplement. Chytrid fungi contain various fats and oils that are an important part of the diet of small freshwater organisms and are not present in blue-green algae. Parasitic fungi therefore serve as an important dietary connection between different levels of aquatic food webs.

"These results show how parasites, although usually perceived as something bad, also have important positive effects on the functioning of aquatic ecosystems," says Professor Justyna Wolinska, head of the IGB research group Disease Evolutionary Ecology.

Federal Lawsuit Could Limit Fluoride in Drinking Water

By **Olga Naidenko Ph.D., VP, Science Investigations**

WEDNESDAY, JUNE 10, 2020

https://www.ewg.org/news-and-analysis/2020/06/federal-lawsuit-could-limit-fluoride-drinking-water

A landmark federal lawsuit that **went to trial** this week in California could change the longstanding practice of adding fluoride to the drinking water supplies for 200 million Americans.

The lawsuit, brought against the Environmental Protection Agency by groups including the Fluoride Action Network, Food and Water Watch and Moms Against Fluoridation, would compel the agency to require local water utilities to stop adding fluoride to tap water.

The suit claims fluoridated drinking water presents an unreasonable risk to public health and can harm the developing brain of young children and babies, causing an IQ deficit. Renowned public health experts, such as **Dr. Philippe Grandjean** of the Harvard T.H. Chan School of Public Health, have raised concerns about fluoride neurotoxicity and **questioned the safety** of fluoride-contaminated drinking water.

The U.S. first began adding fluoride to drinking water in the 1940s in an attempt to combat widespread tooth decay.

In 2011, **responding to a lawsuit** by Fluoride Action Network, EWG and Beyond Pesticides, the Department of Health and Human Services recommended that water utilities reduce the amount of fluoride added to tap water by almost half, from 1.2 parts per million, or ppm, to 0.7 ppm. This new recommendation took effect in 2015.

The levels of fluoride added to tap water supplies can vary, but the Centers for Disease Control and Prevention has established 0.7 ppm as a health advisory limit. EWG analysis of test data for community water systems across the country found roughly 30 million Americans are likely drinking water with fluoride levels higher than the CDC's recommendation, as the news site **Fair Warning** reported Monday.

The CDC says if infant formula is mixed with fluoridated water, the **baby's teeth might be affected by dental fluorosis**, which appears as white spot markings on the teeth. EWG recommends that baby formula be mixed with fluoride-free water, especially for an infant whose diet consists exclusively of powdered baby formula.

Excess fluoride exposure poses health risks, including discolored teeth, changes in the bones, and harm to the brain and nervous system. In 2017, a **groundbreaking study** by a team of researchers in Mexico found that exposure to fluoride during pregnancy can harm IQ and cognitive development in children. Similar results were found in a recent **Canadian study**.

The case is being argued before federal District Court Judge Edward M. Chen under the Toxic Substances Control Act, which gives the EPA the authority to limit or ban toxic chemicals in the nation's municipal drinking water supply.

Utah Scientists Using Sewage to Track Coronavirus

Results from a sewage sampling pilot program holds the promise of providing early detection

By Jared Mendenhall

https://deq.utah.gov/communication/news/utah-scientists-using-sewage-to-track-coronavirus

Monitoring for coronavirus in Utah's sewage systems may offer health officials a tool for early detection of rising infections, monitoring overall community infection trends, and confirmation of low infection rates.

In April, a pilot program was launched to determine whether monitoring sewage could provide a useful tool for public health officials. Scientists at the Utah Department of Environmental Quality's (DEQ) Division of Water Quality (DWQ), the University of Utah, Utah State University, and Brigham Young University measured the genetic material of the SARS-CoV-2 virus — the virus that causes COVID-19 — in sewage entering ten treatment plants across Utah. These plants represent approximately 40% of Utah's population. Results from this pilot program are available today at wastewatervirus.utah.gov.

"The initial results show that we can not only detect the virus in sewage but we can see trends that are broadly consistent with known infection rates in Utah's communities," said Erica Gaddis, director of the Utah Division of Water Quality. "Monitoring virus in Utah's sewage systems offers a tool for early detection of rising infections, monitoring community infection trends, and confirmation of low infection rates. We hope that monitoring the sewage can help in prioritizing limited state resources such as mobile testing."

The virus is shed in feces by infected individuals, including those that are asymptomatic. Virus concentrations in the sewage can be measured by collecting a sample at the inlet of sewage treatment plants. The pilot program sampled sewage entering ten treatment plants in Utah. These plants were selected for the pilot study to capture data from different types and sizes of communities across Utah. Samples were collected from mid-April through May 2020.

Virus concentrations were coupled with wastewater flow and service area populations to estimate viral concentrations in units of SARS-CoV-2 copies per 100,000 people in the sampled area per day. This metric provides an indicator of changes in community infection rates in each treatment plant's service area.

Key Findings

The virus was not detected in the effluent — the water discharged to natural bodies of water — leaving the sewage treatment plants.

The virus was found in the influent — the water entering a sewage plant — of all ten sewage treatment plants that participated in the study and in 64% of 171 samples collected.

In late May, large increases of the virus were measured in the influent to the Logan and Hyrum sewage treatment plants. This trend mirrors the increase in active case counts reported for Cache Valley.

The highest concentrations of virus were found in urban areas.

Tourist communities showed higher concentrations per capita of virus than other areas of similar density and size.

Monitoring for the SARS-CoV-2 virus in Utah's sewage systems offers a tool for early detection of rising infections, monitoring overall community infection trends, and confirmation of low infection rates.

Sample collection was conducted voluntarily by plant operators at the following participating facilities: Central Valley Water Reclamation Facility, Hyrum City Wastewater Treatment Plant, Logan City Wastewater Treatment Plant, Moab Wastewater Treatment Plant, Orem Water Reclamation Facility, Price River Water Improvement District, Salt Lake City Water Reclamation Facility, Snyderville Basin Wastewater Reclamation District, Timpanogos Special Service District, and Tremonton Wastewater Treatment Plant.

With the completion of the pilot project, the State of Utah is committed to expanding and operationalizing this tool in the ongoing response to the COVID-19 pandemic. To see the results of the pilot program and its key findings visit wastewatervirus.utah.gov.

Utah Budget Uncertainty Pauses Algal Bloom Testing at Lake

Utah health and water quality officials will temporarily stop monitoring a lake for toxic algal blooms as a result of state funding uncertainty caused by the coronavirus pandemic.

By Associated Press, Wire Service Content June 17, 2020, at 12:09 a.m.

https://www.usnews.com/news/best-states/utah/articles/2020-06-17/utah-budget-uncertainty-pauses-algal-bloom-testing-at-lake

PROVO, UTAH (AP) — Utah health and water quality officials will temporarily stop monitoring a lake for toxic algal blooms as a result of state funding uncertainty caused by the coronavirus pandemic.

The state Division of Water Quality and Utah County Health Department will postpone the testing for Harmful Algal Blooms at Utah Lake until at least July 1, The Daily Herald reports.

In lieu of monitoring, officials encouraged visitors to the lake along Provo and neighboring towns to pay attention to signs warning of toxic algae.

The National Ocean Service, a division of the National Oceanic and Atmospheric Administration, said Harmful Algal Blooms occur when algae grow out of control and produce toxic or harmful effects on fish, shellfish, marine mammals, and birds.

Human illness related to the blooms is rare but can be debilitating or fatal, the agency said.

For most people, the new coronavirus causes mild or moderate symptoms, such as fever and cough that clear up in two to three weeks. For some, especially older adults and people with existing health problems, it can cause more severe illness, including pneumonia and death. The vast majority of people recover.

EPA Decides Not to Regulate Perchlorate in Drinking Water (2)

June 18, 2020, 7:56 AM; Updated: June 18, 2020, 11:57 AM

By Sylvia Carignan & Amena H. Saiyid

https://news.bloomberglaw.com/environment-and-energy/no-nationwide-drinking-water-standards-for-perchlorate-epa-says

The EPA won't set national drinking water standards for perchlorate, a rocket fuel chemical, a decision expected to result in litigation against the agency.

The Environmental Protection Agency acknowledged perchlorate can affect human health by interfering with the thyroid gland, but said the chemical doesn't appear in enough public water systems, or at high enough levels, to cause concern.

The agency's decision (RIN:2040-AF28), announced Thursday, will become final once it is published in the Federal Register.

"Our state partners deserve credit for their leadership on protecting public health in their communities, not unnecessary federal intervention." EPA Administrator Andrew Wheeler said in a news release.

While water utilities generally agree national regulations weren't necessary, environmental advocates have raised concerns about the agency's decision not to regulate a chemical that has known health effects. The Natural Resources Defense Council said Thursday it plans to bring the issue to court.

Health Risks

The chemical can be found in rocket fuel, fireworks, and fertilizers, and can cause developmental impairments in fetuses, according to the Government Accountability Office.

Long-term exposure to perchlorate can cause thyroid problems. Short-term exposure may cause eye and skin irritation, as well as nausea and vomiting, according to an EPA fact sheet.

Vanderbilt University researchers said in May that perchlorate inhibits the uptake of iodide, an essential component of thyroid hormones, in a more pronounced and fundamental way than commonly considered.

The Perchlorate Information Bureau, an industry interest group whose members include Aerojet Rocketdyne, American Pacific Corporation, Lockheed Martin, and Northrop Grumman, didn't immediately respond to a request for comment.

Legal Obligations

The EPA was bound by a 2016 consent decree, entered in U.S. District Court in the Southern District of New York, to issue a national drinking water regulation for perchlorate by December 19, 2019.

The agency asked for, and the National Resources Defense Council agreed, to extend the deadline to June 19, 2020. The environmental group said Thursday that it interpreted the agency's decision as a violation of the consent decree.

"NRDC plans to challenge EPA's refusal to comply with the consent decree in court," said Margie Kelly, a spokeswoman for the group.

Sen. Tom Carper (D-Del.), ranking member on the Senate Environment and Public Works Committee, also said the agency's decision defied the court order.

"EPA has abdicated its responsibility to set federal drinking water standards for a chemical long known to be unsafe, instead leaving it up to states to decide whether or not to protect people from it," Carper said in a statement.

An EPA spokeswoman said the consent decree no longer applies, and the agency will ask the court to terminate the agreement.

State vs. Federal Authority

The Safe Drinking Water Act was enacted in 1974 with the intention of setting mandates for public water systems where states had failed to take action, said Mike Keegan, an analyst for the National Rural Water Association.

Now, states are outpacing the EPA, and adopting policies they prefer, he said. But the federal agency can still use health advisories, which allows state and local governments to take immediate action on chemicals like perchlorate.

Federal drinking water regulations that come years after state or local action "will surely lead to unnecessary public confusion," Keegan said.

J. Alan Roberson, executive director of the Association of State Drinking Water Administrators, said it would be a "waste of national resources" if the EPA were to set standards that only affect one to three water utilities, as the agency estimated.

Diane VanDe Hei, chief executive officer of the Association of Metropolitan Water Agencies, said a national standard isn't necessary.

"Because several states where perchlorate contamination is most prevalent have already addressed the perchlorate contamination or developed their own drinking water standards for the

substance, AMWA agrees that a new national standard would appear to offer a minimal opportunity for further health risk reduction at this time," she said in a statement.

Brent Fewell, founder of Earth & Water Group in Washington, said appropriate action has been taken to regulate perchlorate.

"The states, EPA and utilities have done an exceptional job limiting risk exposure to perchlorate over the past few years thus obviating the need for a national standard," he said.

California and Massachusetts set enforceable limits for the chemical in drinking water in 2007 and 2006, according to the Water Quality Association, an Illinois-based association of residential, commercial, and industrial water treatment facilities.

"To say that because levels of perchlorate have decreased in two states that have set strict limits for perchlorate (CA and MA, at 6 parts per billion or ppb and 2 ppb respectively), the other 48 states don't need to be protected, is absurd," said Erik Olsen, NRDC's senior strategic director for health.

Withdrawals and Proposals

The EPA had concluded a month ago that perchlorate levels in drinking water were at safe levels after analyzing monitoring data collected since 2011, when under the Obama administration, it determined a nationwide standard was needed for the chemical.

Last year, the agency proposed four options for perchlorate regulation, which included withdrawing its 2011 finding to set national standards.

Other options included its then-preferred approach to set a standard of a maximum allowable limit of 56 micrograms of the chemical in a liter of water.

The EPA said Thursday it was going with its fourth option: to withdraw its 2011 finding that set the stage for setting drinking water limits.

Trump administration will not regulate rocket fuel chemical in drinking water

EPA claims federal government, states and public water systems have already taken steps to reduce perchlorate levels

Emily Holden *in Washington* Thu 18 Jun 2020 14.35 EDT

https://www.theguardian.com/environment/2020/jun/18/epa-water-perchlorate-trump-rocket-fuel

US environmental regulators have decided they will not put restrictions on perchlorate – a rocket fuel ingredient known to harm fetal brain development – in drinking water.

The Environmental Protection Agency argued that the federal government, states and public water systems have already taken proactive steps to reduce perchlorate levels.

Perchlorate is found in rocket fuel, explosives, fireworks and other products. It can also be naturally occurring.

The chemical disrupts the thyroid function and can harm the developing brains of fetuses and young children. The chemical has been found in the water, soil or sediment of 45 states, according to a 2010 Government Accountability Office study.

Andrew Wheeler, the EPA administrator, said the decision is "built on science", and "fulfills President Trump's promise to pare back burdensome 'one-size-fits-all' overregulation for the American people".

Health and environment experts quickly decried the move and promised to sue.

Betsy Southerland, the former director of the EPA's water office, called the decision "shameful", and "unconscionable". She said the EPA in a proposed standard "cooked the books" in evaluating how much perchlorate in drinking water is harmful, using "uncalibrated models and an insensitive health endpoint".

The EPA then determined that almost none of the drinking water in the US had high enough levels of perchlorate to be regulated, she said.

The agency is revoking its 2008 finding that no more than 15 parts per billion (ppb) of perchlorate in drinking water was safe. EPA in its proposed rule suggested 56 ppb of perchlorate in water would be safe.

Massachusetts and California have set their own standards far lower, at 2ppb and 6ppb.

Trump’s EPA was forced by a lawsuit to make a decision on perchlorate, following the Obama administration’s finding in 2011 that a standard was needed.

NOW SAFE: Tooele instructs residents to avoid drinking water running from taps

by Mark Klekas

Saturday, June 20th 2020

https://kutv.com/news/local/tooele-asks-public-to-avoid-drinking-water

SALT LAKE CITY (KUTV) — (UPDATE: Sunday at 11:40 a.m.) – Tooele city officials have lifted the advisement to avoid consuming public water. City workers will monitor the water system in question closely for the next ten days. They write:

Tooele City and Tooele County Health Department Officials are pleased to inform residents living SOUTH of VINE STREET and EAST of MAIN STREET that water samples have returned ALL CLEAR and residents may begin safely drinking the water. All other water systems continue to be safe.

The city is offering a $2,000 reward for information leading to the arrest of the person, or persons, responsible for breaking into water tank No. 5 between June 19 and 20, according to the Tooele City Facebook page.

Anyone with information about this incident is asked to call Tooele County dispatch at 435-882-5600 or the Tooele City Police Department at 435-882-8900.

(KUTV) – Tooele issued a water advisory for its residents on Saturday after a water break that potentially compromised the cleanliness of the water.

Those living south of Vine Street and east of Main Street were asked to not drink, make ice, brush teeth, or wash dishes with tap water until further notice. The contamination risk is still unknown, the city said.

The city was performing a daily maintenance check when city workers noticed a break in the water storage tank. After issuing the water advisory to residenters, city workers started to collect samples, flush the system, and clean the tank, the press release detailed.

Bottled water is encouraged until the city says otherwise; Tooele City Police Department, located at 50 N. Garden Street, is offering cases of bottled water to those who cannot buy them on their own. For more information, contact: 435-833-8220.

The city is expected to give an update on the situation within 24 hours of Saturday, June 20 at noon.

EPA ISSUES FINAL ACTION FOR PERCHLORATE IN DRINKING WATER

The U.S. EPA determined that perchlorate does not meet the criteria for regulation as a drinking water contaminant

BY CRISTINA TUSER JUN 22, 2020

https://www.wqpmag.com/emerging-contaminants/epa-issues-final-action-perchlorate-drinking-water

The U.S. EPA issued a final action regarding the regulation of perchlorate under the Safe Drinking Water Act (SDWA).

Perchlorate does not meet the criteria for regulation as a drinking water contaminant under the SDWA, reported the EPA in its recent press release. This means the agency is withdrawing the 2011 regulatory determination and is making a final determination to not issue a national regulation for perchlorate.

“State and local water systems are effectively and efficiently managing levels of perchlorate. Our state partners deserve credit for their leadership on protecting public health in their communities, not unnecessary federal intervention,” said EPA Administrator Andrew Wheeler.

The agency published a notice of proposed rulemaking in the Federal Register on Jun. 26, 2019 seeking public input on a range of options regarding the regulation of perchlorate in public drinking water systems.

In addition, the EPA requested comment on three alternative regulatory options, including:

An MCL and MCLG for perchlorate set at 18 micrograms per liter.

An MCL and MCLG for perchlorate set at 90 micrograms per liter.

Withdrawal of the agency’s 2011 determination to regulate perchlorate in drinking water.

According to the EPA, the main factors contributing to the decrease in perchlorate levels include: drinking water regulations for perchlorate in Massachusetts and California; federal and state remediation activities at perchlorate contaminated sites; and improved procedures for storage and handling of hypochlorite solutions used as drinking water disinfectants.

The agency also performed a new health impact analysis based on recommendations from the Science Advisory Board, which shows that the concentrations at which perchlorate may present a public health concern are higher than the concentrations considered in the 2011 regulatory determination.

“Based on this updated data and analysis, EPA is making a final determination that perchlorate is not found in drinking water with a frequency and at levels of public health concern to support a meaningful opportunity for health risk reduction through a national perchlorate drinking water regulation,” said the agency in the recent press release.

The EPA has provided steps water systems can take to mitigate the contaminant if and where it occurs, however.

The Federal Register Notice can be read here and additional supporting information is available in Docket ID No. EPA-HQ-OW-2018-0780.

Study finds higher arsenic levels in US correctional facility drinking water

*Reviewed by Emily Henderson, B.Sc.*Jun 22 2020

https://www.news-medical.net/news/20200622/Study-finds-higher-arsenic-levels-in-US-correctional-facility-drinking-water.aspx

The first nationwide analysis of drinking water quality in United States correctional facilities found average arsenic concentrations in drinking water in Southwestern United States correctional facilities were twice as high as average arsenic concentrations in other Southwest community drinking water systems. More than a quarter of correctional facilities in the Southwest reported average arsenic levels exceeding the U.S. Environmental Protection Agency 10 μg/L maximum contaminant level.

The study by Columbia University Mailman School of Public Health researchers Anne Nigra, PhD, and Ana Navas-Acien, MD, PhD, professor of environmental health sciences, is published in the journal Environmental Research.

Disparities and injustices in water quality may contribute to the excess burden of disease experienced by incarcerated and formerly incarcerated people. Approximately 2.2 million people, disproportionately Black and low-income men, are incarcerated in the U.S. Incarcerated populations are at elevated risk for several chronic diseases that are associated with chronic low- to moderate-arsenic exposure, including hypertension and diabetes.

More than 90,000 people rely on drinking water from community water systems (CWSs, public water systems that serve the same population year-round) that exclusively serve correctional facilities located in the Southwestern U.S., a part of the country where there are high concentrations of naturally occurring inorganic arsenic in domestic wells and in public water systems.

The researchers analyzed 230,158 arsenic monitoring records from 37,086 community water systems from the EPA's Third Six Year Review of Contaminant Occurrence dataset covering 2006-2011. Average six-year water arsenic concentrations in Southwestern correctional facility CWSs were more than twice that of other Southwestern CWSs and nearly five times the level of other CWSs across the rest of the U.S. (6.41 μg/L vs. 3.11 μg/L vs. 1.39 μg/L). Although the EPA goal maximum contaminant level (MCL) for arsenic is 0 μg/L, EPA set the current arsenic MCL at 10 μg/L given feasibility and treatment costs.

Tap water is likely the sole water source available to incarcerated populations, who lack access to alternative drinking water (e.g. bottled water, domestic wells) or point-of-use treatment devices in the event of compromised drinking water quality. Incarcerated individuals may also be

unaware of the arsenic levels in their drinking water despite EPA rules that mandate CWSs make yearly reports available to customers. "Mass incarceration is a public health crisis. People who are incarcerated have a right to safe drinking water. Correctional facilities with their own water systems need to reduce water arsenic concentrations as much as possible, even below current regulatory standards," says Anne Nigra.

