



MARCH 10, 2021  
WATER CONSERVATION AND DROUGHT MANAGEMENT  
ADVISORY BOARD

REGULAR MEETING 2:00 P.M. - AMENDED

**Consistent with provisions of the Utah Open and Public Meetings Act, Utah Code Ann. § 54-2-207(4), the Water Conservation and Drought Management Advisory Board Chair has issued written determinations supporting the decision to convene electronic meetings of the Board without a physical anchor location. Due to the health and safety risks related to the ongoing COVID-19 pandemic and considering public health orders limiting in-person gatherings, the Water Conservation and Drought Management Advisory Board will continue to hold meetings by electronic means. The public is invited and encouraged to view the Board's electronic meetings by viewing the City's YouTube**

**channel: <https://www.youtube.com/MoabCityGovernment>.**

1. Call To Order
2. Written Determination To Conduct Electronic Meetings
3. Approval Of Minutes
  - 3.I. Minutes: February 10, 2021

Documents:

[WB-MIN-2021-02-10 DRAFT.PDF](#)

4. Board And Staff Reports
5. Presentation Of And Discussion About Graywater Regulations By The Southeastern Utah Health Department: Discussion And Possible Action
6. Water Conservation Plan Update: Review And Discussion Of Draft Conservation Policies

Documents:

[WATER CONSERVATION PLAN OUTLINE AND ASSIGNMENTS.PDF](#)  
[DRAFT WCP CONSERVATION POLICIES.PDF](#)  
[DRAFT WATER CONSERVATION PLAN UPDATE, MD PORTION.PDF](#)

7. Draft Time Of Day/Day Of The Week Water Resource Management Ordinance: Workshop, Discussion And Possible Motion

Documents:

8. Adjournment

**Special Accommodations:**

In compliance with the Americans with Disabilities Act, individuals needing special accommodations during this meeting should notify the Recorder's Office at 217 East Center Street, Moab, Utah 84532; or phone (435) 259-5121 at least three (3) working days prior to the meeting.

Check our website for updates at: [www.moabcity.org](http://www.moabcity.org)

**CITY OF MOAB**  
**WATER CONSERVATION AND DROUGHT MANAGEMENT ADVISORY BOARD**  
**REGULAR MEETING MINUTES**  
**February 10, 2021**

The Water Conservation and Drought Management Advisory Board held its regular meeting on the above date. Consistent with provisions of the Utah Open and Public Meetings Act, Utah Code Ann. §54-2-207(4), the Water Conservation and Drought Management Advisory Board Chair has issued written determinations supporting the decision to convene electronic meetings of the Board without a physical anchor location. Due to the health and safety risks related to the ongoing COVID-19 pandemic and considering public health orders limiting in-person gatherings, the Water Conservation and Drought Management Advisory Board will continue to hold meetings by electronic means. An anchor location was not provided. An audio recording of the meeting is archived at <http://www.utah.gov/pmn/index.html>. A video recording is archived at <https://www.youtube.com/watch?v=3XmlPE2J2YU>.

***Regular Meeting—Call to Order and Attendance:***

Water Board Chair Jeremy Lynch called the meeting to order at 2:03 PM. Participating remotely were Water Board Members Arne Hultquist, Kyle Bailey, and Mike Duncan. Water Board Member Kara Dohrenwend was absent. City staff participating remotely were Assistant City Manager Carly Castle, Public Works Director Levi Jones, Recorder Sommar Johnson, and Deputy Recorder Kerri Kirk. City Engineer Chuck Williams joined the meeting at 2:09 PM. Members of the public participating remotely were Eve Tallman and Steve Getz.

**Approval of Minutes: January 13, 2021**

**Discussion:** Board Vice Chair Hultquist requested three corrections to the minutes from January 13, 2021, which were emailed to Assistant City Manager Castle and Board Chair Lynch.

