



Water Conservation Plan Update 2021

City of Moab

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FOREWARD

Water is the lifeblood of Moab, as for all cities. Over a century ago the consistent flow of Mill Creek, fed by reliable snowfall in the La Sal Mountains, allowed the establishment of Moab as an agricultural community. Over the subsequent decades, changing land use, increased water consumption, multi-year droughts, the anticipated effects of climate change, and scientific study of Moab's aquifer has led to better understanding of the value, limitations of, and risks to Moab's water supply. While this Plan is driven in part by state requirements, ultimately it is a response to the City's responsibility to plan for the long-term well-being of its residents, businesses, customers, and ecosystem. To that end, it lays the groundwork to prepare for a future, that while it may be water constrained, still provides the many benefits that draw people to this desert oasis. We value our healthy urban forest, local food production at all scales, water in our creeks and wetlands, and attractive residential and commercial landscapes, and intend this plan to contribute to their preservation.

-Moab City Council, 2021

INTRODUCTION

The City of Moab 2021 Water Conservation Plan has been prepared to comply with the Utah Water Conservation Plan Act of 1998 amended in 2004 with HB71 Section 73-10-32. Statute requires that every Utah water conservancy district and water retailer adopt a Water Conservation Plan every five years and file the plan with the Utah Board of Water Resources. This 2021 Water Conservation Plan Update presents updated data for water supply and demand, trends, future growth and consumption projections, and proposes policies and actions to achieve regional conservation goals.

The Regional Water Conservation Goal for the “Upper Colorado River” area (Carbon, Emery, Grand, and San Juan Counties) is 20% by 2030, from an average of 333 gallons per capita per day (GPCD) to 267 GPCD. Moab is close to this goal and is currently at 278 GPCD according to 2020 population estimates. The 2020 Census data will be available in 2022, at which time, the City will have a more accurate resident number, and it is likely the actual GPCD will be lower.

The City proposes to meet and exceed the Regional Goal by setting a new baseline goal of 250 GPCD by 2030, with additional step-wise decreases in GPCD goals to 230GPCD based on State participation in conservation efforts. A goal of 230GPCD represents a 50% decrease in outdoor landscape irrigation and would result in the total volume of residential water use staying the same, while still accounting for the projected increase in population. State participation in water conservation efforts are crucial to the success of an aggressive goal. Both of these goals represent the values of the community and an effort to keep water use at a safe level to ensure a sustainable quality of life for the City of Moab and its environs.

To meet this goal, the City plans to implement a suite of water conservation measures including policies, outreach, infrastructure improvements, and water resource management planning. Proposed policies include regulating landscapes and turfgrass for new development, water wise development standards, and re-landscape incentives. Outreach and education for current residents as well as making technical resources and expertise available are a key component of meeting the City’s goal. The City has committed to system upgrades which will be completed over the next five years and have the potential to reduce loss and improve efficiency, as well as development of a new source (well). In addition, the City is embarking on a water resource management planning effort in coordination with other local water providers who share the groundwater supply, to make smart decisions now and prevent shortages in the future. Underpinning all these efforts is on-going research by state, local, and federal agencies to improve data accuracy and forecasting.

Data for this plan comes from ongoing studies by the Utah Division of Water Rights (UDWRi), the United States Geological Survey (USGS) and the Utah Geological Survey (UGS) as well as the City and neighboring water users, Grand Water and Sewer Service Agency (GWSSA), and Moab Irrigation Company (MIC). Population data was derived from the 2010 US Census and Census.gov estimates.