The authors conclude: "Immediate, aggressive enforcement of water standards for water systems exclusively serving correctional facilities is critical to protect the health and human rights of all incarcerated persons, including adolescents, pregnant women, and the young children of incarcerated women."

Tribes take federal government to court over water-quality rules

By: Howard Fischer, Capitol Media Services June 23, 2020

https://azcapitoltimes.com/news/2020/06/23/tribes-take-federal-government-to-court-over-water-quality-rules/

Two Arizona tribes are suing the federal government over the decision by the Trump administration to dilute water quality rules.

The lawsuit filed in federal court in Phoenix claims the Environmental Protection Agency and the Army Corps of Engineers, at the direction of the president, repealed Obama-era regulations defining the scope of the protections of the Clean Water Act. The net effect of this revised Navigable Waters Rule, which technically took effect Monday, would eliminate federal oversight of pollution into small and ephemeral streams and washes as well as adjacent properties.

What makes that significant, the lawsuit says, is that pollutants that will now be able to be discharged into these small streams eventually will wind up in the larger rivers that clearly are covered.

Attorneys for the tribes said the effects would be even immediate in the arid Southwest.

“The Navigable Waters Rule would strip away protections for thousands of miles of ephemeral streams, including the vast majority of surface water that crisscross the Pasqua Yaqui Tribe and Tohono O’odham Nation reservations and provide a critical source of surface flows,” the lawsuit states.

“The rule would also exclude headwater ephemeral streams, such as those in the Santa Rita Mountains that Pascua Yaqui and Tohono O’odham members visit to gather traditional materials and offer prayers for their ancestors.”

The lawsuit asks a federal judge to set aside the new changes.

Molly Block, spokeswoman for the EPA, said her agency is reviewing the new filing. But she defended the changes.

“EPA and the Army (Corps of Engineers) developed the rule to protect the navigable waters and their core tributary systems for the entire country while respecting our statutory authority,” she said.”The rule strikes the proper balance between state and federal jurisdiction and is designed to end the confusion that has existed for decades.

Block also noted that a federal court in California last week denied a request by 17 states to block the rule from being implemented as scheduled while that case is litigated.

Conversely, a federal judge in Colorado enjoined enforcement of the rule — but only in that state.

While the tribes are trying to have the changes voided, David Godlewski, president of the Southern Arizona Home Builders Association said his members and the national organization support what the Trump administration did, saying the prior regulations were unnecessary — and expensive.

“There are a number of local environmental ordinances that prevent you from building in washes,” he said. “There comes a point at which you’re regulating for the sake of regulation.”

All that, Godlewski said, requires everything from hiring consultants and setting aside land.

“And that drives up the cost of land development and, ultimately, the cost of housing,” he said. “And it makes housing less affordable.”

At the heart of the battle is the Clean Water Act, adopted originally in 1972, which established the basic structure for regulating the discharge of pollutants into “navigable waters,” what are considered “waters of the United States.”

Attorneys for Earthjustice, which filed the lawsuit for the two Arizona tribes and three others elsewhere in the country, say that when Congress adopted the law it intended to provide the “broadest possible” definition of “navigable” waters to provide the broadest protection.

They concede that the U.S. Supreme Court has ruled that the law does not protect every wet area, like water-filled abandoned gravel mining pits. But they said the justices have consistently affirmed that both the EPA and the Corps have broad authority to protect not just navigable streams but also “non-navigable waters that are adjacent, connected, or have a significant nexus to navigable waters.”

In 2014 the two federal agencies published a rule to define “waters of the United States.” Those rules, the lawsuit states, were based on an EPA-commissioned Science Report which concluded that “all tributaries, including perennial, intermittent and ephemeral streams, or dry washes, exert a strong influence on the integrity of downstream waters.”

The rules protected tributaries and had what the challengers say is a broad definition of “adjacent wetlands” which also would be protected.

Attorney Stuart Gillespie said the rules are designed to carry out the intent of Congress.

“It recognized that waterways are hydrologically connected,” he said.

“In order to protect the navigable waters of the United States you needed to protect the tributaries, the headwater streams that support and provide the life blood that sustains our downstream waters,” Gillespie said. “It’s critical that Clean Water Act protections extend not just to rivers that flow year-round but also all the ephemeral streams.”

All that changed, the challengers said, after the president ordered the agencies to replace the regulations. That resulted in what is called the Repeal Rule.

What’s wrong with that, the lawsuit states, is that neither the EPA nor the Corp provided any explanation or analysis, or refused the original studies and research that resulted in the 2014 rule.

“The agencies identified no different or new scientific evidence, and provided no discussion of or explanation for how or why the Science Report and the technical information in the administrative record support the Repeal Rule,” the challengers argue. “The agencies also failed to explain why they disregarded the Science Report and their earlier findings and conclusions based on it.”

Among the problems, according to the lawsuit, is that the new rules limits federal jurisdiction by not only narrowing the definition of tributaries but also providing new definitions of ephemeral or intermittent tributaries. What that does is exclude “waters that flow only in direct response to precipitation in a typical year.”

Even that is problematic, according to challengers, because it defines “typical year” meaning when precipitation and other climatic variable are within the “normal periodic range … for the geographic area.” Only thing is, the lawsuit states, the rule doesn’t define what is “normal periodic range” and doesn’t provide guidance on what is the relevant geographic area.

Water experts warn about drought after Utah's third driest spring on record

By Connor Richards Daily Herald

Jun 24, 2020

https://www.heraldextra.com/news/local/water-experts-warn-about-drought-after-utah-s-third-driest-spring-on-record/article_1b6c867d-2eee-565f-aed6-470493610497.html

Water and weather experts are warning of "moderate" to "severe" droughts throughout nearly all of Utah after the state experienced one of its driest spring seasons in recorded history.

Glen Merrill, a meteorologist with the National Weather Service's Salt Lake City office, told the Legislative Water Development Commission on Monday that precipitation levels throughout most of Utah were "well above normal" heading into the year due to an abnormally wet spring season in 2019 — the second wettest since the late 1800s.

Normal temperatures in northern Utah and below-average temperatures in southern Utah for the month of March made experts optimistic about the upcoming months.

"And couple that with still quite decent normal to above-normal precipitation, and we headed into April looking really good," said Merrill.

The rosy picture dulled between April 15 and May 15, according to Merrill, a time period where Utah was "largely precipitation-void."

"And that was a contributing factor in how our water year has started to take a little bit of a nosedive," Merrill said.

Merrill told the legislative commission that a combination of above-normal temperatures and below-normal precipitation in June has created a drought that is "starting to expand across the state."

"We were nearly drought-free after last year's spring going into the summer season across the area, because … we had our second wettest spring on record," the meteorologist said. "This year, by the way, was the third driest on record."

A map of monthly precipitation prepared by the Colorado Basin River Forecast Center shows that vast areas of southern and central Utah had between 0% and 30% average precipitation in May.

This is the case for nearly all of Utah County, with the exception of northern parts of the county that had 30%-50% average precipitation.

Additionally, temperatures throughout most of the state, from north to south, were 1-3 degrees Fahrenheit above average during the month of May.

A United States Drought Monitor map shows that, as of June 16, nearly all of Utah is designated as having a "moderate drought" intensity.

The western half of Utah County, including Eagle Mountain, Saratoga Springs, Cedar Fort and Fairfield, is listed as having "severe drought" intensity.

Northeast Juab County, just miles away from the southeast corner of Utah County, is the only area in the state designated as having "extreme drought" intensity.

The only regions in the state that have no drought intensity are Daggett County and the northern parts of Uintah and Box Elder counties.

"Pretty much the whole state (is) in some sort of elevated drought status," Merrill told the commission. "And that's a direct result of the weather conditions over the last few months being exceptionally warm and dry."

Utah Division of Water Resources Engineer Laura Haskell told the commission that reservoirs throughout the state "are struggling with capacity," adding that water levels in most of these reservoirs have peaked for the year and are starting to decline.

"We'd like to see these reservoirs full for the year starting off the summer," Haskell said. "Unfortunately, they aren't in some areas."

Abnormally little rain and snowfall has led to increased wildfire risk in Utah County and throughout the state.

Kaitlyn Webb, a wildfire communications specialist with the Utah Division of Forestry, Fire and State Lands, told the Daily Herald Thursday that the dry spring season has resulted in "a much busier" wildfire season than normal.

New process could safeguard water quality, environment and health

by Swansea University

JUNE 24, 2020

https://phys.org/news/2020-06-safeguard-quality-environment-health.html

A research team at Swansea University have developed a new method for fast removal and detection of wastewater pollutants that come from everyday pharmaceuticals like paracetamol, ibuprofen and aspirin, which could help minimise their impact on the environment.

The all-female team of (bio)chemists from the Medical School, in collaboration with international company, Biotage, have published the research in *Analytical Science Advances*. The research outlines how they successfully developed a single process for separating and quantifying a wide range of different pharmaceuticals and chemicals from personal care products found in everyone's bathrooms that can end up in wastewater sludge and blood plasma. The new method will speed up our understanding of which pollutants may be released and could help reduce the negative effects they have on the wider environment.

First author Dr. Rachel Townsend said: "Many people don't really think about what happens to these drugs once they've taken them. Like any foodstuff, once a drug has been taken, it is excreted from the body and ends up in a wastewater treatment plant.

"It was thought that pharmaceuticals were degraded during the treatment process, but research has shown this isn't the case. And of course this becomes a problem as the treated wastewater is released into water courses such as rivers and streams, while 80% of treated sludge is also recycled back onto agricultural land as fertiliser and potentially onto future food crops."

There have been global reports of the adverse effects of pharmaceuticals on the animal kingdom. Diclofenac, for example, a non-steroidal anti-inflammatory has caused multiple species of vulture in Asia to become critically endangered, while the Indian long-billed vulture and red-headed vulture populations have decreased by 97-99%. The female contraceptive pill has caused the feminisation of male fish, which has caused populations to decrease rapidly over 2 years. There are also concerns that that sludge used in agriculture could impact on human health too.

The team have pioneered one process that uses a sample preparation method, called QuEChERS, with mass spectrometric detection. Using this process, they were able to detect, extract and quantify a range of pharmaceutical compounds and personal care products from a variety of sources, such as wastewater sludge, where previously multiple extraction methods were needed, making it more efficient in time and resources needed.

The researchers could then get a clearer picture of the factors controlling how antimicrobial resistance develops and spreads in the community, and this knowledge has the potential to help safeguard water quality, the environment and health.

The results will now help to inform the Chemical Investigation Programme, which is a British research initiative that contributes to the European Union Directive for environmental management. With enough research and data, changes can be made to the wastewater treatment process to ensure these everyday pollutants are degraded or removed with the hope of preventing any further impact on the wider environment and ensuring human health remains unaffected.

Co-author, Dr. Claire Desbrow from Biotage said: "The newly developed method fits perfectly with our portfolio of sample preparation products. Being able to clean up complex human, food or environmental samples fast and efficiently will be of benefit to not only researchers, but also to industrial, environmental and regulatory laboratories across the globe."

Navajo Nation, environmentalists fight rollback of U.S. water protections

By Susan Montoya Bryan | The Associated Press

・Published: 3 days ago
Updated: 3 days ago

https://www.sltrib.com/news/environment/2020/06/25/tribe-environmentalists/

Albuquerque, N.M. • The nation's largest Native American tribe and several environmental groups are waging a legal challenge to a revised federal rule that lifts protections for many streams, creeks and wetlands across the U.S.

The rule, which took effect Monday, narrows the types of waterways that qualify for federal protection under the half-century-old Clean Water Act. As a result, critics say the number of waterways across the Navajo Nation and other arid states in the West that were previously protected under the act have been drastically reduced.

Public health advocates, environmentalists and some Western states, among other opponents, had promised court fights once the rule was imposed, saying the rollback will leave many of the nation's millions of miles of waterways more vulnerable to pollution.

"At this point in time, with climate change occurring around the world, it's more prudent than ever to protect our land, water and air," said Navajo President Jonathan Nez. "We, as Diné People, have a duty to preserve and conserve our natural resources to ensure that our future generations have access to clean water, air and land."

The tribe filed its claim Monday in U.S. District Court in New Mexico.

Amigos Bravos, the New Mexico Acequia Association and the Gila Resources Information Project followed with their own appeal Tuesday and the Environmental Integrity Project filed a separate claim in Washington, D.C. on behalf of four other environmental groups. The cases name the U.S. Environmental Protection Agency and the Army Corps of Engineers, the federal agencies in charge of administering aspects of the rule.

In adopting the change, federal officials have argued that the previous Obama-era rule imposed unnecessary burdens on property owners and businesses and that the change will bring regulatory certainty for farmers, homebuilders and landowners.

Some of the groups contend New Mexico is disproportionately affected because so many of its small streams flow only during wet times of the year.

Paula Garcia, the executive director of the New Mexico Acequia Association, said communities around the state rely on traditional irrigation systems that are fed by snow, rain and runoff for crops and livestock. With protections removed for the seasonal waterways that feed the acequia systems, she said agricultural livelihoods will be put at risk.

Rachel Conn with Amigos Bravos said the rule protects the interests of polluters. “The Trump administration has opened the pollution floodgates,” she said.

Under the new regulation, permits are no longer necessary for discharging pollution into many rivers, lakes and streams. Charles de Saillan, an attorney at the New Mexico Environmental Law Center, said the effects could be felt by a number of businesses, from rafting companies to community farmers.

On the Navajo reservation, which spans parts of New Mexico, Arizona and Utah, officials say there already are businesses not complying with tribal and federal environmental laws and the revised rule won't help bring them into compliance.

“Since the inception of the Navajo Nation Environmental Protection Agency’s water programs, our main purpose and goal has always been to protect our nation’s water sources. However, our job becomes difficult when the federal government rolls back environmental regulations in favor of polluters,” said Ronnie Ben, who oversees the tribal agency’s water programs.

New Mexico was among the states that went to court in May seeking to keep the rule from taking effect.

At the time, New Mexico Environment Secretary James Kenney warned that the rule would leave nearly 90% of the state’s rivers and streams and about 40% of its wetlands without federal protection. He predicted that would “devastate New Mexico’s scarce and limited water resources.”

The state had pointed out in comments previously submitted to the federal government that New Mexico has no state protections to fall back on. New Mexico is one of three states that don’t have delegated authority from the EPA to regulate discharges of pollution into rivers, streams, and lakes.

Officials begin pilot testing treatments to combat Utah Lake's issues with harmful algal blooms

By Sahalie Donaldson Jun 27, 2020, 7:00am MDT

https://www.deseret.com/utah/2020/6/27/21300502/officials-begin-pilot-testing-treatments-algal-blooms-utah-lake

SPANISH FORK — Officials are pilot testing two different treatments at Utah Lake in an effort to beat back algal blooms that have hampered recreation throughout the past couple of summers.

The cyanobacteria, or blue-green algae, contain toxins that can cause damage to the liver or nerves. September 2019 saw a rise of algal blooms that led the public health department to issue a warning urging people to avoid contact with Utah Lake's water. The warning remained in effect throughout the month.

In addition to being a public health hazard, algal blooms can be harmful to aquatic life. Typically environmental leaders monitor blooms to see if bacteria levels reach a certain threshold, and if they do, they issue warnings or closures to certain areas — sometimes even a body of water as a whole. However, health and water quality officials are not currently able to monitor or provide updates on Utah waterbodies until at least July 1 due to state budget uncertainty caused by COVID-19.

Utah Lake is the third-largest freshwater lake in the U.S. west of the Mississippi. It's a hot spot for recreation along the Wasatch Front during the summer, but public use is sometimes severely impacted by algal blooms.

"Anytime folks hear there is an algal bloom that has the potential to have an impact on health, we see visitation drop off almost entirely," said Eric Ellis, Utah Lake Commission executive director. "What's interesting is that most people are very aware of blooms and occasional blooms or potential for blooms on Utah Lake, but many don't realize this is a statewide, nationwide issue."

He said he hopes the pilot studies will come up with temporary fixes to respond to the issue while officials work to determine a long-term solution to address the problem of algal blooms itself.

"We really just wanted to know what treatments and innovative technologies were available for treating algae on the lake," Ellis said. "We are approaching the long-term solution of this through the Utah Lake Water Quality study but we recognize that in the interim, there is a large demand

to reduce the frequency or the scope of the blooms on the lake year in and year out as the recreation season begins."

Pilot testing was deployed in Lincoln Beach — the southeastern portion of the lake — last week to great results. Just four hours after treatment the water was the clearest its been in a long time, Ellis said.

Officials recently launched an airboat to distribute the treatment in Lincoln Beach across the marina's surface. The chemicals, according to Ellis, are self-dispersing, but to speed up the process officials dropped it throughout the marina rather than one central location.

The second treatment will take place in the near future at the northeastern part of the lake, Lindon Marina. Deployment will be similar, though the treatment differs slightly.

Ellis said treatments will span the rest of the summer and will be deployed on an ongoing basis in conjunction with the presence of algae for a threshold based treatment regime.

Ellis said treatments will have no impact on public access. Lincoln Beach and Lindon Marina remain open — locations that were selected for the pilot program because they are common hot spots for algae blooms and are moderate enough in size to make testing manageable.

Utah Lake is enormous, so doing a blanket treatment on the entirety of the lake would not be efficient, Ellis pointed out.

"Rather they would design a system that was able to track where blooms were starting and kind of treat them at their source rather than a broader scale," he said about possible future efforts.

Ellis said the public should be aware of signs posted at Utah Lake's access points instructing visitors about the harmful algal blooms.

"There's the occasion for isolated blooms that will take place miles from where you intend to recreate," he said. "As long as you keep your eyes peeled, you can avoid by and large any of the blooms on the lake. They are usually taking place at a quiet, stagnant corner of the lake that boaters normally don't ever reach."

The treatments are being funded through a 2019 appropriation from the Utah Legislature issued to fund research and combat the ongoing algal bloom problem.

"Utah Lake is open. This is a perfect time of the year for people to go out and try the lake out. It's full — it's an uncommon thing for Utah Lake to be at its full stage," Ellis said. "The water is nice, it's perfect for recreating right now."

Talks begin on dwindling Colorado River

By Felicia Fonseca, Associated Press | Posted - Jun. 29, 2020 at 10:15 a.m.

https://www.ksl.com/article/46770998/talks-begin-on-dwindling-colorado-river

FLAGSTAFF, Ariz. (AP) — Arizona is getting a jump start on what will be a yearslong process to address a dwindling but key water source in the U.S. West.

Several states and Mexico rely on the Colorado River for drinking water and growing crops. But climate change, drought and demand have taken a toll on the river that no longer can deliver what was promised in the 1920s.

Arizona, New Mexico, Colorado, California, Utah, Wyoming and Nevada have been operating under a set of guidelines approved in 2007. Those guidelines and an overlapping drought contingency plan will expire in 2026.

Arizona water officials gathered Thursday to outline a plan for what comes next. Other states in the river basin have had more informal discussions.

“Hold on to your seats because the reconsultation will be technical and complicated, and it will take a long time,” said Ted Cooke, general manager of the Central Arizona Project, who is co-chairing Arizona’s effort.

Meanwhile, the U.S. Bureau of Reclamation is reviewing the effectiveness of the 2007 guidelines that address shortages and surpluses of water, and efforts to conserve water in Lake Mead along the Nevada-Arizona border. A draft is expected in August, and a final report in December.

“It’s prudent water management to review how well something has worked before determining what might replace it,” said Carly Jerla of the Bureau of Reclamation.

When those guidelines went into effect, the river had been in drought conditions for several years. It hasn’t let up. A drought contingency plan approved by the Western states last year was meant as a stop-gap. It requires Arizona, Nevada and Mexico to prop up Lake Mead earlier than under the 2007 guidelines. It also looped in California for water cuts.

A Reclamation audit published last month found that water use in the Colorado River’s lower basin dropped by more than 575,000 acre-feet from 2018 to 2019, a level not seen since 1986. That allowed Lake Mead and Lake Powell — key indicators of the river’s health — to increase by several feet but both remain well below capacity.

As of last week, Mead was 41% full. Powell, along the Arizona-Utah line, was 53% full.

Arizona is looking to build upon the work done on the drought contingency plan. The committee of about three dozen people that worked it helps develop what might replace the existing guidelines, focusing on how to sustain the river while meeting the state's water needs, officials said.

The committee again will be led by Cooke and Arizona Department of Water Resources director Tom Buschatzke. The river is governed by a series of interstate agreements, international treaties and court rulings — all of which the two said would guide the committee's work.

They ruled out marketing unused water within Arizona or sending it outside the state.

Two groups that will do modeling and analysis of the river and develop Arizona's strategy for negotiations with other states are expected to meet before a planned September committee meeting. Those on the strategy team will be required to sign confidentiality agreements.