**Motion:** Board Chair Lynch moved to approve the minutes with the recommended changes by Board Member Hultquist. Board Member Duncan seconded the motion.

**Vote:** The motion passed 4-0 with Board Members Hultquist, Duncan, Lynch, and Bailey voting aye. Board Member Dohrenwend was not present for the vote.

**Board and Staff Reports:**

Board Vice Chair Hultquist reported having a nice discussion with Utah Division of Water Rights Regional Engineer Marc Stilson and UGS about more groundwater monitoring. He said, hopefully, in the next month or two, we'll have a groundwater monitoring plan available that we can consider funding for the wetlands.

Board Member Duncan inquired about getting Kolm, Gardner, UGS, and others together for the MAWP meeting in March. Board Vice Chair Hultquist confirmed there is a state of the science for groundwater discussion on the MAWP meeting agenda for March. He said it is the third Wednesday of the month at 1 PM.

**Discussion Regarding Appointment of New Water Conservation and Drought Management Advisory Board Members:**

Board Chair Lynch stated there are three applicants for the Board: Eve Tallman, Steve Getz, and Beth Malloy. He said Tallman and Getz are present for the meeting, and Malloy may join the meeting later on. Assistant City Manager Castle said each applicant will be interviewed individually by the Board. She said one vacancy is for the county seat. She said Getz lives in the county currently, and Malloy may be moving near the golf course, which would put her in the county as well. She said Tallman lives in the city limits.

Board Vice Chair Hultquist requested introductions before the interviews. Getz was brought into the meeting, and the Board and City staff introduced themselves. Assistant City Manager Castle inquired about Getz's interest in being on the Board. Getz shared his background and interest in the Moab area's water.

Board Member Duncan said there are two broad areas of interest for the Board: producing an updated water conservation report and aquifer capacity. Getz said he reviewed the 2016 conservation report, which seemed pretty comprehensive. He said he reviewed the meeting minutes for the last few months to see what issues have been focused on.

Assistant City Manager Castle inquired about Getz's experience and expertise. Getz provided his background with aquifers and surface water rights. He said the issues with aquifers include: recharge rate, amount of storage, establishing monitoring systems, and how much reserve is necessary. He expressed concern about the number of new applications for water rights. Board Vice Chair Hultquist said there will need to be a conversation about the history of the last three years and where the water rights stand currently.

Assistant City Manager Castle inquired about Getz's education background. Getz said his degree is primarily environmental chemistry and he founded his own lab in 1986. There was discussion about water chemistry and discerning between multiple aquifers.

Getz inquired about the water rights for the discharge from the sewer plant. Board Vice Chair Hultquist said the state owns the water coming out of the wastewater treatment plant. There was a discussion about the water requiring a second treatment plant and distribution system before it could be reused. The Board thanked Getz for applying and proceeded to the next applicant.

Tallman was brought into the meeting, and it was determined that introductions were not necessary. Assistant City Manager Castle inquired about Tallman's interest in being on the Board. Tallman shared her background and interest in being on the Board. Tallman inquired about whether growth can be limited based on water. Board Member Duncan inquired about additional suggestions to pacify residents who are mad about the increasing water demand from commercial locations.

Tallman inquired about the status of hiring a new sustainability director. Assistant City Manager Castle said there have been some candidates and the next steps are being taken. Tallman said the water conservation education effort will benefit from the sustainability director's assistance. Board Chair Lynch thanked Tallman for attending the meeting and for her application.

Board Chair Lynch confirmed that Malloy had not joined the meeting yet. He requested leaving ten minutes at the end of the meeting to determine Board member recommendations.

#### **Water Conservation Plan Update:**

There was discussion about the schedule and potential assignments for the water conservation plan update. Assistant City Manager Castle reviewed which parts of the plan will be generated by City staff and which parts need collaboration with the Board. There was discussion about the plan items, which Board Members would be assigned to specific items, and the timeline to discuss the topics at upcoming meetings. Board Member Duncan requested a reminder two weeks prior to the next meeting about drafting the items he volunteered for.