SECTION 1: SYSTEM PROFILE

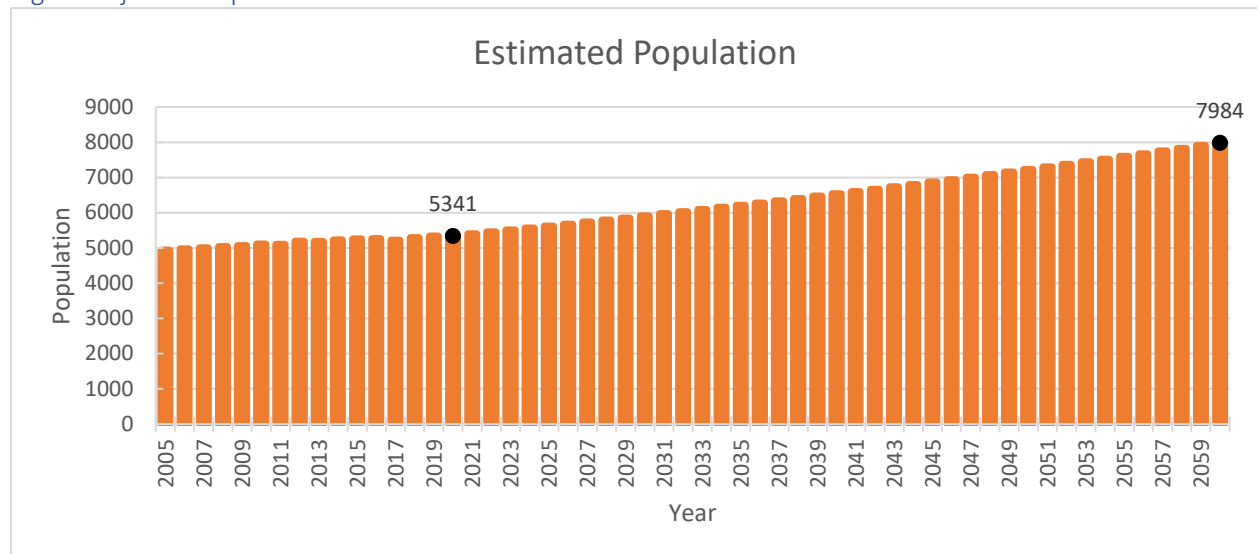
1.1 History, Government and Population

The City of Moab was incorporated in 1902 and is the largest city in Grand County. The City of Moab has a Council-Manager form of government, with five elected Council members, a separately elected Mayor, and an appointed City Manager.

The semi-arid climate of Moab is characterized by hot summers and cold winters, with 9.5 inches of precipitation per year. Moab has been known for ranching and agriculture, uranium mining, film production and tourism over the decades. The area serves as a gateway to Arches and Canyonlands National Parks, Bears Ears National Monument, the Colorado and Green Rivers and the La Sal Mountains. It is home to world-renowned mountain biking, hiking and 4x4 trails, and the area hosts more than 2 million visitors each year. Two creeks flow from the La Sal mountains through town and into the Matheson Wetlands before draining into the Colorado River, providing important habitat for birds and wildlife, and a respite from the heat for humans alike. Dramatic upticks in visitation in the past decade have resulted in explosive development of tourist amenities such as overnight accommodations. This transient population makes water planning more complicated and can be a point of contention for those concerned that our GPCD does not differentiate between visitors and residents, resulting in each resident being “responsible” for some portion of the tourism impact. Please see Section 6, Water Conservation, for more details.

The resident population of the City has slowly grown over the past ten years, with an average estimated growth rate of 1.01% / year. Current resident population is estimated at 5,341 using this assumed growth rate and will be updated with the 2020 Census data available in 2022. The greater Spanish Valley area, including northern San Juan County, sits at around 10,000 people, including the City of Moab. This is the most useful population number for long-term water resource management planning, as these are the total users of the water supply. Moab City alone could see an increase of approximately 2,500 people in the next 40 years, if the average growth rate stays the same.

Fig 1. Projected Population Growth



However, build-out projections are complex, and have many different scenarios based on current zoning, potential zone changes, types of uses, and possible future regulations such as water availability. 2020 Census data may be higher than the previous growth rates, and post-COVID-19, Moab seems to have undergone a boom in popularity if the housing market is any indication of current residential demand.

There are currently 240 undeveloped properties within City limits, representing 725 buildable acres (there are 1116 vacant acres, but the remaining 391 acres are unbuildable due to natural hazards). Approximately 30% of these are zoned for commercial uses. The lowest end of the build-out scenario is one single-family dwelling on each residentially zoned property and non-residential uses on the others, which adds only about 223 people (using an average of three people / household) to the projected population. The build-out number gets much higher assuming each property uses their total density allowance, and higher still if any are rezoned to zones allowing more density than currently permitted. With a medium scenario, where every vacant residential property is subdivided and developed to the maximum density allowed by current zone (excluding multi-family options), then there are 3,000 new units built, and approximately 9,000 more people.