Daryl Vigil, water administrator for the Jicarilla Apache Nation in New Mexico, said he would like to see all Arizona tribes represented on the committee. Buschatzke said that would become unwieldy.

"What do we do with renegotiation in Arizona? You just go back to what you know, which leaves out an incredible huge portion of people who have water rights in the basin and, of course, I'm talking about tribes," Vigil said.

The Southern Nevada Water Authority said it has been accelerating conservation that will allow the state to be flexible in working through the next round of guidelines.

The upper basin states — Colorado, Utah, Wyoming and New Mexico — historically haven not used their full allocation of Colorado River water. Amy Haas, director of the Upper Colorado River Commission, said those states will be looking to address overuse in the lower basin, reliability in the forecast for lake levels and equity in the river operations.

"Lake Mead just does not recover because we're seeing overuse in the lower basin," she said. "Again, more than 1 million acre-feet per annum, and that's a real problem."

DSU student secures $100K in initial investments for desalination invention to address water scarcity

Written by or for St. George News

https://www.stgeorgeutah.com/news/archive/2020/06/30/prc-dsu-student-secures-100k-in-initial-investments-for-desalination-invention-to-address-water-scarcity/#.Xwcg0ShKiUl

ST. GEORGE — Dixie State University student and Eden Technologies founder and CEO Hunter Manz, along with company co-founder Zack Manweiler, has successfully secured $100,000 to help fund their desalination invention and address water scarcity issues in needed areas. “Our goal is to try to eliminate certain words from the vocabulary like drought and water scarcity,” Manz said is a press release from DSU. “For example, Day Zero in South Africa is where the whole area runs out of water.”

Manz said he wants his invention to eradicate water scarcity in drought-ridden countries and do away with the need for a day zero in any part of the world.

According to the press release, Eden Technologies’ desalination invention removes the salt from ocean water to generate pure drinking water. The device has its own energy recovery system, which sets it apart from other desalination systems.

“Our initial fundraising was rather quick,” Manweiler said. “The first three investors we privately spoke with said yes and the whole round lasted only two months.”

With the initial funds secured, Eden Technologies will now begin to construct a fully-functional prototype of their desalination machine, as well as obtain an international patent. Once the prototype is completed, the Saline Water Conversion Corporation of Saudi Arabia has agreed to consider allocating funding to develop a much larger commercial model if results stay consistent with previous data.

Atwood Innovation Plaza at Dixie State University serves as Eden Technologies’ home base. This 55,000 square-foot state-of-the-art center invites entrepreneurs to incubate their ideas, prototype their designs, develop business plans and grow successful businesses.

“Hunter Manz and Eden Technologies represent exactly what Atwood Innovation Plaza is designed to do – foster an ecosystem supportive of innovative ideas and entrepreneurial people,” Innovation Plaza Director Colby Jenkins said in the press release. “We are thrilled to see Eden Technologies enjoy such tremendous early success.”

Eden Technologies is now moving toward more formal engagement with global customers.

“In Saudi Arabia, we have been coordinating with organizations that connect us with plant designers and builders,” Manweiler said. “Any country in the Middle East could be a potential customer with our connections.”

For more information about Dixie State University’s Atwood Innovation Plaza, click here.

Deputies looking for 3 suspects who trespassed at city water tank causing boil order

by: **Mercy Owusu**

Posted: Jul 1, 2020 / 09:01 PM MDT / Updated: Jul 1, 2020 / 09:01 PM MDT

https://www.abc4.com/news/deputies-looking-for-3-suspects-who-trespassed-at-city-water-tank-causing-boil-order/

WOODLAND HILLS, Utah (ABC4 News) – Deputies with the Utah County Sheriff's Office need help to identify three individuals who trespassed on the Woodland Hill culinary water tank.

Woodland Hills city officials received an alert that someone was trespassing at their city's culinary water storage tank. Security cameras captured pictures of what appeared to be three young men inside the fenced area if the tank and actually on top of the water tank.

The incident caused city officials to issue an order for residents to boil water until they could determine if the trespassers had damaged any equipment or contaminated the water.

Woodland Hills officials had the order in place for 48 hours until it was determined to be safe.

Anyone who recognized the individuals in question is asked to call central Utah Dispatch at (801)794-3970 and ask to speak to a deputy.

Stagnant water in buildings brings health concerns, experts say

By Kendall Polidori, Co-editor-in-chief
July 1, 2020

https://columbiachronicle.com/stagnant-water-in-buildings-brings-health-concerns-experts-say

Due to coronavirus-related building closures, college campuses like Columbia are working to ensure a safe return and dealing with stagnant water increasing the possibility of bacteria and serious illness.

Normally, when buildings are open and in use, water is constantly moving and therefore "cleansing itself of chemicals," according to Caitlin Proctor, a Lillian Gilbreth Postdoctoral Fellow at Purdue University of Indiana.

Because many buildings on college campuses have been closed since March due to coronavirus health concerns, water systems—including toilets, faucets, water fountains, refilling stations, communal showers and underground pipes—have been sitting unused for nearly four months.

The Illinois Department of Public Health, or IDPH, issued a memorandum May 13 through its Plumbing and Water Quality Program to building owners and public water supply operators with guidance on "maintaining water quality and safety in building water systems and in portable water distribution systems during periods of reduced use." It also included advice on how to properly return building water systems to regular use.

The memorandum stated a lack of water use will increase water age and stagnation in water systems, which then "degrades water quality by corroding pipes and plumbing materials, accumulating sediment in water systems, and reducing disinfectant levels."

This then contributes to the growth and spread of waterborne pathogens and increases the concentrations of metals like iron, lead and copper. It also creates unpleasant tastes, colors and odors, according to the memorandum.

Andrew Whelton, an associate professor of Civil Engineering and Environmental and Ecological Engineering at Purdue, said when water sits for too long, it increases the probability of high levels of chemicals, which can potentially cause health concerns including nausea, vomiting, stomach cramping and diarrhea due to contaminated water.

Proctor said the growth of bacteria and pathogens can cause respiratory health effects through inhalation, similar to the coronavirus, or COVID-19.

One of the more recent health concerns due to stagnant water is Legionnaires' disease, which is a type of pneumonia caused by legionella bacteria.

In Lake County, Illinois, a man was tested four times for COVID-19 because of his severe symptoms and temperature of 104.7, but results came back negative each time, according to WGN-TV reporting on June 18. It was later found he had Legionnaires' disease and the Lake County Public Health Department has initiated an investigation into how the man contracted the disease.

Unlike COVID-19, Legionnaires' disease is not transferable from person to person. However, Proctor said people who are immunocompromised "tend to be vulnerable to the pathogens that grow in water," so people recovering from COVID-19 are more defenseless against the pathogens found in water systems.

Both Proctor and Whelton have been sampling the water systems of different buildings in Indiana and preparing them for people to safely return.

Whelton said the two of them remove every faucet in the building, pull every aerator off faucet heads out and clean them with toothbrushes, disinfect the aerator, flush all stagnant water out of the building's water system, measure water quality and use thermometers to test if all old water is gone.

Proctor said she suggests buildings keep water moving daily and open faucets frequently to flush out stagnant water.

She said another option would be to conduct a complete building flush but it may pose concerns of creating aerosols, and people doing the flushing would need to wear personal protective equipment.

Proctor said the measures taken to reduce the risk of coronavirus spread might have secondary effects on other systems like water and plumbing.

In order to keep occupancy low in bathrooms, some campuses have closed off a number of stalls, but because those stalls are not being used, it creates stagnation at individual points, she said.

Angela Hackel, United States Environmental Protection Agency spokesperson, said the agency is working to "support communities to safely reopen following precautions taken to slow the spread of COVID-19."

"[The] EPA recommends that building owners and managers take proactive steps as to protect public health by minimizing water stagnation during closures and taking action to address building water quality prior to reopening," Hackel said.

Lambrini Lukidis, associate vice president of Strategic Communications and External Relations, said Columbia's Facilities and Operations staff were trained by the Building Owners and

Management Association, or BOMA, on how to manage water systems in buildings during the campus shutdown.

Lukidis said after the training, a water management program was developed for the college which follows Centers for Disease Control and Prevention guidelines. In late April, facilities engineers began implementing the program where all water systems were drained and flushed of stagnant water, Lukidis said.

She said this includes cooling towers, boilers, drinking fountains, toilets and any water source used for washing hands or drinking.

“It is an ongoing practice that Facilities [staff] will continue as part of maintaining our buildings and keeping it safe for occupants,” Lukidis said. “We are going to bag the water fountains to help prevent the spread of the [coronavirus].”

The CDC released guidelines May 7 for “reopening buildings after prolonged shutdown or reduced operation,” which outlines “Legionella guidance for people with weakened immune systems and the use of respiratory protection when flushing water systems.”

IDPH’s memorandum included a recommended checklist for building owners which included contacting water suppliers; verifying backflow devices have been tested in the last 12 months; flushing cold and hot water systems; ensuring all traps on drain, waste and vent systems are properly sealed; and ensuring all plumbing fixtures have been properly cleaned and disinfected prior to use.

In the college’s updated reopening plans June 17, it was announced touchless faucets will be installed in all bathrooms on campus.

Whelton said even if college campuses are taking necessary steps to ensure clean water throughout its buildings, everyone still needs to be cautious about the “new normal.”

“Universities and institutions should be communicating to the faculty, staff, students and parents about what they’re doing to make campus safe,” Whelton said.

Ways to Reduce Lead in Your Drinking Water

July 01, 2020

By CHRIS HUNTER/ecoRI News contributor

https://www.ecori.org/green-tip/2020/6/30/ways-to-reduce-lead-in-your-drinking-water

Providence Water, the manager of the Scituate Reservoir and the largest provider of drinking water in Rhode Island, is dealing with elevated levels of lead in its drinking water. While drinking water that leaves the treatment plant in Scituate and journeys through the Providence Water distribution system has no detectable levels of lead, in our communities some of the public and private service pipes and plumbing fixtures like faucets, valves, brass pipes, and pipe solder contain lead.

An abundant supply made lead the metal of choice for plumbing use prior to World War II. In older homes built before 1947, there is a strong probability that some or all of the building's pipes, fixtures, and soldered plumbing connections consist of lead, brass, or lead-based solder.

When standing water is exposed to lead pipes or fixtures and solder for more than a few hours, lead can leach into the water. This means the first water drawn from the tap in the morning, or later in the afternoon after returning home from work or school, can contain higher levels of lead.

Lead can cause serious health problems, especially for young children and pregnant women. It can cause damage to the brain and kidneys and can interfere with the production of red blood cells that carry oxygen to all parts of the body.

Providence Water is now offering 10-year zero-interest loans for homeowners to replace private lead service lines. If a homeowner replaces their private side of the service line — from the curb stop/property line to the house — Providence Water will replace the public side — from the water main in the street to the curb stop/property line — of the service line. Replacing one but not the other accomplishes little.

There also are simple steps people can take to immediately reduce potential lead exposure from household plumbing:

If water hasn't been used in the building for several hours, people should run water from a cold water faucet until it gets noticeably colder and then for an additional minute — usually 3-5 minutes total — before using the water for drinking or cooking. This colder water from the tap indicates that standing water in the home's pipes has been flushed and displaced by water from the water main in the street, where exposure to lead is nonexistent. The cost of the flushed water

is about a penny, and people can collect the flushed water to use for watering plants or for household cleaning to avoid waste.

Unlike microbial contamination, boiling water doesn't reduce lead levels in drinking water.

For families with babies and young children, formula and other meals should always be prepared with flushed cold water. Using hot water from the tap can cause trace lead amounts to leach from the home's plumbing into the food source, even after a full flush.

Families should clean their home's faucet aerators periodically. Lead from the home's plumbing could accumulate undetected in the aerator screen and be in contact with water passing through, especially after any repair or replacement of lead-based plumbing or fixtures in the home.

To find out if a residence has lead plumbing or public lead service lines, click on this interactive map. It's important to note that even if the home doesn't have a lead service line, it may still have a private lead service pipe, or lead in fixtures in the house plumbing.

Providence Water retail customers in Providence, Cranston, North Providence, Johnston, and Smithfield can request to have a free lead test kit mailed to their home or business.

Utahns warned to watch for toxic algal blooms

By Jed Boal, KSL TV | Posted - Jul. 5, 2020 at 7:47 p.m.

https://www.ksl.com/article/46773388/utahns-warned-to-watch-for-toxic-algal-blooms

UTAH COUNTY — Algal blooms have slimed the water on Utah Lake and dozens of other bodies of water across Utah in each of the last five years. Right now, boaters and other people who play in the water are on their own for spotting the toxic blooms.

Due to budget cuts related to COVID-19, the Utah Department of Environmental Quality cannot fund the teams that used to warn people about algal blooms.

Kavika Fonua was out fishing along the shore with his cousins Thursday on Utah Lake, and remembered when access was closed due to algal blooms last year.

“They have signs to keep us aware. But, I haven’t really seen any right now,” he said, referring to the algal blooms, which were nowhere in sight along the shore Thursday.

Each of the last five years, the DEQ warned Utahns when algal blooms flourished. But the public will not get those warnings this year.

“The assumption, of course, is that they’re going to be back this summer,” said Jared Mendenhall, Utah DEQ spokesperson.

When the DEQ monitored the blooms, they posted real-time data and put up public warnings. Some state parks have permanent warning signs, but, people will have to make decisions about algal blooms on their own.

Last year, the Utah DEQ identified harmful algal blooms in more than 40 bodies of water across the state. Thirty-eight of those reached the level of public health warnings. Some of those bodies of water were even closed, and there were 40 calls to the Utah poison control center for issues related to the toxins cyanobacteria in the harmful algal bloom last year.

“None of that monitoring is taking place,” said Mendenhall. “We are not aware of what’s going on with scientific certainty if there are harmful algal blooms, or not. That’s why residents do need to take those precautions to ensure that they are not exposing themselves to harmful algal blooms, and they are protecting their health.”

Algal blooms appear bright green, like an oily sheen on the water. They can develop in a few hours, and move.

“These are ripe conditions for algal blooms,” said Mendenhall. “We had that rain come in that washed additional nutrients into the water, and now we have the sun out, and that cyanobacteria, it’s like a plant it’s growing right now.”

Stay away and keep your pets away, too. If you get too close, you could be affected by rashes, headaches, nausea and intestinal issues.

Fonua said he would never cast his line into slimy water and thinks people fishing would warn each other.

“Once someone sees it, they’ll make sure to tell somebody,” he said.

If you think you have been exposed to a harmful algal bloom, and you’re displaying symptoms, contact your doctor or the Utah Poison Control Center.

Western Weber County development plans spark water concerns from neighbors

By TIM VANDENACK Standard-Examiner

Jul 7, 2020

A new phase of development of a large western Weber County parcel of land that's been the focus of on-and-off controversy in recent years is edging forward.

But not without more debate, underscoring the wrangling that sometimes accompanies development of the county's dwindling open spaces.

Weber County commissioners late last month approved the subdivision plans for a 156-home development called Taylor Landing off the south side of 1800 South in western Weber County, a key step forward for the plans.

Still, some worry the plans, as formulated, pose a environmental threat to groundwater and they are mulling their options to potentially halt the development. The favorable 2-1 vote by commissioners on June 23 countered a 4-2 vote against the plans by the Wester Weber Planning Commission on May 12.

Shae Bitton, who lives in the area, has led efforts to force the would-be developer, Tremonton-based Heritage Land Development, to alter its plans. She wants a planned section of agricultural open space on the 109-acre piece of land to be shifted to a more fertile area, reducing, she hopes, the need to use soil nutrients that could potentially sully groundwater. "We could potentially be poisoned by all those chemicals if it gets in our aquifer," she said.

Some county officials and project proponents, though, say her worries are overblown. Nitrates, which add fertility to soil, are used on farmland all around Weber County, County Commissioner Gage Froerer said. Moreover, the nitrates used likely wouldn't penetrate that deeply, probably no more than 6 inches, said Tom Favero, who would actually farm the land if development plans come to fruition.

"We're not going to put much on there," Favero said.

Either way, the debate highlights the disagreement that frequently accompanies development plans in western Weber County, home to some of the largest open swaths of land left in the fast-growing area.

Bitton and other neighbors only recently have been able to dig into their concerns about possible harm to groundwater. At this stage, the only recourse to halt the plans, she said, would be suing in court, but before going that far, she hopes to get a gauge of sentiment in the area on the issue.

“No one knows about it; that’s the problem. I want people to know what’s going on,” Bitton said. The proposed Taylor Landing subdivision that’s the focus of the current debate is carved out of the larger Sunset Equestrian development, which Bitton and several others from the area unsuccessfully tried to halt in late 2017 and early 2018.

Jay Stocking of Heritage Land Development, meantime, hopes to start development in the fall. As he sees it, adding the Taylor Landing subdivision would enhance the area. It would total around 109 acres, with more than half of that, some 64 acres, being set aside as open space for farmland and the rest, around 45 acres, containing the 156 homes.

“We feel like this is an important project for the area because the land hasn’t been taken care of for years,” Stocking said. It contains weeds and dilapidated buildings and the project would clean that up, while still allowing for a large chunk of the land to be used for farming, preserving some of the rural aesthetic of the area.

‘IT’S TERRIBLE LAND’

Bitton understands that growth and development are coming. Her concern is with the location of the proposed open farming area on the northeastern portion of the planned Taylor Landing subdivision. Experts say other portions of the land contain higher quality soil and she thinks the development layout should be shifted so the richer land is earmarked for farming instead.

As is, the location of individual wells on the land and an aquifer further down below worry her, prompt the concerns about potential water contamination in light of proposed use of nitrates and other chemicals. “It’s just stubble. It hasn’t been used for farming because it’s not good land. It’s terrible land,” she said. Similarly, the 4-2 vote against the plans by the planning commission stemmed from language in county code that calls for land with prime soil to be used for open space in developments like Taylor Landing.

Aside from contesting her worries about water contamination, though, Favero said none of the Taylor Landing land is that great. Over the long haul, he suspects even the land earmarked for farming in the Taylor Landing subdivision would be turned over to development. “None of it is the best ground in the world,” he said.

Bitton also charges that the length of some of the street blocks in the proposed development fall short of requirements in county code. Commissioner Jim Harvey, the lone no vote on June 23 when the Weber County Commission took up the matter, cited that in voting against the plans.

Bitton has also charged that selection of Favero to farm the open Taylor Landing land represents a potential conflict of interest. His brother Andrew Favero, a member of the Western Weber Planning Commission, voted in the minority, in favor of the plans, in the 4-2 vote on May 12 against the proposal. However, Matt Wilson, the legal counsel for the commission, said at the May 12 meeting that if Andrew Favero has no ownership interest in the matter, there is no conflict, according to minutes from the meeting.

Children who drink water from private wells at higher risk of lead exposure

Research shows lead exposure worse for poor and black children

Highlights risk from contaminants in unregulated private wells

Nina Lakhani in New York

Published onWed 8 Jul 2020 06.00 EDT

https://www.theguardian.com/environment/2020/jul/08/us-children-lead-drinking-water-study

American children whose homes rely on private wells for drinking water are 25% more likely to have high lead levels in their blood than those with access to regulated community water services, according to new research.

The lead exposure is worse for poor and black children due to historic discriminatory public policies.

Lead, a heavy metal which has no smell and is invisible to the naked eye, is a suspected carcinogen and highly toxic to the brain and nervous system, as well as most other organs.

The water scandal in Flint, Michigan, in 2014 exposed concerns about lead in regulated city drinking water supplies, but little attention has been paid to dangerous contaminants in unregulated private wells which provide drinking water to 42.5 million Americans, the equivalent of 13% of the population.

The study, published in Proceedings of the National Academy of Sciences, is the first to specifically analyze lead exposure in children who rely on private wells.

Researchers, who examined the water sources and health records from almost 60,000 children in North Carolina, found that those relying on private wells had blood lead concentrations that were 20% higher, on average, than children with community water service.

The study also found that children living in older, lower-value houses suffered higher lead levels and had higher risks of elevated blood lead, as did those in majority-black neighbourhoods.

“Risks are especially high for children in low-income households and in African American neighborhoods that remain excluded from access to nearby municipal water service – a legacy of discriminatory zoning practices,” said Jackie MacDonald Gibson, author of the study and chair of the department of environmental and occupational health at the Indian University school of public health.

“This unfortunate legacy contributes to persistent intergenerational poverty through its impacts on children’s cognitive development.”

There is no safe lead level, according to the CDC, and childhood exposure has been linked to reduced IQ, ADHD, school failure and criminality.

The increased exposure is probably due to corrosion of indoor plumbing and well components.

Private wells are excluded from the Safe Drinking Water Act, which since 1991 has required all community water utilities to monitor lead levels as part of the Lead and Copper Rule provision.

This means households with private wells must monitor their own water quality, and, when necessary, replace parts and install and manage their own corrosion-control systems.