**Draft Shortage Contingency Plan Ordinance:**

**Discussion:** Assistant City Manager Castle introduced this topic, and said it authorizes the City Manager to develop a water shortage contingency plan with the assistance of staff, the Water Board, and City Council. She requested input from the Board regarding warnings, fines, and the appeals board.

Board Vice Chair Hultquist said a water shortage contingency plan is necessary for an immediate shortage or public works infrastructure disruption. He said that, during a drought, the City will have to cut back on water use systematically. He suggested the Division of Water Rights should be included in the plan, because they can direct the City during a shortage to conserve water.

There was a discussion about the fines and appeals board process which protects City staff and the public by having three members of the Water Board as independent objective members of the appeals board.

Board Member Duncan mentioned three large entities who may have an issue with conservation: Grand Water & Sewer Service Agency (GWSSA), Moab Irrigation Company, and the City. He said distributing the conservation problem equitably is an issue.

Board Vice Chair Hultquist expressed concern about conservation and said he would like to start teaching conservation habits. He said the ordinance would only apply to municipal water users from the City. Assistant City Manager Castle said the conservation plan update includes valley-wide conservation efforts, including coordination with GWSSA and the Moab Irrigation Company.

There was discussion about how this ordinance would be beneficial for the emergency action plan, and how to prioritize uses under different shortage scenarios.

**Motion:** Board Vice Chair Hultquist moved to recommend to the City Council to approve this ordinance that gives them the opportunity to develop a contingency plan. Board Member Duncan seconded the motion.

**Vote:** The motion passed 4-0 with Board Members Hultquist, Duncan, Lynch, and Bailey voting aye. Board Member Dohrenwend was not present for the vote.

**Discussion Regarding Appointment of New Water Conservation and Drought Management Advisory Board Members:**

Board Vice Chair Lynch requested Southeast Utah Health Department Environmental Director Orion Rogers give a presentation at the next meeting about graywater. He also requested that Roslynn McCann speak at the next meeting about the graywater system she is using.

Board Member Duncan said the two interviewed candidates are very strong candidates. Board Vice Chair Hultquist said Getz and Tallman have the background necessary for this position and have a will to serve.

**Motion:** Board Chair Lynch moved to recommend to the City and to the Mayor to appoint Eve Tallman and Steve Getz as our two new Water Board Members. Board Member Duncan seconded the motion.

**Vote:** The motion passed 4-0 with Board Members Hultquist, Duncan, Lynch, and Bailey voting aye. Board Member Dohrenwend was not present for the vote.

**Adjournment:** Board Member Bailey inquired about a new water tank. Public Works Director Jones said it is on the capital improvement plan. Board Chair Lynch adjourned the meeting at 3:36 PM.

## WATER CONSERVATION PLAN REQUIREMENTS & INITIAL ASSIGNMENT IDEAS

	<b>City Staff</b>	<b>Water Board</b>
<b>System Profile</b>	X	
<b>Supply</b>	X	
<b>Water Measurements</b>	X	
<b>Billing</b>	X	
<b>Water Use</b>	X	
<b>Conservation Practices</b>		X
• <b>Water use reduction goal</b>		X
• <b>Implementation plan for each measure</b>		X
• <b>Current conservation BMPs</b>		X
• <b>Conservation public awareness practices implemented</b>		X
• <b>Education/training practices</b>		X
• <b>Incentives/rebate/rewards</b>		X
• <b>Ordinances &amp; standards</b>		X
• <b>Codes/requirements</b>		X
• <b>New development requirements</b>		X
• <b>New BMPs</b>		X

# OUTLINING CONSERVATION PRACTICES FOR INCLUSION IN WATER CONSERVATION PLAN

## A. TEMPLATE:

- ❖ Proposed policy/action/program
  - Description (the why)
  - Description of water savings to be achieved (if applicable/calculable)
  - Actions required to implement