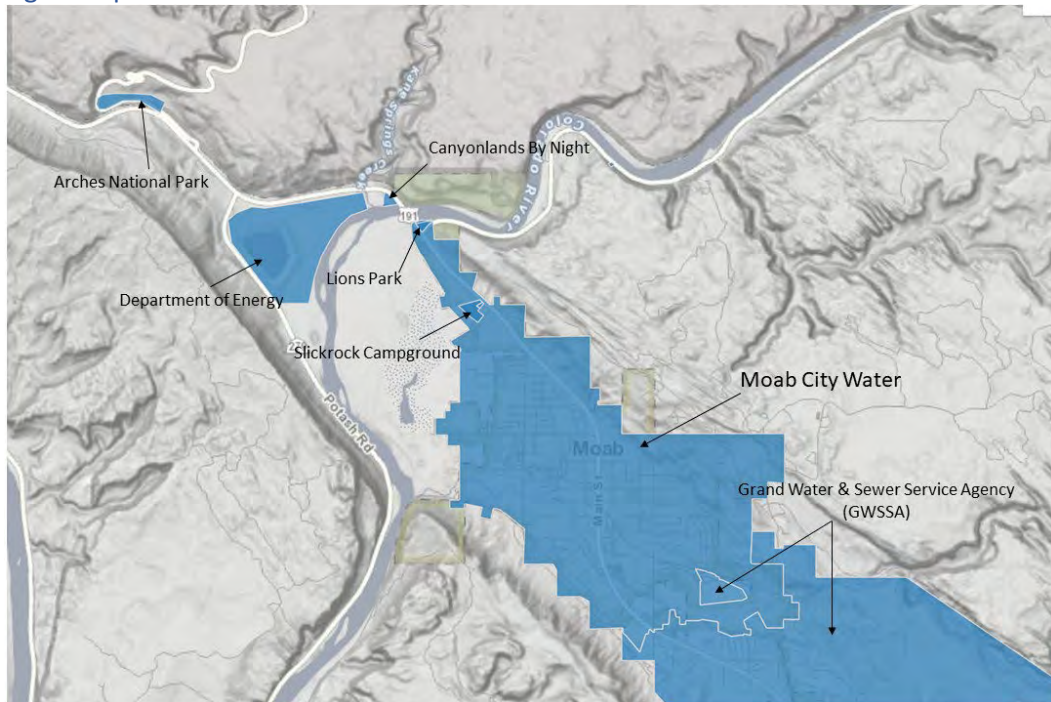
The City is currently looking into these various scenarios to develop smart land use policy based on limited resources and community desires. The matter is complicated further by the addition of other water users outside City limits who share the aquifer – residents of both Grand County and San Juan County. Acknowledging this reality is the inspiration behind the initiation of the Moab Spanish Valley Water Providers Coalition, a water resource management planning group which convened for the first time in 2021.

It is impossible to address the population of Moab without representing tourism. Though the City only has around 5,000 permanent residents, the area (including Spanish Valley) sees more than two million visitors per year, many of who stay at least one night in the many overnight accommodations available in both City limits and Grand County.

1.1 Water governance structure

The City of Moab is the sole provider of culinary water to all City residents and businesses. The Moab Irrigation Company provides some irrigation water to its members in town, and Grand Water and Sewer Service Agency serves residents outside of City limits. There are a few exceptions such as the new Utah State University campus which will be within the City but served by GWSSA. City of Moab water is supplied, delivered, and billed by City staff within the Public Works, Engineering, and Treasurer's departments.

Fig. 2 Map of Current Service Area



1.2 Water Distribution System

The Moab City culinary water system is fed by six sources: two wells and four springs. One additional well is currently being developed and should be on-line in 2022. Source water is stored in three tanks with a total capacity of 3.0 MG, with one additional tank scheduled for construction in the next several years. Approximately 52 miles of pipes, ranging in size from 4 to 21 inches in diameter, distribute water from the storage tanks throughout the City's service area.

The City's water delivery network comprises three pressure zones. The three zones are referred to as the Lower, Middle, and Upper Zones, with the names corresponding to the relative elevations served by each pressure zone. In general, the topography in Moab slopes toward the Colorado River. Therefore, the Lower Zone is on the northwest side of the City, closest to the Colorado River, with the progressively higher Middle and Upper Zones located to the southeast. These zones are separated with pressure reducing valves (PRVs). Due to PRV interconnections between pressure zones, excess storage located in higher zones can be applied to zones that are low. See Section 2 for volume and supply information.