But it is seldom done, according to Gibson, because lead control requires awareness of the risks, knowledge about testing, and money.

“This study highlights the need for an overhaul of the Safe Drinking Water Act to provide support for households relying on private wells,” Gibson said. “That includes financial support, and education and support on proper testing. No level of lead exposure is safe. This is an issue that must continue to be addressed.”

Drought conditions grip Utah; stats are grim
July 9, 2020

https://moabtimes.com/2020/07/09/drought-conditions-grip-utah-stats-are-grim/

What a difference a year makes. The monthly Climate and Water Report for June indicates the month's precipitation was "much above average" in southeastern Utah at 234%, bringing this region of Utah to 91 percent of average for the months October through June.

While that's undoubtedly good news, soil moisture is at 28% compared to 61% last year and reservoir storage is at 68% of capacity. It was at 110% last year after a wet 2019.

Elsewhere in Utah, June rainfall varied widely, according to Jordan Clayton of the Utah Snow Survey. On average, said the data collection officer, northern Utah valleys fared better than southern Utah, getting about 2.5 inches of precipitation compared to 1 inch in southern Utah.

The lower elevations in the state have received about seven inches of rain since the water year began in October. That lack of rain and several high wind events, said Clayton, caused an "early and active" start to the fire season in the central and southern parts of the state.

The arid heat also ratcheted up drought conditions from 90 percent a month ago to 96 percent by the end of June; and "even worse," the area of severe drought in Utah "shot up to 48 percent of the state, from only 15 percent [in May]."

While the valleys are dry, the mountains are also below normal, with precipitation October through June at 86% of average, said Clayton. It's unlikely things will improve this late in the water year.

"With less than 100 days to go until the end of the water year, chances are increasingly likely that Utah will wind up with below average overall precipitation totals, though some uncertainty remains due to potential contributions from the summer monsoon," said Clayton. "The winter snowpack has now completely melted out. At its peak (roughly April 1), this year's snowpack was slightly above average, but warm, dry conditions during April and May caused the snowpack to deteriorate more rapidly than normal at Utah's SNOTEL sites, and forced below to well-below average April-July predicted runoff for Utah's water supply forecasts."

Public health warning issued for Zion after dog seizes, dies swimming in Virgin River

by Mark Klekas

Sunday, July 12th 2020

https://kutv.com/news/local/public-health-warning-issued-for-zion-after-dog-seizures-dies-after-swimming-in-river

SALT LAKE CITY (KUTV) — The State of Utah has issued a public health warning of the North Fork of the Virgin River in Zion National Park.

An aggressive, harmful algal bloom was discovered by park rangers over the past week. On July 4, a dog was playing the water in the North Fork of the Virgin River. About an hour after swimming, the dog started to have a seizure and died. Scientists believe the dog's exposure to the algae was the reason for its untimely death.

Zion National Park has posted signs in the area warning visitors and residents to not swim or submerge themselves, or their dogs, in the river. This is a basic outline of the guidelines now set in place in the area:

Do not swim in this area.

Avoid areas of algae scum.

Keep animals away.

Do not drink the river water (including water passed through a purifier).

Clean fish well and discard guts.

This public health warning will not affect waters in the Quail Creek Reservoir, Sand Hollow Reservoir, or the Santa Clara River basin.

The Utah Department of Agriculture and Foood (UDAF) reminds residents to check if the affected water is used for livestock.

If you think you were exposed to the toxic algae, call Utah Poison Control at 800-222-1222.

Algal bloom monitoring resumes in Utah Lake

By

Gephardt Daily Staff

July 11, 2020

https://gephardtdaily.com/local/algal-bloom-monitoring-resumes-in-utah-lake/

UTAH COUNTY, Utah, July 11, 2020 (Gephardt Daily) — Monitoring for harmful algal blooms resumed this week on Utah Lake after the Utah Department of Environmental Quality received a one-time grant from the U.S. Environmental Protection Agency to conduct monitoring of 18 priority waterbodies for harmful algal blooms.

Due to state budget uncertainty, DEQ's program funding was cut and monitoring was put on hold, according to a statement from the Utah County Department of Health. With new funding from the federal government, sampling and updates for harmful algal blooms resumed this week. Updated sampling and advisory information will be available at habs.utah.gov.

UCHD encourages Utah Lake recreators to heed the Permanent Harmful Algal Bloom (HAB) education/awareness signs around Utah Lake at common access points. Signs can have the additional "WARNING" or "DANGER" signs added below the main sign, as determined by the Utah Department of Environmental Quality's Division of Water Quality's sampling results.

"We are pleased with the improved process last year," said Ralph Clegg, Utah County Health Department Executive Director, in a prepared statement. "We encourage recreators to pay attention to signs so they know what HABs look like and what to avoid."

Due to sample results received this week, showing high levels of toxins in the open water between the American Fork and Lindon Marinas, WARNING signs are being posted at both marinas.

Harmful algal blooms occur when stagnant, nutrient-rich water warms up in the summer and becomes the ideal breeding ground for cyanobacteria — commonly known as blue-green algae. Under these circumstances, the bacteria can reproduce quickly, overwhelm the waterbody and in some cases produce skin, liver and nervous system toxins.

"For those who would like updates on Utah Lake, such as when warnings or closures are issued or lifted, we encourage signing up at www.alerts.utahcounty.gov. It is an easy way to get text, e-mail, or phone notifications," said a statement by Aislynn Tolman-Hill, UCHD spokeswoman.

Utah Lake algal bloom monitoring resumes, warning issued for American Fork and Lindon marinas

By Connor Richards Daily Herald

Jul 13, 2020

https://www.heraldextra.com/news/local/utah-lake-algal-bloom-monitoring-resumes-warning-issued-for-american-fork-and-lindon-marinas/article_a028006e-e508-5b58-bf45-4cb4f3024137.html

The Utah County Health Department announced Friday that it had resumed monitoring of toxic algal blooms at Utah Lake after temporarily pausing monitoring in June due to "state budget uncertainty" and issued a warning advisory for parts of the lake.

Funding for the monitoring of harmful algal blooms, or HABs, came from a $104,000 grant from the United States Environmental Protection Agency (EPA), according to a press release from the Utah County Health Department. Utah Lake is one of more than a dozen water bodies throughout the state that will be monitored.

"Due to state budget cuts, the harmful algal bloom program is being funded by EPA through a one-time grant," the Utah Department of Water Quality (DWQ) stated on its website. "This limits DWQ's monitoring to 18 priority waterbodies in Utah."

The Utah County Health Department issued a warning advisory for the American Fork and Lindon marinas after sample results collected by the DWQ on July 6 "showed microcystin levels exceeding the recreational health-based threshold" for issuing such an advisory.

The sample, which was collected in the open water between the two marinas, showed microcystin levels at 25.4 micrograms per liter, according to the DWQ.

Warning advisories indicate "moderate relative probability of acute health risk" and are issued when microcystin levels reach between 8 and 2,000 micrograms per liter, or when anatoxin-a levels are greater than 15 micrograms per liter.

The July 6 sample between the American Fork and Lindon marinas showed a safe concentration of anatoxin-a, less than 1.5 micrograms per liter.

Another "water-column bloom" was observed by a DWR monitoring team at Sandy Beach, but the Utah County Health Department did not issue a warning advisory for this area of the lake.

Jared Mendenhall, spokesman of the Utah Department of Environmental Quality (DEQ), said that the state has “just been dealing with a load of issues around algal blooms” this summer.

“The concern that you have with the cyanobacteria is that, at a certain stage in its life cycle, it can start producing nervous system and liver toxins,” Mendenhall said in an interview Monday. “And those can really create some complicated health issues.”

The health effects of exposure to cyanobacteria include headaches, nausea, rashes and gastric distress, according to Mendhall.

Mendenhall confirmed that the algal bloom found between the American Fork and Lindon marinas was “toxin-producing” but said the lake would remain open for fishing, boating and other recreational activities.

“So right now Utah Lake is open, and what they’re asking people to do is to avoid those areas where they know that the bloom is taking place,” he said, adding that warning signs had been placed around the lake.

The EPA issued the $104,000 grant after the Utah State Legislature cut $250,000 in state funding for algal bloom monitoring as part of widespread budget cuts in response to the COVID-19 pandemic, according to Mendenhall.

Other water bodies that health officials will monitor for HABs include “popular recreation spots” like Deer Creek Reservoir, Scofield Reservoir, Otter Creek Reservoir, Pineview Reservoir and Yuba Lake.

On July 4, a dog died an hour after swimming in the north fork of the Virgin River in Zion National Park and exhibiting “symptoms consistent with possible exposure to cyanobacteria toxins,” according to a DEQ press release.

Results from water samples showed an anatoxin-a concreation greater than 55 micrograms per liter, far beyond the 15 micrograms per liter public recreation threshold.

Mendenhall noted that the toxin levels at Utah Lake were “not at anywhere near the levels as this thing is down in Zion” and said recreators can stay safe by showering after being in the lake and washing their hands before handling food.

For regular updates on HAB monitoring at Utah Lake and other water bodies, visit http://habs.utah.gov.

Trespassers responsible for boil order sought by Utah County authorities

BY MCKENZIE STAUFFER TUESDAY, JULY 14TH 2020

https://kjzz.com/news/local/trespassers-responsible-for-boil-order-sought-by-utah-county-authorities

WOODLAND HILL, UT (KUTV) — UPDATE: (July 16, 5 a.m.) -- Three teens who trespassed at the Woodland Hills water tank, which caused officials to issue a 48 hour boil order, have turned themselves in. Each of them will face charges in this incident, according to the Utah County Sheriff's Office.

(KUTV)-- Trespassers at a water tank forced Woodland Hills city officials to issue a boil order mid-June. Now, authorities are asking for the public's help to identify the people.

The Utah County Sheriff's Office says three young men were captured on security cameras trespassing at the city's culinary water storage tank on June 15 at approximately 1:45 p.m. They were inside the fenced area and got on top of the water tank.

The incursion caused city officials to issue a boil water order for residents until they could determine if any equipment had been damaged or water contaminated.

The order was in place for 28 hours until the water was determined to be safe, according to the sheriff's office.

Authorities released photos of the trespassers on Monday asking for the public's help to identify them.

If you recognize anyone in the photos, please contact the all Central Utah Dispatch at -801-794-3970 and ask to speak to a deputy.

Sustainable water quality sensor made from human hair-derived carbon dots

by Griffith University

JULY 15, 2020

https://phys.org/news/2020-07-sustainable-quality-sensor-human-hair-derived.html

Griffith University researchers have used human hair waste to develop sustainable organic hi-tech devices for water quality testing of contaminants.

Professor Qin Li and a team of researchers from the School of Engineering and Built Environment and Queensland University of Technology synthesized carbon dots from human hair waste which can detect trace amounts of chloroform in water, a major by-product of water disinfection.

Published in Sustainable Materials and Technology, the researchers created highly fluorescent carbon dots CDs in a sustainable chemical-free process by heating up the hair at 180 ºC in an oxygen-deficient environment.

Carbon dots are small carbon nanoparticles (less than 10nm in size) with varying functional groups on the surface and the ability to fluoresce when exposed to a range of chemical and biochemical contaminants.

The intensity of the fluorescence changes when surface functional groups on the carbon dot interact with the particular chemical species, making them perfect for chemical sensor applications.

Professor Li said the contaminants the carbon dots target could be as unique as the individual whose hair from which they are made.

"It might sound strange, but hair is an extremely valuable waste product," Professor Li said.

"Being rich in protein and full of carbon and nitrogen, it is an excellent precursor for transformation into useful materials like carbon dots. Because hair is rich in nitrogen, when we altered the thermal treatment conditions, we produce carbon dots with different nitrogen-containing functional groups on their surface which bind specific contaminants."

Remarkably the researchers also found that different colored hair produced carbon dots that responded preferentially to differing pollutants.

"The dark hair showed a high specificity for sensing chloroform pollution in water, while the blond hair we tested was more sensitivity to metal species like magnesium," said former Griffith University Research Fellow Dr. Ehsan Eftekhari.

These dark hair-derived carbon dots, with nitrogen-based sensing antennae on the surface, were so sensitivity they could detect chloroform present in as few as three molecules per billion water molecules.

"Chlorination is a widely-adopted disinfection method in water treatment used to reduce pathogen risks and waterborne diseases, but it also creates by-products that have been linked to higher cancer rates, rates," said Professor Fred Leusch, a co-author who chairs the Australian Water Quality Advisory Committee.

"So, developing sensors to monitor the amount of chlorine used in treatment and the by-product concentrations in real-time is of critical importance to public health."

The carbon dot sensors could even tell the difference between very similar chemical contaminants.

"In this study, we found the nitrogen-based sensing antennae on the carbon dots surface was sensitive to chloroform, but not to the chemically similar contaminant bromoform, due to the subtle difference in their electronic structures," Professor Li said.

"I'm constantly amazed by how much biological materials can teach us on designing functional products, such as carbon dots-based nano-sensors. Using bio-waste to make carbon dots for water quality sensors without employing any harmful solvents, makes it a sustainable technology that truly adheres to the principles of green chemistry."

Budget cuts mean no state monitoring for harmful algal blooms at Willard Bay, potentially Causey Reservoir

By PATRICK CARR Standard-Examiner Jul 15, 2020

https://www.standard.net/news/environment/budget-cuts-mean-no-state-monitoring-for-harmful-algal-blooms-at-willard-bay-potentially-causey/article_2762e32a-238c-5622-99ee-a52788bef9c0.html

Part of the state Legislature's budget cuts took a chunk of about $250,000 out of the Utah Department of Environmental Quality, money that in past years has been used for its harmful algal bloom monitoring program in water bodies across the state.

Last week, the DEQ got a $104,000 grant from the Environmental Protection Agency that will be used to monitor harmful algal blooms, or HABs, but the financial shortfall means the DEQ will regularly monitor just 18 water bodies in the state for HABs and others will see less scrutiny.

Department spokesperson Jared Mendenhall said the DEQ chose the 18 water bodies based on the amount of recreation use they get along with prior history of HABs.

Pineview, Mantua and Holmes Creek reservoirs will be regularly monitored by the DEQ. Pineview has seen harmful algal blooms each of the past two years. Utah County's Utah Lake is routinely plagued by HABs.

Several other water bodies, namely Willard Bay State Park in Box Elder County and Causey Reservoir in eastern Weber County, won't be regularly monitored by the DEQ.

The responsibility theoretically now falls to local health departments, which are strapped for resources while they deal with the COVID-19 pandemic, as well as the general public, who can call the DEQ or health departments to report possible harmful algal blooms.

"(Bear River Health Department) does not plan to monitor Willard Bay and we do not have the resources to do so," Bear River Health Department spokesperson Josh Greer wrote in a statement to the Standard-Examiner, citing a conversation with the department's environmental health director.

According to previous Standard-Examiner reporting, blue-green algae forms in a mix of warm temperatures, sunlight and high nutrients.

Harmful algal blooms develop when naturally occurring cyanobacteria in the water multiply very quickly to form green or blue-green water, scum or mats. These blooms can produce potent cyanotoxins that pose serious health risks to humans, pets, fish and livestock.

Symptoms of exposure include skin rashes, nausea, vomiting, headaches and fever.

The DEQ and local health departments regularly sample water bodies during the May-October recreation season. Mendenhall declined to discuss specifics of how often water bodies were tested before the budget cuts, but he estimated the DEQ will test the 18 water bodies weekly thanks to the EPA grant.

“The HABs program is an important element of protecting the health of water recreators and the environment. With these funds, DEQ can continue identifying HABs and informing public health partners about the safety of Utah waters,” said Erica Gaddis, director of DEQ’s Division of Water Quality, in a press release.

Though Pineview Reservoir will still be regularly monitored by the DEQ, Causey Reservoir, 11 miles to the east, won’t be.

A Weber-Morgan Health Department spokesperson didn’t return answers to questions sent by the Standard-Examiner by publication time of this article.

Six water bodies in Davis County won’t be regularly tested by the DEQ; however, the Davis County Health Department says it tests all of its water bodies monthly for E. coli bacteria and, during the same monitoring, visually checks for harmful algal blooms.

“Additionally, we respond to citizen complaints about HABs and will conduct HAB analysis if needed, regardless of state funding. The ultimate goal is to protect public health while the public enjoys the outdoors,” according to a department statement sent to the Standard-Examiner.

Davis County’s E. coli water body testing list is comprised of Mueller Park, Bountiful Pond, Farmington Pond, Adams Canyon, Syracuse Pond, Maybe Pond, Steed Pond, Clinton Pond, Holmes Reservoir, Weber Basin Job Corp Pond, Adams Reservoir and Hobbs Pond.

E. coli sampling in May by the DCHD found high levels of the bacteria in Farmington Pond that have persisted throughout June and so far in July. The recreational health advisory threshold for E. coli levels is 409 MPN (measuring the most probable number of bacterial cells) per 100 milliliters of water.

Farmington Pond’s levels have been 435.2, 727, 488.4, 770.1, above 2,149.6, 1,732.9 and 648.8 MPN, with the most recent test taken July 9.

Department spokesperson Trevor Warner said a potential combination of more recreational use, wildlife use, higher temperatures and decreased water flow out of Farmington Canyon are likely

contributors to the high E. coli levels, but DCHD sends the data to the state, which draws the final conclusions for why the levels are so high.

In the meantime, Warner said DCHD has posted signs near Farmington Pond advising people not to use the pond.

The DEQ asks anyone who wants to report a possible algal bloom to call (801) 536-4123. Detailed water body inspection information can be found on the DEQ's website at https://deq.utah.gov/water-quality/harmful-algal-blooms-home.

Water bodies that will be sampled routinely by DEQ Pineview Reservoir (DEQ).

Holmes Creek Reservoir (DEQ/DCHD).

Mantua Reservoir (DEQ).

Water bodies that will be sampled by county health departments Hobbs Reservoir (DCHD).

Andy Adams Reservoir (DCHD).

North Fork Holmes Creek (DCHD).

Jensen/Syracuse Pond (DCHD).

Weber Basin Job Corp Pond (DCHD).

Water bodies that won't be sampled routinely by DEQ

Willard Bay State Park.

Causey Reservoir.

EPA adds new PFAS treatment options, scientific references to Drinking Water Treatability Database

Update provides tools to state and local governments to help address PFAS.

Jul 16th, 2020

https://www.waterworld.com/drinking-water/potable-water-quality/article/14179715/epa-adds-new-pfas-treatment-options-scientific-references-to-drinking-water-treatability-database

WASHINGTON -- The U.S. Environmental Protection Agency (EPA) announced an update to its Drinking Water Treatability Database with new treatment options and scientific references for per- and polyfluoroalkyl substances (PFAS). This update is another example of the Trump Administration delivering on an important commitment under EPA's first-of-its-kind PFAS Action Plan. The database update will further help states, tribes, and local governments, as well as water utilities, make better decisions to manage PFAS in their communities.

"The latest addition of four PFAS compounds and 20 new scientific references to the Drinking Water Treatability Database increases our depth of scientific knowledge on this emerging chemical of concern. The update serves as an important tool for states, tribes and communities across the country as they can now use these new treatment technologies to better protect public health and manage PFAS in drinking water," said EPA Administrator Andrew Wheeler.

In this most recent update, EPA added treatment and contaminant information about four new PFAS compounds. This update brings the total number of PFAS compounds in the database to 26, including PFOA and PFOS. Researchers have also added 20 new scientific references to the existing PFAS entries, which increases the depth of scientific knowledge available in the database. The four new PFAS compounds are:

Difuoro(perfluoromethoxy) acetic acid, also known as Perfluoro-2-methoxyacetic acid

Perfluoro-3,5-dioxahexanoic acid

Perfluoro-3,5,7-trioxaoctanoic acid

Perfluoropropane sulfonate

The Drinking Water Treatability Database presents an overview of the properties of different contaminants and possible treatment processes to remove them from drinking water. Water utility managers, water treatment experts, states, tribes, local governments, researchers, and

others can use this new and updated information to help treat PFAS in drinking water systems to protect the health of communities across the nation.

The information included in the database is supported by scientific references, such as journal articles, conference proceedings, reports, and webinars with treatability data. The release of this information continues to address the challenges laid out in the PFAS Action Plan.

The agency's PFAS Action Plan is the first multi-media, multi-program, national research, management, and risk communication plan to address a challenge like PFAS. The plan responds to the extensive public input the agency has received between 2018 – 2019 during the PFAS National Leadership Summit, multiple community engagements, and through the public docket. The PFAS Action Plan outlines the tools EPA is developing to assist states, tribes, and communities in addressing PFAS.

The Drinking Water Treatability Database contains information on a wide range of different contaminants, not just PFAS. EPA researchers continue to expand and improve information in the database.