## B. Policies to Develop/Study

- ❖ Auditing high-quantity users

## C. Planning/Studies

- ❖ Groundwater Management Plan
- ❖ Studies on aquifer health and water availability
- ❖ Water Shortage Contingency Plan

## D. Codes/Requirements

- ❖ Graywater code

## E. Ordinances/New Development Requirements

- ❖ Water Shortage Contingency Plan Ordinance
- ❖ Time-of-day/day-of-the-week Watering ordinances
- ❖ Landscaping ordinances
- ❖ Graywater Ordinance
- ❖ Green infrastructure ordinance

## F. Municipal Operations

- ❖ Leak monitoring and pipe replacement
- ❖ Green infrastructure development
- ❖ Audits of City water use

## G. Incentives/Rebates/Rewards

- ❖ Sprinkler check program
- ❖ Rainwater harvesting programs
- ❖ High-efficiency rebate programs
- ❖ Low flow retrofit programs

## H. Public Awareness/Education

- ❖ Public education campaigns
  - Irrigation best practices
  - Landscaping resources
- ❖ Valley-wide interagency conservation programming

Plan Development Schedule:



## **CONSERVATION ACTION: AUDIT OF CITY WATER SYSTEM & DEVELOPMENT OF A WATER LOSS CONTROL PROGRAM**

**Policy:** The City should conduct water usage audits of City facilities and the distribution system to determine more efficient water delivery options and develop a Water Loss Control Program. A Water Loss Control Program can help water systems meet challenges faced by aging infrastructure, water quantity and water quality concerns, and inadequate water resources. While it requires an investment in time and financial resources, management of water loss can be cost-effective if properly implemented. The time to recover the costs of water loss control is typically measured in days, weeks, and months rather than years. A water loss control program will also help protect public health through reduction in potential entry points for disease-causing pathogens.

A water loss control program helps to identify real losses of water from the water system and apparent losses, the water that is consumed but not accounted for. Real losses represent costs to a water system through the additional energy and chemical usage required to treat the lost water. Apparent losses represent a loss of revenue because the water is consumed but not accounted for and thus not billed. Once a water system identifies these real and apparent losses through a water loss control program, it can implement controls to reduce them. This can reduce the need for costly upgrades and expansions due to population growth and increased demand. By reducing the amount of water lost, the recovered water can be sold to consumers, generate revenue, and meet water demands. In some cases, this can reduce the need to find additional sources. Water loss control programs are often the most economical solution to increasing demand, especially in the short term.

**Water Savings to be Achieved:** Average water loss in systems is 16 percent, and up to 75 percent of that is recoverable.

**Action Items to Implement:** A Water Loss Control Program consists of three major steps:

- **Water audit:** A water audit identifies and quantifies the water uses and losses from a water system. It accounts for all of the water in a water system resulting in a quantified understanding of the integrity of the water system and its operation. It is the first step in formulating an economically sound plan to address water losses.
- **Intervention:** The intervention process addresses the findings of the water audit through implementation of controls to reduce or eliminate water losses.
- **Evaluation:** The evaluation step uses performance indicators to determine the success of the chosen intervention actions.

## **CONSERVATION ACTION: DEVELOPING A WATER SHORTAGE CONTINGENCY PLAN**

A Water Shortage Contingency Plan is a document describing how a water agency will respond to the various stages of a drought or a prolonged shortage caused by some other event. This Water Shortage Contingency Plan (WSCP) provides guidelines for Seattle Public Utilities (SPU) to manage water supply and demand in the event of a water shortage. The plan enables SPU to maintain essential public health and safety and minimize adverse impacts on economic activity, environmental resources and the region's water use preferences.

**Policy:**

**Water Savings to be Achieved:** Water savings will depend on which stages are implemented in response to the water shortage.