For more information on EPA's Drinking Water Treatability Database and to access it, visit: https://www.epa.gov/water-research/drinking-water-treatability-database-tdb.

‘Help us in this fight’: New boating laws aim to stop mollusks from invading local waters

Written by Mori Kessler

July 18, 2020

https://www.stgeorgeutah.com/news/archive/2020/07/18/mgk-help-us-in-this-fight-new-boating-laws-aim-to-stop-mollusks-from-invading-local-waters/#.XxXWYp5KiUl

ST. GEORGE — New boating laws went into effect earlier this month that impact out of state boaters and mandate all drain plugs be removed from a watercraft while being transported on Utah roadways.

The Utah Legislature passed House Bill 255, Boat Fee Amendments, as a means to continue fighting the potential spread of the invasive quagga mussel while also providing additional funding for it.

Since July 1, out-of-state boaters have started to pay a $20 fee for all motorized watercraft not registered in the state. Called an “aquatic invasive species mitigation fee,” out-of-state boaters are able to pay the fee after completing an online education course. This course details how boaters can prevent the spread of quagga mussels, according to the Utah Division of Wildlife Resources.

A link to that online course and the payment portal are available on the STD of the Sea website and the DWR website.

Once the course is completed and payment received, boaters can print out a certificate to put on their launch vehicle. A version of the certificate can also be saved on the boater’s phone.

Money from the new fee goes to fund the state’s aquatic invasive species mitigation efforts.

Additionally, anyone transporting a boat on any Utah roadway is now required to remove all drain plugs from the boat and drain all water from the live wells, bilges, ballast tanks or other similar compartments on the watercraft. Individuals who fail to comply with this measure may be cited with a class C misdemeanor which carries a penalty of up to 90 days in jail and a fine of up to $750.

Watercraft with systems that cannot be fully drained must complete 30 days of dry time or undergo professional decontamination prior to launching into any Utah waterbody.

“We feel confident that these new changes and our continued rigorous inspections across the state will help us in our efforts to contain quagga mussels to Lake Powell, Lake Mead and other infested waters, and to prevent them from spreading to other waterbodies,” Nathan Owens, Utah Division of Wildlife Resources Aquatic Invasive Species Coordinator, said in a statement. “However, we really need the assistance and compliance of boaters in these efforts. We are grateful to all those who are willing to help us in this fight.”

The law also directs the DWR to study the options and feasibility of implementing an automated system that can scan, photograph and provide real-time information about when a boat last entered a Utah waterbody and when the boat was last decontaminated. The study will be presented by Nov. 30, and a pilot program will be launched before May 1, 2021.

In addition to complying with the new laws, boaters can also help prevent the spread of quagga mussels by doing the following:

Clean: Boaters should wipe all water, mud, plant materials and other debris from their boats. In particular, make sure to inspect the anchor and sea strainer.

Drain: Boaters are required to pull all drain plugs and leave them out during transport and storage after boating on Lake Powell. All water should be completely drained from ballast tanks, bilges and live wells. Boaters with outboard or inboard/outboard engines should drop the lower unit to drain those areas as well. Also, inspect the cooling intake or water system on the boat.

Dry: All boats with ballast tanks, inboard engines or inboard/outboard engines retain water at all times, and therefore, will need to meet a 30-day dry time if not professionally decontaminated.

Boaters should also remember that by state law they are required to stop at open inspection stations after leaving a waterbody. Anyone who doesn’t stop may be cited with a class B misdemeanor, which can carry a penalty of up to six months in jail and a fine of up to $1,000.

Utah maintains over 40 inspection and decontamination sites across the state. In Southwest Utah, these stations are located at the Port of Entry on Interstate 15 at the Utah-Arizona border and Sand Hollow State Park.

Utah water and wildlife officials hope to keep the quagga mussel infestation contained to Lake Powell due to the potential damage it can cause to boats, infrastructure and the native environment and species.

Issues that arise due to the quagga mussels, according to the DWR, include the following:

Plugged water lines, even lines that are large in diameter.

If they get into water delivery systems in Utah, it will cost millions of dollars annually to remove them and keep the pipes clear, which can result in higher utility bills.

They remove plankton from the water, which hurts fish species in Utah.

Mussels get into a boat’s engine cooling system. Once they do, they’ll foul the system and damage the engine.

When mussels die in large numbers, they create a strong odor, and the sharp shells of dead mussels also can cut the feet of people on the beaches.

Ensuring Water Continuity in Colorado

Thomas Renner Jul 21st, 2020

https://www.waterworld.com/drinking-water/distribution/article/14177891/ensuring-water-continuity-in-colorado

There is a lot to like about working and living in Colorado, and many people are finding out why. In the last 20 years, the state's population has increased by slightly more than 1.5 million people. The state is among the top 10 fastest-growing in the nation, as more than 700,000 residents moved to the state between 2010 and the end of 2019.

Sustained growth, however, puts increased pressure on infrastructure. The American Society of Civil Engineers (ASCE) released its 2020 report card and assigned a D+ grade to the state's schools. The report gave C- grades to the state's roads and transit systems.

Similarly, the population surge has strained the state's already-thin water resources. Colorado's drinking water and wastewater received C- marks on the same report.

"Colorado's infrastructure is reaching a critical crossroads," the ASCE report said. "As the Centennial state's population grows — thanks in part to our abundant sun and outdoor recreation — the infrastructure we depend on is suffering from years of under-investment. As a result, our schools, roads, bridges, sewer lines, water treatment facilities, and many other critical assets are failing to keep pace with the needs of our growing state."

Brighton, about 25 miles outside of Denver, had just a little more than 21,000 residents in 2000. It is expected to surpass 41,000 residents in 2020. Brighton took a critical step last year toward guaranteeing its water supply for the long term. The city completed the construction of a $5.4 million project, the Erger's Pond Augmentation Station, that should serve its residents for decades — and provide a model that other communities can follow.

Project at a Glance

The project required the installation of two raw water pump stations near a city-owned reservoir that is used for water storage. The reservoir is located adjacent to the South Platte River, which serves as the main water resource for the eastern side of the state. Aslan Construction built the pump stations. One pumps water from the river into the reservoir, and the other will be used to pump water back into the river.

The new station includes nine submersible pumps in underground wet wells to move water, along with a gravity line. The total storage capacity at Erger's Pond is 1,800 acre-feet, or about 586 million gallons.

The station will capture excess river water during the spring runoff for subsequent water withdraws. Curt Bauers, the city's utilities director when the project started, said if the water could not be captured it could have flowed out of state.

"This water will be used to meet our current – and a significant portion of future – annual customer water demands," he said.

Teams also built new spillways to direct water flow and "riprap" slope protections to protect the pond's banks from erosion.

"Improving the slopes and spillways are vital to keeping the pond from being washed out," Bauers said.

The city had been using temporary pumps, but that solution proved costly and inefficient.

"Construction of permanent infrastructure to facilitate pumping operations was necessary and beneficial to the city," said Jake Hebert, a civil engineer who worked on the project.

Need for Augmentation

The dual-purpose stations are needed to comply with the state's augmentation requirements. In 1969, the state adopted the Water Rights Determination and Administration Act. One part of the act requires junior water users on over-appropriated streams to offset depletions to senior water rights. Priority to water rights is based upon when they were acquired, and holders of senior rights have the first claim to withdraw water. Ownership of land is insufficient to convey a right to use water.

Brighton's primary water supply comes from alluvial groundwater wells, which have junior rights, and therefore the city must augment supply so senior water users downstream have sufficient water. "Water in the West is very different from water rights in the Eastern United States," said Dawn Hessheimer, water resource specialist for the City of Brighton.

Water allocation is a complex process in Colorado, and has been so for centuries. Zebulon Pike, one of America's earliest western explorers and the man for whom Pikes Peak is named, referred to Brighton in his diary as the "Great American Desert." The Colorado Encyclopedia said before Colorado achieved statehood in 1876, "water scarcity drove the territory to adopt the Colorado doctrine," a water allocation system whose basic premise was "first in time, first in right."

Multi-Tiered Water Issues

Several factors contribute to the state's water shortage. The state's Western Slope, defined as being west of the Continental Divide, receives about 80 percent of the state's water supply. About 80 percent of the state's population, however, resides on the much drier eastern side of the divide.

The South Platte River scrolls through Colorado and Nebraska for nearly 380 miles. But, more than 4.5 million residents rely on it for drinking water, energy, food, irrigation, and other activities.

The lack of rain also contributes to the state's water issues. Brighton only receives about 15 inches of rainfall each year, and Colorado is ranked among the 10 driest states in America. The average rainfall in the United States is 38 inches.

"Brighton water storage reservoirs are a vital component to our municipal water system and our ability to supply water to our citizens," Hessheimer said. "Think of the chicken and the egg. Which came first? You cannot legally draw water from wells for treatment without the ability to augment the well pumping."

Preventing Leaks

With those water issues, the project needed to make certain water retention remained uncompromised. Hebert said a key challenge was placing the reservoir filling pump and wet well on a narrow strip of land between the river and the reservoir.

Some of the slurry wall — a clay bentonite wall usually built around reservoirs to prevent water leakage in and out of the reservoir — had to be removed to build the wet well and pump station. "Much care was taken to rebuild the slurry wall, and it resulted in no leaks," Hebert said.

The wet wells are accessed by 14 floor doors manufactured by The BILCO Company. The doors are manufactured from aluminum and feature type 316 hardware for corrosion resistance and many years of dependable service. They feature engineered lift assistance for easy, one hand operation, automatic hold open arms, and an industry-leading 25-year warranty. Tim Bosworth of Dalco Industries procured the doors for Aslan Construction.

"The BILCO hatches were preferred by the operations department and are used to access the wet wells," Hebert said. "They were installed directly above all of the submersible pumps to provide a way to pull the pumps from the wet wells for maintenance and future replacement."

Model to Follow

Brighton is not unique in Colorado in its limited water supply. Augmentation is a relatively new concept, but the model that the community created could be a template for others to follow.

"This project is certainly transferable to other communities in Colorado," Brighton officials wrote in an awards submission to the Colorado branch of the American Public Works Association. It was selected in the association's contest for medium-size communities as the top environmental project. "The lessons provided from the Erger's Pond Augmentation Station Project are applicable to many Colorado communities, because building permanent pumping facilities is much more cost effective and efficient in the long run."

Cache Water District helping the community use a precious commodity wisely

Written by Bill Walter

July 21, 2020

https://www.cachevalleydaily.com/news/archive/2020/07/21/cache-water-district-helping-the-community-use-a-precious-commodity-wisely/#.XyBQr55KiUl

LOGAN – The Cache Water District was created to give the northern part of the state a larger voice in both legislative debates and in local planning, considering that the area is interconnected, surrounded by other states that also have their eye on some of the water flowing into Utah.

On KVNU's For the People program on Monday, July 13, District Water Manager Nathan Daugs said the COVID-19 pandemic has affected their meeting in person but they have adjusted.

"We've continued to have our monthly board meetings, we do those by Zoom currently. We'll be doing that probably at least one more month and then just assess the situation as we move…as well as almost all state meetings have been online or by phone to some degree," said Daugs.

He said it has slowed them down a bit but they're still moving forward. One project they are currently working on, that they just received initial funding for, is the Logan River Watershed Project, known locally as the Crockett Irrigation Project.

"We just received a grant to do the environmental assessment for that project so we can evaluate a couple scenarios that may entail pressurizing the 10 canal companies that divert water at Crockett diversion there on the Island. If that project moves forward after the environmental assessment, it could provide secondary hook-up to a number of homes and businesses in Logan, North Logan and Hyde Park."

Daugs said this would save a significant amount of water, considering the way the system is currently run. He said the canal system is over 100 years old and the diversion structure is in need of repair.

With water locally being a precious commodity, a free service for local residents is a water check.

He said they've partnered with Utah State University Extension again this summer to hire interns to come out and run your sprinkler system and let you know how efficient or inefficient that system might be. Call USU Extension and schedule your free check.

States Sue EPA Over Water Rule, Alleging Loss of Veto Power (1)

July 21, 2020, 12:55 PM; Updated: July 21, 2020, 2:03 PM

Amena H. Saiyid

https://news.bloomberglaw.com/environment-and-energy/states-sue-epa-over-water-rule-alleging-loss-of-veto-power

A multistate coalition is suing the EPA over a rule that it claims limits the power of states to block infrastructure projects, such as interstate oil and gas pipelines, on water quality grounds.

Democratic Attorneys General Xavier Becerra of California, Bob Ferguson of Washington, and Letitia James of New York are leading a group of 20 states and the District of Columbia alleging that the new rule will hamper states' ability to adequately review project proposals for water quality impacts.

Becerra said the rule "clears the deck for fossil fuel infrastructure" by limiting the scope of reviews states can conduct.

The recently published rule (RIN: 2040-AF86) will make it more difficult for states to protect their waters and wetlands, the attorneys general said Tuesday in a complaint filed in the U.S. District Court for the Northern District of California.

The Environmental Protection Agency's rule amounts to a "drastic curtailment of state authority" that violates "the plain language, structure, purpose and legislative history of the Clean Water Act," the attorneys general alleged.

Narrowed Scope

The rule, published July 13, reduces the scope of state reviews of pipeline crossings. States must focus on direct water quality impacts, and not on indirect impacts such as climate change or acid rain caused by air pollution, under the rule.

State reviews are mandated under Section 401 of the Clean Water Act, which directs states to ensure that proposals needing federal permits also meet water quality standards within their borders. A project can't obtain a federal license until it has received state certification.

The rule provides a new reading of Section 401 by specifically giving states a one-year deadline to veto projects requiring federal licenses or permits, like dredge-and-fill permits. Until now, states began the one-year clock after they deemed an application complete. That enabled states to start reviews and make objections beyond the one-year time frame.

The EPA declined to comment directly on the litigation, but said "the agency's final rule increases the transparency and efficiency of the Section 401 certification process in order to promote the timely review of infrastructure projects while continuing to ensure that Americans have clean water for drinking and recreation."

Becerra said the administration "once again" is "attempting to undermine the Clean Water Act—this time by limiting longstanding state authority to protect our waters from degradation tied to federally-approved projects,"

Two separate lawsuits already were filed by environmental groups on the day the EPA rule was published.

Similar Plaintiffs

Tuesday's lawsuit is filed by roughly the same states that challenged the EPA over which waterways and wetlands are considered "waters of the U.S." and protected under the Clean Water Act.

The states claim that the EPA's two recent water rules have left states with no power to protect their waterways and wetlands against projects that would endanger drinking water supplies.

The lawsuit also alleges that the EPA, under President Donald Trump's April 2019 executive order, has issued a rule that is contrary to U.S. Supreme Court precedent and EPA's own longstanding guidance on interpreting the Clean Water Act provision.

The order required EPA to devise rules to remove impediments like the Section 401 authority exercised by states to block interstate pipeline projects passing through coastal states. Washington state in 2017 had blocked the construction of the Millennium Export Terminal that would have exported Powder River Basin coal mined in Wyoming, Montana, Colorado, and Utah to Japan and other countries

Supreme Court Ruling

States authority under section 401 to impose conditions on a federally permitted or licensed project is not limited to water quality controls specifically tied to an actual "discharge" of pollutants, according to the complaint.

EPA, however, has chosen to follow the minority view of a 1994 U.S. Supreme Court ruling in *PUD No. 1 of Jefferson Cty v. Wash. Dept. of Ecology.*

In a 7-2 decision, the justices interpreted Section 401 broadly and held that states may impose conditions on the project activity as a whole, and not merely on the project's discharges.

At the time, they agreed with EPA's conclusion that "*activities*—not merely discharges—must comply with state water quality standards is a reasonable interpretation of § 401, and is entitled to deference."

Writing for the minority, Justice Clarence Thomas insisted that certification was limited to discharges into federally protected waters and that as a result, states couldn't impose conditions on project activities other than those affecting water quality.

Tough Rule to Defend

"I do think the EPA has its work cut out for it in defending this rule in courts," Ashley Peck, a Holland Hart LLP partner based in Salt Lake City, said Tuesday. "The EPA is going against Supreme Court precedent and 40 years of states applying Section 401."

Doug Obegi, a senior Clean Water Act lawyer with the nonprofit Natural Resources Defense Council, who joined Becerra for Tuesday's announcement, said the EPA rule "eviscerates" the rights of states by imposing "unlawful and unreasonable" conditions on reviews.

In California alone, Obegi said, the state issues hundreds of these certifications and only a few are deemed controversial.

Peck agrees with Obegi, though she said the certification process is in need of streamlining, but not to the extent that EPA has gone with this rule.

Becerra said the one-year time limit prevents states from conducting a thorough review of water quality impacts.

Apart from California, New York, and Washington, the other states on the lawsuit are Colorado, Connecticut, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Nevada, New Mexico, New Jersey, North Carolina, Oregon, Rhode Island, Vermont, Virginia, and Wisconsin. The District of Columbia also joined in the lawsuit.

Cause of Action: Violation of the Clean Water Act and Administrative Procedure Act.

Relief: Vacate the 2020 Clean Water Act Section 401 Certification Rule.

Response: The EPA said it doesn't comment on pending litigation, but made clear that prior to their revisions, "the EPA's water quality certification regulations were nearly 50 years old and did not reflect the statutory language in Section 401."

Attorneys: Attorneys general Xavier Becerra for California, Bob Ferguson for Washington, and Letitia James for New York.

The case is: California v. EPA, N.D. Cal., No. 20-04869, 7/21/20.

BLM seeks public input on Pine Valley Water Supply Project proposal

Written by Kelsey Cooke

July 22, 2020

https://www.stgeorgeutah.com/news/archive/2020/07/22/kkc-public-input-welcome-as-blm-pursues-pine-valley-water-supply-project-proposal/#.XyBTYJ5KiUl

CEDAR CITY — The Bureau of Land Management is looking for public input to help create an environmental impact statement for the Pine Valley Water Supply Project, proposed by the Central Iron County Water Conservancy District.

According to a press release, the Central Iron County Water Conservancy District proposed this project to help alleviate the current 7,000-acre-foot water supply deficit in Iron County. The Conservancy District has applied for a right-of-way grant in both Beaver and Iron counties in order to develop water resources in Beaver County and transport them to Iron County.

The BLM's Eplanning website offers further details about the project, which involves burying a water pipeline on both federal and nonfederal property. The Conservancy District has acquired water rights in Pine Valley and is looking to develop groundwater production wells and transport the water to Iron County with a pipeline.

The impact statement is currently in the beginning – or "scoping" – phase, which allows residents to provide input on the project and the potential impact it may have on the environment and resources in the area.

The BLM will host an online public scoping meeting Aug. 5 at 6:30 p.m. to provide additional information and gather comments. Community members can register for the online meeting through the Eplanning website.

BLM Public Affairs Specialist Christian Venhuizen told Cedar City News that residents often have valuable information regarding the impact of a project.

"We're in scoping right now, and they're welcome to provide us with whatever information they can to help guide our analysis," Venhuizen said.

He said public input that offers new, detailed information related to how the agency can accomplished what is being proposed and analyze potential environmental impacts are the most hopeful to creating the environmental impact statement.

Comments will be accepted through Aug. 14 and can be submitted via email at pvwsproject@gmail.com or mailed to Bureau of Land Management, PVWS, 176 DL Sargent Drive, Cedar City, Utah 84721.

Before submitting comments, community members should remember that comments, including personal information, can be made available to the public at any time. Commenters can request that personal information be withheld from public review, but the BLM cannot guarantee its ability to do so.

Provo Municipal council asked to approve $18 million water grant request

By Genelle Pugmire Daily Herald

Jul 25, 2020

https://www.heraldextra.com/news/local/central/provo/provo-municipal-council-asked-to-approve-18-million-water-grant-request/article_03583b75-3fdd-5965-a4f4-ccbbb4bce4ea.html

With several large projects on Provo's docket, including the airport terminal, waste water treatment plant and new city center, the most important project rarely gets discussed.

The Provo Aquifer Storage and Recovery project, the thing that will help Provo have water for years to come, needs some attention, according to Dave Decker, Public Works director.

Decker gave the Municipal Council one of his many presentations of late on the subject during the most recent work session.

"This project is kind of flying under the radar," Decker said. "But it is probably the most significant project going on right now in public works."

The project is giving Decker's crew a close look at what will need to be done to keep the city wells filled.

Half of Provo's culinary water comes from ground water. That water seeps into the ground and eventually into the aquifers. It's the aquifers that fill the wells.

"Saving water over the years takes a consistent effort," Decker said. "After years of saving, it will be a gold mine."

Decker said Public Works needs $1 million a year just take care of the city wells.

Right now Decker is concerned. "We are seeing a decline in well water," he said.

While it is not at a critical level, it is a sign that if something is not done now, future generations may not have the same water access the city now enjoys.

Four monitoring wells are being studied in and around Rock Canyon. The test drills dig for water sources, measure how far down they are and, through pumping, they can move the water to the aquifer and then to the wells.

Decker said they were anticipating seeing spring runoff. "Unfortunately, we did not have a runoff in Rock Canyon," he said.

In some wells there has been a loss of much more than 20 feet of water.

The ASR projects have selected five of the city's 16 wells to study.

Decker is seeking several grants from the state but is also asking for $18 million through a WaterSMART grant from the Bureau of Reclamation.

Decker said the Bureau of Reclamation is aware of Provo's request and knows the city can match the funding.

However, before they city can submit their application they must first hold a required public hearing. That will happen during the first council meeting in August. Then the council must approve the resolution seeking the $18 million.

Decker is hoping the council will approve the request for the future's sake.

Through WaterSMART, Water and Energy Efficiency Grants (formerly Challenge Grants) Reclamation provides a 50/50 cost share funding to irrigation and water districts, tribes, states and other entities with water or power delivery authority.

According to the Bureau of Reclamation, "Projects conserve and use water more efficiently; increase the production of hydropower; mitigate conflict risk in areas at a high risk of future water conflict; and accomplish other benefits that contribute to water supply reliability in the western United States."

Projects are selected through a competitive process and the focus is on projects that can be completed within two or three years.

Applications for these grants are due by 4 p.m. on Sept. 17, and Decker wants Provo's ASR project on the recipient list.

The Water Tap: Recent study points to built structures locking residents into water use patterns

Joan Meiners, St. George Spectrum & Daily News Published 11:04 a.m. MT July 24, 2020

https://www.thespectrum.com/story/news/2020/07/24/water-tap-recent-study-points-built-structures-locking-residents-into-water-use-patterns/5502684002/

As part of this new water column, each Friday (Saturday in print) we will be addressing a new topic that is relevant to water security in Iron and Washington counties. Check back each week for updates on ongoing water issues, interviews with experts, and explorations of how we can ensure a better water future for the growing communities in southwestern Utah.

Recent research out of Utah State University has placed some blame for excessive home water use squarely on the shoulders of the 'built environment.' Moving into a house that has a large yard, a swimming pool, or inefficient appliances can lock residents into water use patterns they may not be able to escape through conservation-mindedness or education alone.

The researchers, led by sociology Ph.D. student Matthew Barnett, surveyed residents in communities throughout northern Utah about their attitudes regarding water use and the environment and then combined those results with records of these residents' actual water use patterns and with information related to their structural environment.

"What we found was that people's attitudes about water conservation tended to be superseded by the more structural things that we looked at: the size of someone's yard, whether or not they had an underground sprinkling system, swimming pool, things like that," Barnett said.

That finding doesn't let residents off the hook, though.

As droughts intensify across the world and water conservation in the desert becomes an increasingly pressing issue, these study results indicate that the secret to reducing water use may lie with residents pushing for the adoption of water-conscious policies by city and development planners.

"It's a device called structuration," explained Barnett. "Peoples' behaviors are shaped by the structures around us, but also structures are determined by people and the way they live their lives from day to day and their attitudes about things. People's attitudes shape structures."

Cultural attitudes about what a yard should look like or what expectations from neighbors might be for yard upkeep, for example, have been found to influence landscaping installations and watering practices. These decisions tend to be inherited by future generations of homeowners,

who typically maintain the landscaping that was in place when they purchased the home regardless of their own attitudes about ideal water-conscious landscaping.

“In short,” Barnett writes, “patterns of residential use of culinary water reflect individual, commercial, and political decisions made decades ago, as well as the pervasive influence of social norms, culture, institutions, and built infrastructure.”

Those using the most water at home included older and wealthier residents, who, for example, generally have larger yards, care more about neighborhood appearances, and can afford to pay the higher-tier cost of elevated water use. Water use was also high among renters, who may live with more outdated appliances and may not monitor water consumption if their utilities are included with rent, the study found.

Religious affiliation was loosely related to water use, with previous studies having found that members of The Church of Jesus Christ of Latter Day Saints are less concerned about water shortages. Neither race nor level of education was associated with water use.

In fact, Barnett and colleagues found that individual awareness of water shortage issues or monthly water use did not significantly influence household water consumption in Utah cities, despite the fact that many conservation organizations prioritize education as a way to influence reductions in water use.

Instead, the paper notes, most reductions in per capita water consumption in the U.S. over the past forty years have been accomplished through changes in municipal water delivery and storage systems, housing codes, and adoption of requirements for more water-efficient appliances and fixtures.

Individual action via the local political system, then, may be the swiftest channel to water conservation.

Although cost was a factor in how much water various households consumed, Barnett stressed that raising the cost of water to curb its use should not be seen as a viable water conservation strategy because it raises social justice concerns by penalizing the poor for inherited low-efficiency structures.

Rather, change can be accomplished by ensuring that new developments do not lock Utah’s incoming residents into inefficient water use practices that penalize new and existing residents alike by unnecessarily straining the total amount of water available.

“In areas that face water security challenges, encouraging new developments with smaller lot sizes is probably the most useful way to go,” said Barnett. “And it’s just lot size in general, not yard size. We looked at the use of low-water-use plants and that was not significant in our analysis.”

With the population of Utah expected to nearly double by 2060 and developments popping up right and left in Washington and Iron counties, this study points to new development regulations as the channel to conserving regional water resources. Often development plans require approval by city council members, who are elected by local voters. Only approving water-conscious plans for growth could yield much larger water savings than educating residents on how to dial back daily use, the study suggests.

Although the survey focused on northern Utah, Barnett thinks these findings would likely hold true for a similar study conducted throughout the southern parts of the state.

“I would suspect that [in southern Utah] you'd have a similar situation where people's attitudes would be kind of superseded by the structures around them,” Barnett said. “Some things like outdoor swimming pools might be more important there. It's definitely something that somebody should do, explore these questions in a different regional context. And I think St. George would be a great place to start.”

While water conservation will still require a multi-pronged approach and personal use remains important, these recent findings suggest that making city-wide adjustments to our built environments is an area ripe for improvement.

“You know, Utah's population is exploding. So, considering that, alongside the fact that we are facing water security challenges, it's definitely an urgent problem for the state to be thinking about,” said Barnett. “And I'm from Blanding. So, I know it's a concern for a lot of areas in the southern part of the state.”

Navajo Nation residents hope federal act, aid will finally bring big water projects

By Zak Podmore

・Published: 1 day ago
Updated: 20 hours ago

https://www.sltrib.com/news/2020/07/27/navajo-nation-residents/

Editor's note • This is the last installment of a three-part series from The Salt Lake Tribune, Report for America and the Solutions Journalism Network covering water access on the Navajo Nation in Utah. Parts 1 and 2 looked at current challenges with water availability and midterm solutions to bringing indoor plumbing to Navajo Nation residents.

Last summer, Navajo Nation President Jonathan Nez sat before the U.S. House Natural Resources Committee and pleaded for the passage of a bill that would formalize water rights for the Utah portion of the Navajo Nation.

"More than 40% of Navajo households in Utah lack running water or adequate sanitation in their homes," Nez said in the June 2019 testimony. "In some cases, such as in the community of Oljato on the Arizona-Utah border, a single spigot on a desolate road, miles from any residence, serves 900 people. The legislation provides the means to address these critical needs of the Navajo people."

Nine months later, the critical needs Nez described became even more urgent, after a man unknowingly carried the coronavirus from a baseball tournament in Tucson, Ariz., to the Navajo Nation community of Chinchilbeto, Ariz., not far from the Utah line. The virus spread at a church rally March 7 — the pastor giving the sermon reportedly had a cough — and ripped through the northern Navajo Nation over the next few months, prompting lockdowns, curfews and mask orders.

An elderly woman and her son from Navajo Mountain, Utah, died within days of each other in late March after running out of water in their off-grid home while quarantining with the virus. As of Sunday, COVID-19 had taken 434 lives on the Navajo Nation, which has an on-reservation population of about 174,000. That translates to a higher per capita rate than any U.S. state, and Nez has repeatedly drawn connections between the severity of the outbreak and the lack of running water in so many households.

It was in this context that the Navajo Utah Water Rights Settlement Act, which Nez testified on behalf of last year, was revived. The settlement formalizes an agreement among Utah, the federal government and the Navajo Nation that was worked out over more than a decade of negotiations.

Talks over the deal began in 2003, and the bill was first introduced in Congress by then-Sen. Orrin Hatch, R-Utah, in 2016. Hatch's successor, Utah Republican Sen. Mitt Romney, reintroduced the legislation last year, but it didn't pass until June, after the pandemic had turned water availability on the reservation into a national issue.

The House version of the bill, co-sponsored by Utah's entire congressional delegation — three Republicans and one Democrat — has yet to see a vote.

If it passes into law, the legislation would recognize the Navajo Nation's right to 81,500 acre-feet of water from the Colorado River Basin each year, and it would provide $210 million in funding for water improvements on Navajo Nation lands in southeastern Utah. An additional $8 million has been approved by the state of Utah.

Expanding water access has broad support among the American public during the coronavirus pandemic. A June poll from Climate Nexus, in partnership with Yale and George Mason universities, found 84% support for allocating federal dollars to provide clean water to the 2 million Americans currently without running water, many of whom live on Native American reservations.

According to Nez, the Utah settlement would save the federal government millions of dollars in litigation costs and help the United States meet its treaty obligations.

"The passage of this legislation will also advance the commitments made in the Treaty of 1868, where Navajo leaders pledged their honor to keep peace with the United States and, in return, the United States pledged to the Navajo people ... their permanent homeland," Nez said. "In the arid West, it is clear — no lands can be a permanent homeland without an adequate supply of water, especially potable water."

Even before the pandemic, the public health benefits of water funding were clear. According to an analysis by the Indian Health Service, every dollar the agency spends on home sanitation facilities achieves at least a twentyfold return in health benefits.

"We're under a very serious pandemic emergency," said James Adakai, president of the Oljato Chapter and manager for the Navajo Nation Capital Projects Management Department, which works on water and electrical improvements. "We need to get clean water to the homes. To improve the living conditions of Navajo families, we need long-term, reliable water sources, which the Utah Navajo Water Rights Settlement Act will provide."

Adakai said the $218 million in funding from the state and federal governments would be significant seed money but might not be enough to connect all Utah Navajo households to water. In some cases, he said, it could cost between $150,000 and $250,000 to connect a single household.

“This is a big project, running the water lines maybe 20 to 40 miles to very remote communities,” Adakai explained. “Running the line to the home, the drain fields, the septic tanks, the interior plumbing work, the cost of booster stations, water storage tanks, treatment plants — all the construction costs, labor, materials and supplies — it adds up.”

Another potential source of funding is the Coronavirus Aid, Relief, and Economic Security (CARES) Act, which passed in March and has so far resulted in $714 million flowing to the Navajo Nation.

The disbursement of the bulk of the funds was delayed by the federal government by nearly two months, and more recently a debate within the Navajo Nation government over how to spend the money has led to additional delays with presidential vetoes and stalemates within the Navajo Nation Council.

The CARES Act money must be spent by Dec. 31 under current rules, and Arlyssa Becenti, government reporter for The Navajo Times, said some constituents worry about time running out.

“They’re not liking the fact that legislative and executive [branches] are fighting over the money and where it should go,” Becenti said, adding that small protests have recently broken out over the issue in the Navajo Nation capital of Window Rock, Ariz. Some critics have suggested giving out the money directly to individual tribal members.

But the prolonged debate can obscure a base of widespread agreement over spending priorities. “Water, electricity and broadband — those are the main components,” Becenti said. “Those three are what the council wants, the president wants, and the protesters want.”

As political efforts to expand water access grind forward and as nonprofits work on interim solutions, a low-pressure public spigot in the Oljato Chapter near Monument Valley that Nez referred to in his congressional testimony is as crowded as ever with pickup trucks lined up every day, waiting to fill portable tanks and haul the water home.

Adakai said it’s important to keep those stakes in mind. “We’re in a water crisis,” he said. “We were before [the pandemic], but now it seems to be worse.”

Seismic waves help scientists 'see' chemical changes beneath a watershed

Date:

July 27, 2020

Source:

Penn State

Summary:

Chemical reactions deep below ground affect water quality, but methods for 'seeing' them are time-consuming, expensive and limited in scope. A research team found that seismic waves can help to identify these reactions under an entire watershed and protect groundwater resources.

https://www.sciencedaily.com/releases/2020/07/200727154214.htm

Chemical reactions deep below ground affect water quality, but methods for "seeing" them are time-consuming, expensive and limited in scope. A Penn State-led research team found that seismic waves can help to identify these reactions under an entire watershed and protect groundwater resources.

"About one third of the U.S. population gets their drinking water from groundwater, so we need to protect this valuable resource," said Susan Brantley, distinguished professor of geosciences and director of the Earth and Environmental Systems Institute (EESI) at Penn State. "At this point, however, we don't know where the water is or how it moves in the subsurface because we don't know what is down there. In this study we used human-generated seismic waves -- similar to the waves from earthquakes -- to look under the surface."

Traditional geochemical tests involve drilling a borehole 3 to 4 inches in diameter deep into the ground, collecting the soil and rock samples, and grinding and analyzing the chemical makeup of the samples in a laboratory.

The process is expensive and laborious, and it only reveals the geochemical information for that specific point in a watershed rather than the entire watershed, said Xin Gu, a postdoctoral scholar in EESI.

"In this study, we had the advantage of having previously drilled boreholes, so we knew at which depths geochemical changes happen," Gu said. "We also had the materials from the boreholes, so we knew the mineral abundance and element composition. Here we tried to expand our knowledge by doing geophysics, which is relatively more efficient."

The researchers logged -- lowered instruments that can send and receive signals, or even take high-resolution images, down a borehole -- a 115-foot deep borehole drilled into the valley floor at the NSF-funded Susquehanna Shale Hills Critical Zone Observatory, a forested research site in Penn State's Stone Valley Forest that sits atop the Rose Hill shale formation.

Using a seismic logging tool, the researchers mapped the subsurface. The logging tool sends out a seismic wave and records the wave's velocity, or how quickly it moves, as it travels away from the tool, explained Gu. The researchers lowered the logging tool into the borehole and took measurements as it rose back to the surface. Faster velocities indicated that the waves traveled through solid bedrock or where pores in weathered rock are filled with water. Slower velocities indicated the waves traveled through weathered rock with air-filled pores, or soil near the surface.

The research team assimilated the information into a rock physics model that determined the composition change, porosity change and saturation change of the rock to explain the measured velocities.

They discovered that simple chemical reactions between water and clay caused small changes that the seismic waves could "see," according to Brantley. The changes helped the researchers understand where water opens up pores in the subsurface. They report their findings today (July 27) in the Proceedings of the National Academy of Sciences.

The researchers also found tiny gas bubbles in the groundwater that they speculate is deep carbon dioxide produced by microbial respiration and mineral reactions in the subsurface. Soil microbes produce carbon dioxide as a byproduct of respiration, much like humans do when they exhale. When water passes through the soil on its way to the water table, it can carry this carbon dioxide with it, Gu said.

There are two very reactive minerals commonly found in shale -- pyrite and carbonate minerals, he added. When pyrite interacts with water, it oxidizes and generates sulfuric acid. The acid can interact with carbonate, a base that neutralizes the acid but generates carbon dioxide in the process. This carbon dioxide can occupy pore space at certain depths, even under the water table, explained Gu.

The researchers corroborated their results with data taken from valley and ridge boreholes drilled and logged in 2006 and 2013, respectively. They also compared it to two-dimensional models showing how velocities change in the subsurface. The 2D models were created using seismic waves generated by striking an aluminum plate with a sledgehammer and recording the waves at many locations along the surface.

"Geophysical imaging is a quite powerful tool," said Gu. "From the boreholes, we know how velocity changes with depth, from the lab measurements on the core materials we know what the mineralogy and the geochemistry changes are with depth, and by combining that knowledge with

the 2D seismic models, we can infer how the mineralogy and geochemistry changes spatially across the watershed."

The carbon dioxide in the water does not pose a health risk, said Brantley, adding that it is exciting the researchers could "see" it with seismic waves without having previously known it was down there.

"These measurements and our ability to combine geochemical and geophysical observations will help us understand the landscape sculpted by water in the rocks beneath us," she said.

In addition to Gu and Brantley, the research team includes Andrew Nyblade, Lisa Ma, David Oakley and Natalie Accardo, Penn State; Gary Mavko, Stanford University; and Bradley Carr, University of Wyoming.

The U.S. Department of Energy and the National Science Foundation funded this research.

Parts of Virgin River show dangerously high levels of algae toxin as testing continues

Written by Mori Kessler

July 29, 2020

https://www.stgeorgeutah.com/news/archive/2020/07/29/mgk-parts-of-virgin-river-show-dangerously-high-levels-of-algae-toxin-as-testing-continues/#.XzVQJyhKiUl

ST. GEORGE — A toxic algae bloom in the North Fork of the Virgin River continues to be a concern to local, state and federal officials as testing continues to determine how widespread and dangerous the neurotoxin created by the bloom has become.

"We're continuing to monitor the Virgin River," Jeff Axel, Zion National Park spokesman, said Wednesday.

One of the latest rounds of testing is related to the level of toxin exposure that could happen during recreational activity in the river, Axel said.

"We're thinking about what people do in the water at the park," he said. "It's typically sitting in the water, kids are splashing around and lifting up rocks. You've got people hiking in the Narrows – what if they tripped and fell on their face and get some river water in their mouths? … We're trying to figure out what the recreational exposure is."

The National Park Service reported last Saturday that the algae-produced neurotoxin can be ingested though the eyes, mouth and nose and that a very small amount can be harmful.

Results from the latest batch of testing for possible recreational exposure are expected back from the state any day now, Axel said.

Called anatoxin-a, which is created by high levels of cyanobacteria that comes with algae blooms, it impacts the nervous system with accompanying symptoms that include skin rash, salivation, drowsiness, tingling, burning, numbness, pain, incoherent speech, seizures, vomiting and diarrhea.

Cyanobacteria is a naturally occurring substance that comes with algae, yet can become dangerously toxic in high concentrations.

The likely cyanobacteria blooming in the Virgin River is Microcoleus tychonema, according to the National Park Service.

"It forms colonies that can be red, yellow, tan, green, brown or black in color. It produces the cyanotoxin called anatoxin-a, which impacts the nervous system. The toxin was detected at

levels in the park far above the recommended health threshold for primary recreation (swimming) at multiple locations."

Park service and Washington County officials were alerted to the presence of the toxic algae bloom earlier this month following the death of a 5-month-old puppy over the July 4 holiday.

Keanna, a Siberian Husky pup, had been playing in the Virgin River and chewing on some algae on a rock. Within the hour, the dog was dead. Prior to that, the dog was reported to have had trouble walking and was having seizures.

The dog had been a gift from Vanessa Weichberger to her young son, Francis, according to a Go Fund Me page set up by Weichberger to help cover costs incurred by the dog's final care.

Weichberger's family was visiting Zion National Park from South Carolina when the incident occurred.

"The toxic algae killed her in about 20 (minutes)," Weichberger wrote on the fundraiser page. "We watched in shock and horror as she left us way (too) soon and so dramatically. My son was bereft and is still grieving."

Anatoxin-a is particularly deadly to dogs and can kill them within 15 minutes. Because of this, anyone visiting the Virgin River for whatever reason is asked to keep their dog out of the water and on a leash at all times.

"This is scary, and this dog did die, so people should take it seriously," Axel said, yet added that thus far, there is no record of a human fatality involving the neurotoxin, only incidents of illness.

As for the concentration of toxin in the river, Axel said 15 micrograms per liter is considered a warning sign, with 90 micrograms being a danger level.

According to the National Park Service, some water samples taken from spots along the Virgin River between Zion and Rockville were confirmed to have concentrations greater than 550 micrograms per liter. Parts of the LaVerkin Creek have also tested positive for high levels of anatoxin-a.

Thus far, the National Park Service has posted signs along the river in the park advising people to avoid the water. However, hikes like the Narrows that involve walking through the water remain open for the time being.

Officials in Springdale, which draws its water from the Virgin River, have reported they are testing the water they draw for culinary use daily, and so far no signs of the toxins have been found thanks to the water treatment procedures employed there.

The Washington County Water Conservancy District is also monitoring the situation and currently is not taking water from the Virgin River into its treatment plant of the Sand Hollow or Quail Creek reservoirs.

However, should the toxins be found in the reservoirs the water district is currently drawing water from, General Manager Zachary Renstrom said the district's water treatment plant will be able to remove the toxin.

"We can handle a situation like that if it came in our treatment plant – the water is completely safe to drink," Renstrom told St. George News.