**Action Items to Implement:**

- Adoption of ordinance authorizing City Manager to develop a Water Shortage Contingency Plan.
- Public engagement for plan development.

- Staff develops plan for Water Conservation and Drought Advisory Committee review and City Council approval.

Rev - , 2/26/2021

M Duncan portion of 2021 Water Conservation Plan Update, using this outline

Proposed policy/action/program (i.e., groundwater management plan, or studies on aquifer health etc.)

- o Description (the why)

- o Description of water savings to be achieved (if applicable/calculable)

- o Actions required to implement

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Besides Moab City, several governmental entities share one valley, one mountain range and two very complex aquifers. Desert country first settled by Europeans in the mid-19<sup>th</sup> century, Spanish Valley with the La Sal mountains to the east looked like Heaven from a water point of view for the next 100 years. That changed in the mid-1950's with the uranium boom and 3000 people. It changed again for good with the creation of Arches and Canyonlands National Parks and its attendant outdoor activities. The area grew to 10,000 people and is presently growing at a 2-3% annual rate.

What looked like an inexhaustible water supply clearly isn't. Private rights holders, Moab City, Grand County, a non-profit irrigation company with senior rights to much of the valley's surface water, and the northern end of San Juan County, its so-called Spanish Valley portion – all of these, to various degrees share, cooperate and compete for both agricultural irrigation and domestic culinary water. There is wide-spread sentiment that the state has over-allocated water rights, particularly in the light of recent research and climate change projections. Recently the focus has changed from "Who has rights?" to "Are we at Safe Yield?" a relatively recent state prohibition against mining aquifers.

The state's Division of Water Rights is nearly finished conducting a three-year adjudication process, an effort to put unused water rights back in the public domain. More importantly, DWR has already started the process of establishing a Groundwater Management Plan (GWMP) for Spanish Valley, similar to existing GWMP's in other areas of the state.

The single most important question is Safe Yield of the Glen Canyon Group Aquifer which sources culinary water for the City, Grand County and San Juan County's Spanish Valley Special Service District. In the 1970's the total water budget including the GCGA and the Valley Fill Aquifer was about 20K acre-feet per year, as estimated by the USGS. In 2018 the USGS completed a more extensive set of field measurements and reduced its budget estimate to 11-13K acre-feet. In 2020, a Journal of Hydrology (pre-publication but peer-reviewed) article by one of the previous USGS authors using extensive geo-chemistry tracing and age-dating techniques estimated the annual GCGA recharge (from the "deep" portion of it) that sources culinary springs and wells) at less than 4000 acre-feet. This is an interesting number, since if it holds up to scientific scrutiny and usefully narrow error bounds, it is about what is being withdrawn from the GCGA now; that is we are at Safe Yield now, precluding further withdrawals. This would be game changer for both the area's residential and commercial growth and its conservation practices.

So far as conservation goes, there are a number of sentiments at play. Water is an emotional subject. People don't mind conserving as long as everybody else does. But residents like to blame hotels (who do relatively little landscaping) even though the single biggest use of pristine culinary water is residential landscaping. Why conserve, the argument goes, just so somebody down the road doesn't have to? And some people won't conserve until they simply can't get it any more.

From a governmental entity point of view, the objective is to make everybody conserve equitably. Besides conservation practices discussed elsewhere in this Plan, the City is in the process of re-instating overnight accommodations in commercial zones with more aggressive conservation requirements.

Finally, a recurring theme for reducing the use of culinary water for landscaping/irrigation is to expand a "secondary" water distribution system. Moab Irrigation System (MIC) already has two Mill Creek gravity-fed (i.e. not pressurized by pumps) surface water trunk lines running roughly east to west through town serving more than a hundred residents. Expansion is straightforward if expensive due to extensive surface infrastructure existing over lines at the surface. Since MIC has little water to spare (barring infrastructure improvements such as remote controlled diversions, tanks, pumps and timers), it has also been suggested that other sources of water be fed into this distribution system, for example Colorado River water to which Grand County owns modest rights.