For now, park and health officials are hoping a good rainstorm will come through the area and create a flash flood that can run down the river and possibly remove the algae, Axel said.

"So far, the weather's not cooperating," he said.

A strange aspect about the algae bloom is that is in a river – a moving body of water, rather than a stationary one like a pond or lake where blooms traditionally appear. Because of this, the case of the Virgin River algae bloom has drawn attention from across the country, Axel said.

Groundwater Sustainability Is Needed More Than Ever

By Union of Concerned Scientists

Jul. 31, 2020 10:10AM EST

https://www.ecowatch.com/groundwater-sustainability-2646849892.html?rebelltitem=1#rebelltitem1

By Jose Pablo Ortiz Partida

The immediate emergency of COVID-19 has been a powerful reminder that the most valuable things in our lives are our families, friends, and the welfare of our communities.

The current pandemic is a threat to those closest to us today in a way that presages what we will experience on an accelerating basis due to the climate emergency. In a place like California's San Joaquin Valley (SJV), Latinos account for 70 percent of COVID-19 cases, even though they represent 42 percent of the population. Improving access to clean and affordable water even as the pandemic grows more urgent, is critical to reducing the types of burdens worsened by the COVID-19 crisis. Continuing the hard work on groundwater sustainability required by the Sustainable Groundwater Management Act (SGMA) could lessen the impact of future crises in the valley. The low level of preparation communities have experienced around the pandemic, echos what these same communities face for water management on a daily basis and will face with future climate change threats unless fundamental changes are made locally.

Thousands of People in the SJV Live Without Reliable Access to Water.

California is the wealthiest state in the most prosperous country in the world, and yet, there are close to one million people living without reliable access to safe, clean, and affordable drinking water. Most of these people are concentrated in disadvantaged communities in the SJV. California identifies disadvantaged communities as areas that experience disproportionate levels of a combination of poverty, air and water pollution, high unemployment, and high rates of cardiovascular diseases and asthma. According to a report from the UC Davis Center for Regional Change, residents in these communities are over 60% Hispanic.

The SJV is one of the most productive agricultural regions in the world, producing more than half of California's agricultural output with over 200 different crops and annual revenue of about 20 billion US dollars. The astonishing volume of water that agriculture requires has led to over-exploitation of groundwater and the continuous lowering of groundwater levels that has impacted water quality and quantity.

Groundwater is the primary source for household water needs and agricultural water supply. Yet, thousands of people are unable to drink and use the water in the SJV, because there are multiple contaminants in it. Some of the water pollution comes from natural sources and includes substances like arsenic, but most of it has emerged due to agricultural practices. These contaminants include pesticides and nitrates, which are linked to cancer, birth defects, and blue baby syndrome.

In years with average precipitation, water flowing in California's rivers from rain and melted snowpack meets about 60 percent of the state's water demand and groundwater meets the remainder. However, during dry years water supply sources shift and put severe stress on groundwater levels. During the California drought from 2012 to 2016, groundwater use, mostly from agricultural water pumping, grew to 80 percent in some regions of the SJV increasing overdraft. Groundwater overdraft occurs when water extractions exceed recharge into an aquifer. An analogy is your bank account; extract more money than is put in, and your account will go dry. Aquifers are like a shared account, with some people taking out more than others. Consequently, thousands of domestic wells ran dry, unable to reach water due to lowered groundwater levels, in large part due to increased agricultural water pumping, and affecting thousands of people across the valley.

We think about drought as standalone events, but in reality, human actions triggered by droughts can have effects that continue long after the drought has ended, like permanently lowering the water table. In the SJV, the last drought has permanently reduced the capacity of some aquifers because overdraft left air in between soil particles instead of water, and the soils subsided eliminating the space for water storage. Overdraft also leads to infrastructure damage from land subsidence, that is when the ground levels drop, plus reduction of surface water, and an increase in water quality problems. That range of concerns brought by overdraft formed the basis of SGMA.

Groundwater Sustainability Plans Could Fix Part of the Problem but Are Currently Inadequate.

SGMA passed in 2014 and is the first legislation in California to mandate sustainable management of groundwater resources. SGMA is intended to bring about groundwater sustainability by the year 2040. Local water agencies describe the means to achieve this goal in their Groundwater Sustainability Plans (GSPs). For those interested in the details of SGMA, here is a thorough description of it. The focus of this post is on the latest developments.

The 21 most critically over-drafted groundwater basins submitted their GSPs at the beginning of the year and are now under review by the California Department of Water Resources (DWR). External reviews of these plans argue that some of them do not sufficiently address current and future impacts on disadvantaged communities. For example, the Groundwater Leadership Forum (a group of organizations funded by the Water Foundation focused on ensuring the success of SGMA and of which UCS is part) also reviewed several GPSs and found gaps in how drinking water, climate change, stakeholder involvement, managed wetlands, and groundwater-dependent

ecosystems were addressed in the plans. The Public Policy Institute of California (PPIC) reviewed 36 plans submitted for basins overlapping the SJV. They found Kings Basin (surrounding Fresno) stands out for having the highest number of domestic wells that may go dry, about 600 of them, under the proposed water level sustainable thresholds and yet the local groundwater plan considers that an insignificant impact from continued overdraft. This is concerning and unacceptable. Public comments can be consulted in the SGMA portal from DWR.

I, and many others are concerned that multiple GSPs have questionable integrations of climate change projections. GSPs are considering numerous projects to tackle their local overdraft, yet they are not planning for the uncertain future that climate change is bringing. To reduce some of the vulnerabilities that we see now, GSPs need to integrate climate change and show benefits on the range of future scenarios.

Another concern is that on May 14, the Governor announced a $40 million cut on funding for SGMA. Part of the money was expected to support 37 new staff positions at DWR to uphold its statutory obligation on reviewing GSPs. While the budget still allocated $26 million of existing Proposition 68 bond funds to help with implementation projects in critically overdraft basin, it is unlikely that DWR will have the capacity to review the GSPs thoroughly. However, the governor's budget did prioritize safe and affordable drinking water and the State Water Board approved $130 million for 2020-2021 to projects that support such objective on vulnerable communities.

Without Bold Action and Preparation, Climate Change Threats May Bring Similar Impacts to Those of COVID-19.

The lack of drinking water causes many residents in the valley to rely on bottled water as their primary source for drinking and cooking. Panic buying at the beginning of the pandemic left stores across the valley without bottled water. In the case of COVID-19, unsafe and unreliable access to water has endangered a multitude of low-income communities by preventing them from performing protective, hygienic acts, handwashing, in particular, and forcing them to go to public water supply kiosks. As we've all learned, hand washing is one of the most necessary measures needed to slow and stop the spread of a virus. Without a correct implementation of groundwater sustainability plans under SGMA, many of these risks will continue.

Shelter in place orders resulted in people losing their jobs and hence, their source of income and being unable to pay utility services. Small utility services were also impacted because of low economic margins of operations in which small drops in income translate to being unable to provide service. Fortunately, many organizations and individuals wrote a letter to Governor Newsom that prompted him to issue an executive order protecting homes and small businesses from water shutoffs.

We now have the opportunity to give meaning to these current hardships by learning from them to prevent hardships from climate change. Climate change is a threat intensifier. In this case, the threat is a virus, and historical inequities and water vulnerabilities increased its impact on the most vulnerable among us. An example of the unpreparedness of the system to support our vulnerabilities during times of crisis is seen in the case of school children who rely on school lunches as their main meal of the day but are now unable to access this resource due to school closures. Some farmworkers, while cataloged as 'essential' by the federal government during this crisis, are undocumented and were not part of the stimulus package. The height of irony is farmworkers struggled with access to food distribution when they needed it.

There Is No Scenario Where Water Is Not Absolutely Necessary to Lessen the Impacts During a Crisis.

One of my colleagues wrote that moments of crisis often expose the weak points of a system. In the SJV, the weak points of the water system have been exposed for years and won't be strengthened without managing water resources sustainably. This is evidenced by the number of people in the SJV without access to safe, clean, and affordable drinking water. Considering that about 95% of valley residents depend on groundwater for at least part of their water, it is critical that GSPs explicitly include strategies for addressing some of the current and future water issues in the SJV.

Numerous, various kinds of climate threats will come, whether they develop as floods, heatwaves, wildfires, droughts, or other climate hazards, we need to be prepared and do everything possible to improve sustainable water management for all. While future climate-change-derived crises most likely will be different than COVID-19, there is no scenario where water is not absolutely necessary to lessen the impacts.

Wildfires can poison drinking water: Here's how communities can be better prepared

by Andrew J. Whelton, Caitlin R. Proctor, The Conversation

https://phys.org/news/2020-08-wildfires-poison.html

In recent years wildfires have entered urban areas, causing breathtaking destruction.

The 2018 Camp Fire in Paradise and Butte County, California was the deadliest and most destructive fire in California's history. It took 86 lives and destroyed more than 18,000 structures in a matter of hours.

Almost two years later, only a fraction of the area's 40,000-plus population has returned. This disaster followed the 2017 Tubbs Fire, which killed 22 people in California's Sonoma and Napa counties.

After both fires, drinking water tests revealed a plethora of acutely toxic and carcinogenic pollutants. Water inside homes was not safe to use, or even to treat. Water pipes buried underground and inside of buildings were extensively contaminated.

We are environmental engineers who help communities affected by disasters, and supported responses to both fires. As we conclude in a recently published study of burned areas, communities need to upgrade building codes to keep wildfires from causing this kind of widespread contamination of drinking water systems.

Wildfires and water

Both the Tubbs and Camp fires destroyed fire hydrants, water pipes and meter boxes. Water leaks and ruptured hydrants were common. The Camp Fire inferno spread at a speed of one football field per second, chasing everyone—including water system operators—out of town.

After the fires passed, testing ultimately revealed widespread hazardous drinking water contamination. Evidence suggests that the toxic chemicals originated from a combination of burning vegetation, structures and plastic materials.

Firefighting can accelerate the spread of contamination. As emergency workers draw hydrant water, they spread contaminated water through the water pipe network.

Metal, concrete and plastic pipes can become contaminated. Many plastics take up these chemicals like sponges. As clean water later passes through the pipes, the toxic substances leach out, rendering the water unsafe.

In the Tubbs and Camp fires, chemicals in the air may have also been sucked into hydrants as water pipes lost pressure. Some water system plastics decomposed and leached chemicals directly into water. Toxic chemicals then spread throughout pipe networks and into buildings.

Limited water testing by state and local agencies showed benzene and naphthalene were present at levels that could cause immediate harm. These, as well as methylene chloride, styrene, toluene and vinyl chloride exceeded longer-term regulated exposure limits. Many of these chemicals cause cancer. All can cause vomiting, diarrhea and nausea after short-term high concentration exposure.

Anyone who drinks the water containing these substances could be harmed. And simply running a faucet could cause chemicals to enter the air. Hot showers and boiling water would vaporize the chemicals and increase the dose a person breathed in. Some of these substances can also be absorbed through the skin.

Dangerous contamination levels

Benzene was found at concentrations of 40,000 parts per billion (ppb) in drinking water after the Tubbs Fire and at more than 2,217 ppb after the Camp Fire. According to the California Office of Environmental Health Hazard Assessment, children exposed to benzene for a single day can suffer harm at levels as low as 26 ppb.

The U.S. Environmental Protection Agency recommends limiting children's short-term acute exposure to 200 ppb, and long-term exposure to less than 5 ppb. The EPA regulatory level for what constitutes a hazardous waste is 500 ppb.

In early 2019, California conducted contaminated water testing on humans by taking contaminated water from the Paradise Irrigation District and asking persons to smell it. The state found that even when people smelled contaminated water that had less than 200 ppb benzene, at least one person reported nausea and throat irritation. The test also showed that water contained a variety of other benzene-like compounds that first responders had not sampled for.

The officials who carried out this small-scale test did not appear to realize the significance of what they had done, until we asked whether they had had their action approved in advance by an institutional review board. In response, they asserted that such a review was not needed.

In our view, this episode is telling for two reasons. First, one subject reported an adverse health effect after being exposed to water that contained benzene at a level below the EPA's recommended one-day limit for children. Second, doing this kind of test without proper oversight suggests that officials greatly underestimated the potential for serious contamination of local water supplies and public harm. After the Camp Fire, together with the EPA, we estimated that some plastic pipes needed more than 280 days of flushing to make them safe again.

Building codes could make areas disaster-ready

Our research underscores that community building codes are inadequate to prevent wildfire-caused pollution of drinking water and homes.

Installing one-way valves, called backflow prevention devices, at each water meter can prevent contamination rushing out of the damaged building from flowing into the larger buried pipe network.

Adopting codes that required builders to install fire-resistant meter boxes and place them farther from vegetation would help prevent infrastructure from burning so readily in wildfires. Concrete meter boxes and water meters with minimal plastic components would be less likely to ignite. Some plastics may be practically impossible to make safe again, since all types are susceptible to fire and heat.

Water main shutoff valves and water sampling taps should exist at every water meter box. Sample taps can help responders quickly determine water safety.

The smell test doesn't work

Under no circumstance should people be told to smell the water to determine its safety, as was recommended for months after the Camp Fire. Many chemicals have no odor when they are harmful. Only testing can determine safety.

Ordering people to boil their water will not make it safe if it contains toxic chemicals that enter the air. Boiling just transmits those substances into the air faster. "Do not use" orders can keep people safe until agencies can test the water. Before such advisories are lifted or modified, regulators should be required to carry out a full chemical screen of the water systems. Yet, disaster after disaster, government agencies have failed to take this step.

Buildings should be tested to find contamination. Home drinking water quality can differ from room to room, so reliable testing should sample both cold and hot water at many locations within each building.

While infrastructure is being repaired, survivors need a safe water supply. Water treatment devices sold for home use, such as refrigerator and faucet water filters, are not approved for extremely contaminated water, although product sales representatives and government officials may mistakenly think the devices can be used for that purpose.

To avoid this kind of confusion, external technical experts should be called in assist local public health departments, which can quickly become overwhelmed after disasters.

Preparing for future fires

The damage that the Tubbs and Camp fires caused to local water systems was preventable. We believe that urban and rural communities, as well as state legislatures, should establish codes and lists of authorized construction materials for high-risk areas. They also should establish rapid

methods to assess health, prepare for water testing and decontamination, and set aside emergency water supplies.

Wildfires are coming to urban areas. Protecting drinking water systems, buried underground or in buildings, is one thing communities can do to prepare for that reality.

Finding toxic carcinogenic metals faster in foods and water

by University of Johannesburg

AUGUST 4, 2020

https://phys.org/news/2020-08-toxic-carcinogenic-metals-faster-foods.html

Researchers at the University Johannesburg have developed an efficient and more sensitive method to test for dangerous levels of heavy metals like arsenic, cadmium and chromium in vegetables and water. The method can be used to test other foods, also. It is possible to test for several metals at the same time and the process can be automated. The process involves technology readily available in laboratories in developing countries.

Trace metals such as lead (Pb), arsenic (As), cadmium (Cd) and thallium (Tl) are toxic even at very low concentrations. Arsenic, cadmium and chromium hexavalent compounds are also recognised as carcinogens by the International Agency for Research on Cancer (IARC) and the US National Toxicology Program (NTP). Combining accurate and established techniques, the method makes it possible to test for several trace metals simultaneously.

"The study provides a simple, fast and sensitive method for laboratories with limited resources. The research results can also improve food quality for consumers," says lead author Prof Philiswa Nomngongo, the SARChI Chair of Nanotechnology for Water at the University of Johannesburg.

"This study contributes data that can be used as a reference when setting up or revising the guidelines for the maximum allowable levels in common vegetables and palatable water," she adds.

"The method is environmentally friendly and conforms to green analytical chemistry principles. It does not introduce secondary pollution."

New combination of techniques

Previous studies used similar methods, but for analysis of organic pollutants says Dr. Luthando Nyaba, co-author of the study, also at the University of Johannesburg.

"This is the first time where a clay-based adsorbent is combined with a cloud point extraction method for simultaneous analysis of trace metals in vegetables and palatable water," he says.

"In this method, we convert solid vegetable samples into liquid form. This makes it possible to directly analyse trace metals with a suitable analytical instrument. Direct, simultaneous analysis

means that more vegetable samples can be analysed at the same time, more quickly than was possible before," adds Nyaba.

The method uses ultrasound-assisted cloud-point extraction and dispersive micro-solid phase extraction to preconcentrate samples from vegetables and water. The samples are then directly analysed with inductively coupled plasma optical emission spectrometry. The equipment used for the research is a few years old, says Nomngongo. However, he says, "If we buy vegetables at 8:00 in the morning, we have the analysis results by 1:00 in the afternoon," she adds.

To identify trace metals in foods and water requires analytical chemistry techniques. These evolve over time, much like apps on mobile phones, he says.

"The developers of a phone app can fix software bugs without rewriting the app completely. They add fixes to a new version, and users download the new version to benefit.

"Analytical chemists are like software developers, making updates to an existing method to make them compliant with new analytical chemistry principles. In this case, one of our goals was to significantly the reduce the amounts of hazardous solvents traditionally used in testing for trace metals," adds Nyaba.

Hard to detect

All over the world, unwanted trace metals are showing up in vegetables and drinking water. These metals are among many pollutants that seriously affect human health. Monitoring which metals occur in foods and beverages can really challenge a laboratory. First, labs often cannot directly measure some trace metals in foods, because they occur in concentrations that are too low for the the equipment to detect. This means that sophisticated methods and expensive equipment are needed to detect the presence of some trace metals.Secondly, vegetables are inherently complex to analyse for chemical elements accurately, and often require long, time-consuming procedures to prepare samples for metal testing. This means that monitoring for trace metals in agricultural produce is generally slow, expensive, and can only be done by highly qualified scientists. For developing countries, monitoring can be inaccessible because of that.

To stay healthy, humans need to eat vegetables and drink water. High-quality vegetables contain many micronutrients, including trace metals the body needs to function well. But high doses of some metals can make people sick, though health conditions such as cancer may take years to manifest. Others are so toxic that very low amounts can make people extremely ill within days or weeks.

"We need to eat foods containing some trace metals, such as copper, zinc and iron. But others are toxic—lead, arsenic cadmium, mercury, among others. On the one hand, vegetables form a vital part of human nutrition. On the other, they are good accumulators of heavy metals," says Nomngongo. "Knowing the level of metal contamination in the vegetables we eat and the water we drink can make a difference to health and quality of life," she adds.

Metals everywhere

Unwanted metals affect food crops and drinking water worldwide. Heavy metals pollution from urbanisation, factories, mines, and other industries filter into sources for drinking water and irrigation in agriculture. Some agricultural fertilizers, including re-purposed sewage sludge, also affect food crops. Many of these metals bio-accumulate in the human body, in animals, plants and the environment. This means that the metals cannot be removed and that the resulting problems can only be managed, not cured.

The World Health Organisation (WHO) and national governments publish drinking water guidelines and other standards showing which levels of metals in food and water are likely to affect human health. And the WHO's International Agency for Research on Cancer (IARC) and the US National Toxicology Program (NTP) publish lists of known and probable human carcinogens.

Locally, the research results can help improve the quality of life for communities that depend on the studied water sources, says Nomngongo. "The results can also assist the South African government and environmental protection agencies to set, review and enforce water quality regulations," she adds.

USDA invests $462M to modernize water and wastewater infrastructure

Funding will improve rural water infrastructure for 467,000 rural Americans in 44 states.

Aug 5th, 2020

https://www.waterworld.com/drinking-water/infrastructure-funding/article/14181114/usda-invests-462m-to-modernize-water-and-wastewater-infrastructure

WASHINGTON, DC -- The United States Department of Agriculture (USDA) is investing $462 million to modernize critical drinking water and wastewater infrastructure across rural America.

“Upgrading the infrastructure that delivers safe drinking water and modern wastewater management facilities will improve public health and drive economic development in our small towns and cities,” Deputy Under Secretary for Rural Development Bette Brand said. “Under the leadership of President Trump and Agriculture Secretary Perdue, USDA continues to be a strong partner with rural communities, because we know that when rural America thrives, all of America thrives.”

USDA is funding 161 projects through the Water and Waste Disposal Loan and Grant Program. These investments will benefit 467,000 residents. The following are examples of projects being funded under today’s announcement.

In North Bend, Wash., the Sallal Water Association will use a $6.5 million loan to construct a reservoir, a new headquarters building and a new well. The Association supplies potable water to about 1,700 connections serving approximately 5,000 people throughout its service area, which includes the Wilderness Rim Association. The system currently delivers 190 million gallons of water each year from three wells.

The Sanbornville Precinct in New Hampshire will use a $2.9 million loan and a $695,885 grant to replace outdated water system infrastructure dating from the 1930s. This project will resolve health and sanitary issues by upgrading the source pump house facility and replacing 2.3 miles of failing bituminous-coated steel water mains. These improvements will bring the system into compliance with state and federal Occupational Safety and Health Administration regulations and provide enhanced water quality and reliability for 1,056 residents.

The town of Lawndale, N.C., will use an $872,000 loan and a $1.5 million grant to provide sanitary sewer service to an area of the town that is currently without sewer service. Many homes in the area depend on individual onsite septic systems which are failing. The proposed project will install approximately 16,785 linear feet of eight-inch gravity sewer line, 60 manholes, 141

cleanouts, service laterals, and make other upgrades to service 141 additional residences. Approximately 600 residents will benefit from the project.

The investments that USDA announced today are being made in Alabama, Arkansas, Arizona, California, Connecticut, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Mississippi, Montana, Nebraska, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Vermont, Washington, West Virginia, Wisconsin and Wyoming.

After arid July, 99% of Utah now in drought condition

By MARK SHENEFELT Standard-Examiner

Aug 6, 2020

https://www.standard.net/news/environment/after-arid-july-99-of-utah-now-in-drought-condition/article_4f697176-a052-50e5-8783-8d29a283ba65.html

Utah's valleys and mountains dried out significantly in July, deepening drought conditions to cover 99% of the state, according to monthly climate data.

Soil moisture saturation registered at 33% in the Aug. 1 Utah Climate and Water report, compared to 41% the previous year.

"That's a little frightening," Jordan Clayton of the U.S. Natural Resources Conservation Service said Wednesday. "That's a fairly major concern for fire hazard as well."

Mountain precipitation was just 40% of average in July, leaving the water year to date at 83% of average.

It was no better in the valleys, which got 0.4 inches of rain statewide. Northern Utah received only 0.2 inches.

That left the lower elevations' water year total to date at 7.3 inches, again below average.

Except for a 1% sliver of the northernmost part of the state, Utah was almost entirely in drought condition in July, according to the National Integrated Drought Information System.

Even worse, 10.2% of the state, mostly in the southern end, reached the "D3 Extreme Drought" level.

In a D3 area, effects include major crop and pasture losses and widespread water shortages or restrictions.

Fortunately, none of the state has worsened to D4, the Exceptional Drought classification, Clayton said.

The impact in a D4 region includes exceptional and widespread crop and pasture losses and water shortages creating emergencies.

Most of the Wasatch Front from Ogden to Provo is at D2, Severe Drought. The problems in a D2 region are some crop and pasture losses, water shortages and water restrictions.

According to federal drought data, 28% of U.S. land area is in drought condition, affecting 52.4 million people.

Extreme or exceptional drought exists in Utah and 10 other states.

On the bright side in Utah, solid reservoir storage has prevented irrigation or other water supply problems this summer.

Statewide storage was at 76% of capacity at the end of July, the climate report said.

Clayton said that’s largely due to carryover supply from the banner water year of 2018-19.

New technology uses sunlight to turn seawater into drinking water in 30 minutes

It provides an energy-efficient and environmentally-sustainable solution for desalination.

BYASHWINI SAKHARKAR

AUGUST 11, 2020

https://www.techexplorist.com/technology-uses-sunlight-mof-turn-seawater-drinking-water/34395/

Clean drinking water is essential to sustain human life and is of paramount importance to human health. Fortunately, the planet has enough freshwater for every inhabitant. However, billions of people across the world are deprived of access to clean, safe drinking water.

Now, in a groundbreaking study led by Monash University, researchers have succeeded in transforming brackish water and seawater into safe, clean drinking water. Instead of heat or electricity, the new technology harnesses the power of sunlight to desalinate and purify water in less than 30 minutes. This breakthrough has generated a hope to solve the scarcity of clean and safe drinking water in areas that may not have access to a reliable electric grid necessary for other methods of desalination.

The study has used a combination of metal-organic frameworks (MOF) and sunlight to filter harmful particles from water. Each kilogram of MOF can generate large amounts of clean water per day. In addition, the technology performs this task in a more energy-efficient and environmentally friendly manner than other desalination methods.

MOFs are so porous with the largest surface area of any material known – they can fit the entire surface of a football field in a teaspoon. This characteristic makes it really effective at sucking up salt from water. In their study, the team created a dedicated MOF called PSP-MIL-53 – a poly (spiropyran acrylate) (PSP) functionalized metal-organic framework (MOF), which was able to yield 139.5L of fresh drinking water per kilogram of the material per day, with low energy consumption.

The system was tested using water with a TDS of 2,233 parts per million (ppm). The researchers found that their system is capable of achieving a TDS of less than 500 ppm – exceeding the standards set by the World Health Organisation (WHO) for good quality drinking water. The WHO suggests that good quality drinking water should have a total dissolved solid (TDS) of no greater than 600 ppm.

Once the absorption is done, the MOF is ready to be reused after four minutes of exposure to sunlight, which causes the material to release its collected salt.

The research opens up a new direction for designing stimuli-responsive materials for energy-efficient and sustainable desalination and water purification.

"*This study has successfully demonstrated that the photoresponsive MOFs are a promising, energy-efficient, and sustainable adsorbent for desalination*," said lead author Professor Huanting Wang from the Department of Chemical Engineering at Monash University in Australia. "*Our work provides an exciting new route for the design of functional materials for using solar energy to reduce the energy demand and improve the sustainability of water desalination*."

"*These sunlight-responsive MOFs can potentially be further functionalized for low-energy and environmentally-friendly means of extracting minerals for sustainable mining and other related applications*."

‘It’s the future’: Dammeron Valley dedicates new solar well system pumping 325,000 gallons per day

Written by Alexa Morgan

August 12, 2020

https://www.stgeorgeutah.com/news/archive/2020/08/12/avm-its-the-future-dammeron-valley-dedicates-new-solar-well-system-pumping-325000-gallons-per-day/#.XzwaEuhKiUl

DAMMERON VALLEY — At a dedication ceremony held Monday morning, representatives from Dammeron Valley Water Works and local residents marked the installation of a solar-powered pumping system for the community’s North Ridge Well Field.

“It’s the future,” Dammeron Valley developer Brooks Pace said.

Lisa Chauvin, office manager for Dammeron Valley Water Works, told St. George News that the process of gaining approval, securing funding and preparing Well No. 3 for installation has taken roughly four months in all.

The installation comprises three photovoltaic ground-mounted panels and two pumps. The panels generate a combined 40 kilowatts of energy. The system was manufactured in Europe by German company Lorentz and installed by Southwest Sales, Service & Pumps of St. George.

“It’s a very unique pump that’s made just for solar power because it’s so variable,” Pace said. “Sometimes it’ll be pumping 30 gallons, and sometimes it’ll pump 200 gallons.”

Lorena Picazo, co-owner of Southwest Sales, Service & Pumps, told St. George News that the rugged terrain of the well field made access difficult. Once the area was cleared and the ground leveled, installation took a little more than a month.

During the peak of summer and with full sun, the system is expected to pump approximately 325,000 gallons of water to Dammeron Valley’s tanks daily. Over the course of a year, Pace said Dammeron Valley Water Works aims to pump 81 million gallons, roughly 90% of the community’s current annual usage.

This new installation is the latest expansion in an ongoing effort to reduce energy costs for the community as well as dependency on the power grid. Dammeron Valley Water Works installed their first solar pump within the North Ridge well field in September 2018.

Pace said this system, capable of pumping approximately 100 gallons per minute under full sun – or 20% of the community's supply – was intended not only as a backup for the existing pumps in the case of a power outage but also as a pilot that could eventually open the door to additional solar pumps.

"It was successful and everything that we hoped it would be," he said.

Well No. 4, the largest in the North Ridge field, has a 100-horsepower electric pump that will remain at the ready to supplement shortages. Dammeron Valley Water Works hopes this pump will only be needed at night and on weekends when power costs are one-third of daytime rates.

Dammeron Valley currently has about 500 homes. Anticipating future growth, Pace said that plans for a solar-pumped fifth well, deeper into the community's aquifer to access colder water, are on the horizon but still three or four years away.

The installation at Well No. 3 is three times larger than the pump installed two years ago. Pace said that the total cost for both systems was approximately $200,000 plus an additional $50,000 spent on fencing around the well site to prevent deer from damaging the solar panels.

"It will pay for itself in about 10 years in power savings – maybe quicker because power rates are going up," he said. "And we'll have many years of free water."

Navajo Families Await Justice After Utah Settles Gold King Mine Spill Case

By KATE GROETZINGER • AUG 12, 2020

https://www.kuer.org/post/navajo-families-await-justice-after-utah-settles-gold-king-mine-spill-case-0#stream/0

The Gold King Mine spill released about three million gallons of toxic water into the San Juan River in 2015. Utah settled a lawsuit with the federal government over the spill in early August. But Navajo families who live along the river are still waiting for their day in court.

Steve Benally lives in Halchita, a community on the northern edge of the Navajo Nation in San Juan County. His home has running water, unlike many on the reservation, but it comes directly out of the San Juan River. The Navajo Tribal Utility Authority operates a pump and treatment facility there, and it shut the pump off after the Gold King Mine spill. In the following weeks, there was a shortage of clean water in his community.

“They told us not to be using water, which we had stored,” Benally said. “[They said] try not to use it for gardening, or to water the shade tree, or too much laundry washing or vehicle washing.”

Benally lost his garden that year and spent a lot of time getting drinking water from Bluff, 30 minutes away. And he said he’s still suffering the secondary effects of the spill. The Tribal Utility Authority hasn’t been able to get the water treatment facility back online after it was shut off, so now it has to haul in clean water to fill the community’s storage tank. Benally said sometimes the tank runs out of water in the summer and on holidays.

“You have to have some standby water, so if that happens you can use that to flush your toilet or have some drinking water you can fall back on,” he added.

Benally is one of over 300 Navajo residents and farmers who live along the San Juan River who are suing the federal government and the mining companies responsible for the spill.

The lawsuit consolidated individual claims made to the Environmental Protection Agency seeking a total of around $78 million in damages. All were submitted prior to 2018 but are still pending.

“The Gold King Mine spill happened five years ago,” said Kate Ferlic, one of the lawyers handling the group’s case. “And basically these folks are being ignored.”

That’s certainly how Benally feels. He was excited to join the lawsuit, which was filed in August 2018, but hasn’t heard from his lawyers in months.

“We don’t have meetings anymore,” he said. “So now, you know, we’re just kind of like sitting in the dark. A lot of people just gave up on it, that’s their attitude now.”

The lawsuit is still pending, according to Ferlic, who said her firm has sent out two notices to plaintiffs since the pandemic began. She said it’s in the discovery, or information gathering, phase right now. Next summer is the earliest she expects it could go to trial.

Water watchers pin hopes on monsoon to help ease drought conditions

August 13, 2020

https://moabtimes.com/2020/08/13/water-watchers-pin-hopes-on-monsoon-to-help-ease-drought-conditions/

The state drought outlook remains dismal, according to reports from the Utah office of the Natural Resources Conservation Service based on July data.

“July was a rough month in Utah’s valley locations, where a scant 0.4 inches of precipitation accumulated,” said officials in the press release. “Northern and western Utah, and the Uinta Basin fared the worst with just 0.2 inches of accumulation, whereas southeastern Utah saw 0.6 of an inch accumulated. The water year total for Utah’s lower elevations incremented up to just 7.3 inches, still below average. For yet another month, soil moisture conditions are below normal and temperatures persist above normal. Also for another month, drought conditions continued to deteriorate in July. Almost the entire state of Utah (99%) is now experiencing drought conditions. Most troubling is the introduction of extreme drought in Utah, which now covers about 9% of the state. Needless to say, monsoonal moisture would be especially welcome this August,” said Jordan Clayton with the NRCS.

“Precipitation at Utah’s SNOTEL sites in our mountain locations has continued to disappoint,” said Clayton. “July precipitation was only 40% of average, bringing the water-year-to-date (October through July) precipitation to 83% of average. The statewide mountain soil moisture is at 33% of saturation compared with 41% of saturation last year. This is well below normal and reflects the lack of monsoonal precipitation this summer thus far.”

Utah’s reservoirs remain in “reasonably good” condition, excluding a few areas such as Moab, which has much more severe lows. Said Clayton, “Statewide reservoir storage is at 76% of capacity, though some areas (such as the Sevier basin) are much lower. Water Availability Index values, which combine current reservoir storage with stream flows for major Utah watersheds, are generally around average except for the eastern Uintas, Moab area, San Pitch and Lower Sevier watersheds which are all below the 30th percentile. Let’s hope that monsoonal moisture arrives soon!”

A watershed moment for U.S. water quality

By Emily Caldwell

August 13, 2020

https://news.osu.edu/a-watershed-moment-for-us-water-quality/

A new federal rule that determines how the Clean Water Act is implemented leaves millions of miles of streams and acres of wetlands unprotected based on selective interpretation of case law and a distortion of scientific evidence, researchers say in a new publication.

In a Policy Forum article published in the Aug. 14 issue of *Science*, the researchers assert that the Navigable Waters Protection Rule undermines the spirit – if not the letter – of the Clean Water Act by protecting only waters that have a permanent hydrologic surface connection to rivers, lakes and other large "navigable" bodies of water. Also omitted from consideration is maintaining the integrity of the biological and chemical quality of the nation's waters, protections that are explicitly called for in the Clean Water Act.

"It's so important to say, right out of the gates, that the new rule does not protect water in the way that the Clean Water Act was intended to protect water," said lead author Mažeika Sullivan, director of the Schiermeier Olentangy River Wetland Research Park at The Ohio State University.

The rule went into effect on June 22.

Left unprotected under the new rule are stand-alone wetlands across the country whose collective area is approximately the size of the state of West Virginia. Among the millions of miles of ephemeral streams – those that flow after precipitation events – losing federal protection are, for example, more than 95 percent of Arizona's streams, including many tributaries that flow into the Grand Canyon.

The change means that now-unprotected waters may be subjected to a variety of harmful human activities such as dredging or filling in waters for development, or even unpermitted dumping of industrial waste into streams or wetlands. Some potential results: higher risk for floods, loss of biodiversity, and threats to drinking water and recreational fishing.

"We're talking about major roll-backs in protections that limit activities that impair, pollute and destroy these systems," said Sullivan, also associate professor in Ohio State's School of Environment and Natural Resources, who co-authored the article with colleagues specializing in aquatic science, conservation science and environmental law.

"And it comes at a time when we're really starting to understand multiple stressors on water – not just urbanization or climate change or pollution, but how all these factors interact. And now

we're removing protections and potentially undermining decades of taxpayer investment in improving water quality.

"It's a travesty, not just for us now, but for future generations. It could really be a watershed moment in that sense."

Legal battles have been waged for years over which non-navigable U.S. waters should be protected under the Clean Water Act, and the U.S. Supreme Court weighed in with opinions in a 2006 case. Justice Antonin Scalia argued that non-navigable waters should be covered by federal law only if they have a "relatively permanent" flow and a continuous surface connection to traditionally protected waters. Justice Anthony Kennedy suggested a non-navigable water body should be protected if it has a "significant nexus" to a traditional navigable waterway – meaning it can affect the physical, biological and chemical integrity of downstream waters.

In 2015, the Obama administration implemented the Clean Water Rule, which classified all tributaries and most wetlands as "waters of the United States" that fall under federal jurisdiction. At the heart of that rule was a Connectivity Report produced by the Environmental Protection Agency, backed by a review of more than 1,200 scientific publications and input from 49 technical experts. The science supported protection for isolated or intermittent systems that, if polluted or destroyed, would decrease water quality downstream. Sullivan was a member of the EPA Scientific Advisory Board that confirmed the scientific underpinnings of the report and the rule.

The language of the new Navigable Waters Protection Rule instead harkens back to Scalia's 2006 opinion, protecting waters with "relatively permanent" surface flows and excluding from federal jurisdiction all groundwater and all ephemeral bodies of water, as well as others.

"So what's extremely concerning from a policy standpoint is that the federal government is, at least in part, leaving science aside," Sullivan said. "This idea of connectivity is one of the most crucial components of the science that has largely been ignored in this rule. There are magnitudes of connectivity – it could be frequency or how long it lasts. There are also different types of connectivity: biological, chemical and hydrologic.

"Further, just because a waterbody may be less connected to another doesn't necessarily mean it's less important for water quality."

For human recreation and well-being, Sullivan said, small streams and wetlands are critical, both in their own right, as well as because they support larger, downstream ecosystems such as rivers, lakes and reservoirs.

"There are tendrils that extend into every aspect of our lives, from how we recreate and how we live, to our economy, with cultural implications for a lot of folks in the U.S. Water is fundamental to people's sense of place and where they belong," he said.

Sullivan and colleagues cited an April 2020 Supreme Court decision that may influence outcomes of the more than 100 pending lawsuits filed in opposition to the new rule. In *County of Maui v. Hawaii Wildlife Fund*, the court affirmed for the first time that pollutants that travel through groundwater and then emerge into surface waters are covered by the Clean Water Act.

Until the litigation is sorted out, the authors urged mobilization of grassroots efforts among watershed councils, other agencies and academics to conserve and protect water – a tall order, Sullivan acknowledged, when it comes to staying coordinated and coming up with resources.

“We’re going to have to start thinking about this in a very different way,” he said. “Everybody needs clean water, right? This isn’t a political issue.”

Budget cuts evaporate algae testing for most Utah water bodies

By Connor Richards Daily Herald

August 17, 2020

https://www.heraldextra.com/news/local/govt-and-politics/legislature/budget-cuts-evaporate-algae-testing-for-most-utah-water-bodies/article_7c14c35f-5de7-5dd8-8b07-5cfd02eb9fe7.html

Dozens of recreational Utah water bodies that have been regularly tested for toxic algal blooms in recent years went untested this spring due to state budget cuts to the Utah Division of Water Quality (DWQ) testing and monitoring program.

The DWQ began monitoring 65 water bodies after a harmful algal bloom, or HAB, spread across Utah Lake in 2016 and led to the Utah County Health Department closing the lake for two weeks, according to DWQ Director Erica Gaddis. The same year, a separate algal bloom killed fish in the Scofield Reservoir in Carbon County.

“This is really when we realized we needed a more robust, coordinated (testing and monitoring) approach across the state,” Gaddis told state lawmakers during a Natural Resources, Agriculture and Environmental Quality Appropriations Subcommittee meeting on Monday.

During the 2019 fiscal year, the Utah State Legislature appropriated $200,000 in annual funds for HAB monitoring and testing. But, according to Gaddis, lawmakers cut that funding during this year’s general session and re-directed it toward algal blooms testing and treatment initiatives specific to Utah Lake.

“So with that cut and with the supplemental cut of $100,000 that we had already spent, we were not able to get our monitoring crews out this spring,” the DWQ director said.

In late June, the United States Environmental Protection Agency (EPA) gave the state water quality division a $104,000 grant to fund HAB monitoring efforts. The DWQ monitored 18 water bodies in July, a nearly three-quarter decrease in the number of water bodies that were monitored the previous year.

“We’ve reduced from about 60 water bodies around the state that we have been monitoring for the last few years down to just 18 because of the funding cuts,” said Gaddis. “And those 18 are largely state parks. They’re really the areas where the public is most likely to interact directly with the water body, and where we’ve had issues of algal blooms in the past.”

While 35 health advisories related to HABs were issued for various water bodies throughout the state between 2017 and 2019, which is on par with the annual average, only four advisories have

been issued this year, according to an HAB program summary presented to the legislative subcommittee on Monday.

Despite the decrease in monitoring, the Utah Poison Control Center has already reported 43 illnesses associated with algal blooms this year, which is higher than the statewide average of 40 over the past three years.

Gaddis urged lawmakers to restore funding for statewide monitoring of toxic algae, which she noted can cause “gastrointestinal, some skin irritation and some neurological symptoms” in humans, pets and livestock.

Gaddis also noted that HABs “are becoming more prominent” in Utah, as well as nationally and globally, in part due to increasing summer and spring temperatures.

“The funding that was cut from DEQ really supports the foundational aspects of this program,” she said. “That is, the monitoring crews and the lab analysis and the local health department advisory program. So in terms of moving forward, it’s our hope that we can find a way to restore that foundational funding in the years to come.”

Rep. Keven Stratton, R-Orem, said he supported water quality monitoring efforts but added that one of the reasons legislators cut funding was because “many stakeholders began to raise concerns with the testing program because the amount of warnings and the amount of concerns raised were exponentially greater than the EPA standards in this sphere.”

“We certainly can’t put at risk the health (and) the safety of the public,” said Stratton, who narrowly defeated his GOP opponent, David Shallenberger, during the June primary. “But (at) the end of these (state-funded HAB) studies are recommendations to correct, and we need to make sure that we’re getting accurate information on the front end.”

For more information about HABs, visit http://deq.utah.gov/water-quality/harmful-algal-blooms-home.