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# Time-of-Day/Day of Week Watering Ordinance (DRAFT #1, 2-9-21)

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## City of Moab a Municipal Corporation

ORDINANCE NO. \_\_\_\_\_

AN ORDINANCE AMENDING THE MUNICIPAL CODE TO PROMOTE WATER USE EFFICIENCY IN AMENITY LANDSCAPE IRRIGATION.

### Section 1. Preamble

- A. WHEREAS, the City of Moab desires to promote efficient sprinkler irrigation practices for all lawns and landscapes; and
- B. WHEREAS, research has shown that sprinkler irrigating landscapes only during the hours of 6:00 p.m. to 10:00 a.m. significantly increases irrigation efficiency; and
- C. WHEREAS, management of water through more efficient use is in the public interest and enhances the community's economic, environmental, recreational and aesthetic resources; and
- D. WHEREAS, the City of Moab has the authority to adopt this ordinance pursuant to Utah Code Annotated 10-3-702, and hereby exercises its legislative powers in doing so;
- E. WHEREAS, it is the policy of the City of Moab to manage, conserve and protect the District's culinary water supply. Sprinkler irrigation practices, such as watering outside the hours of 6:00 p.m. to 10:00 a.m. and watering on multiple consecutive days, result in the unnecessary waste of the City's culinary water supply are prohibited.

### Section 2. Ordaining Clause

NOW THEREFORE, be it ordained by the City of Moab that the following ordinance be enacted.

### Section 3. Time-of-Day Watering Parameters

Sprinkler irrigation of all lawns and landscapes is prohibited between the hours of 10:00 a.m. and 6:00 p.m.

### Section 4. Applicability of Time-of-Day Watering Ordinance

The provisions of this ordinance shall apply to all landscapes within the city. This

ordinance does not apply in the following situations:

- a. New lawns that require frequent irrigation for establishment purposes within 90 days of planting.

- b. Short cycles required for testing, inspecting and maintaining irrigation systems.
- c. Other situations as permitted by the City.

**Section 5. Day of Week Watering Parameters**

- a. Consecutive day of the week sprinkler irrigation of lawns and landscaping using City of Moab culinary water is prohibited except as outlined in this Ordinance or with permission of the City.
- b. All public, residential, commercial or institutional properties with a street address ending in an odd number are only authorized for sprinkler irrigation of lawns and landscaping on Monday, Wednesday and Friday.
- c. All public, residential, commercial or institutional properties with a street address ending in an even number are only authorized for sprinkler irrigation of lawns and landscaping on Tuesday, Thursday and Saturday.
- d. All public, residential, commercial or institutional properties may water on Sunday.

**Section 6. Penalty/Enforcement**

- a. The City Manager is hereby vested with the authority to enforce the terms of this Ordinance and rules of enforcement set forth herein, either through the use of City personnel or otherwise.
- b. Any customer of the City who is discovered or reported to be utilizing the City's culinary water supply in violation of the watering regulations set forth in Section 1 (each, a "Violator"), shall, upon confirmation of the violation by District personnel, be subject to the following rules:
  - (1) For a first offense, the Violator shall be notified in person, by door hanger, by phone, or by mail, of the reported violation, and shall be instructed to thereafter conform with the Time-of-Day/Day of Week Watering Ordinance.
  - (2) For a second offense in the same calendar year, the Violator shall be served with a formal written citation and be required to pay a fine of \$50.00. The fine shall be due and payable as indicated in the Citation. Failure to pay the fine when due shall result in the termination of the Violator's culinary water service until the fine is paid in full. In the event of termination of culinary water service, a reconnection fee of \$100.00 shall also be paid as a condition to restoration of water service by the city.

**Section 7. Effective Date**

This ordinance shall be effective as of \_\_\_\_\_20\_\_\_\_.