Table 1. Number and Type of Connections in 2020

Type of Connection	Number in 2020
Residential	1,773
Commercial	430
Institutional	60
TOTAL	2,263

The City's water system operates as an Enterprise Fund in which fees are charged to users of the system to pay for the costs. The Water Fund revenue sources consists of water base and usage fees from residential and commercial customers, bulk water sales, water impact fees, and proceeds from debt service secured by water rates. In April of 2021 the water revenue was used to secure a bond to enable the City to complete a backlog of necessary water related projects in the next five years, including developing a new well, Well #12. These projects also include water line improvements along Mill Creek Drive, a new two-million-gallon storage tank on Spanish Valley Drive, and various optimization projects on existing facilities. The Water Department keeps up on leak and loss maintenance regularly (see Section 4).

1.3 Wastewater Treatment System

The new Wastewater Reclamation Facility was built and became operational in 2019, saving the City 200,000 gallons of water per month, on average. There is an opportunity to upgrade the treatment system so that water flowing through the plant could be discharged into the Matheson Wetlands and re-used once again before joining the Colorado. As water management between providers in the Valley and ecological concerns are brought to the table, this may become a path the City chooses to take.

SECTION 2: SUPPLY

2.1 Sources – Aquifers, Surface Water, and Water Rights

2.1.1 History

The Spanish Valley has been intermittently occupied for thousands of years by indigenous people. They used the springs and surface water coming from the La Sals to support both hunter/gatherer and early agricultural communities. White colonizers arrived to the area around the late 19th century, and began the settlement known as Moab today. It appeared that there was plenty of water to support their sedentary community, largely agricultural and mining, at first. That changed in the mid-1950s with the uranium boom and a sudden influx of people. Moab and Spanish Valley grew to about 3000 people at that point, and then it changed again for good with the creation of Arches and Canyonlands National Parks, and the outdoor recreation economy. The County has since grown to 10,000 permanent residents and shows no signs of slowing.

Besides Moab City, several water providing entities share one valley, one mountain range and two very complex aquifers, and are facing a finite water supply. Private rights holders, Moab City, Grand County, Moab Irrigation Company (a non-profit irrigation company with senior rights to much of the valley's surface water), and the northern end of San Juan County all share, cooperate, and compete for both agricultural irrigation supply 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. After this process is

completed, the paper water rights should match wet water a little better, though the over-allocation issues remain.

The Water Conservation and Drought Management Board was created after the adoption of the 2016 Water Conservation Plan and has worked to address some of the issues facing the Valley in the intervening years. With the publication of several research efforts and the extreme drought declaration during 2021, water has come more to the forefront of public conversation. There is more community urgency to increase efforts to integrate conservation practices and initiate cooperative long-range planning. It is no longer time to pretend we are separate – the water flows underground and is used by all. Hopefully, with a constructive process and good leadership, there will be an agreement reached regarding a number for “safe yield,” whether that is a number codified by the State Engineer or a number that the water providers agree on remains to be seen. With current science limited by available data, and study conclusions still presenting a wide range of available water, it seems prudent to wholeheartedly embrace the precautionary principle and make conservative estimates now to preserve water supply for an uncertain future.

2.1.2 Aquifer and surface water descriptions and maps

During the last several years the City, GWSSA and several other concerned entities funded a USGS study to help better understand the aquifers in our area. The City of Moab also hired a consulting firm, Hydrologic Systems Analysis, LLC, to further understand this very complex system. The study is available by request at the City.

Due to the complexity of the aquifers fed by snowmelt from the La Sal Mountains there is not complete agreement on exactly how the system functions, and there is still a wide range in the estimates of how much water is in the aquifer and what the recharge rate is. This discussion is ongoing in the community and will be a part of groundwater management planning efforts.

In the 1970’s the total water budget including the Glen Canyon Group aquifer (GCGA) and the valley fill aquifer was about 20,000 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 11,000-13,000 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 (deep portion) at less than 4000 acre-feet. This is the current culinary water source for the City. If this number holds up to scientific scrutiny and usefully narrow error bounds, it is approximately what is being withdrawn from the GCGA to serve current demand. This would have significant ramifications for both land use planning and conservation practices.

The complexity of our sub-surface aquifer not only makes quantifying available water difficult, but it also means our water supply is relatively invisible to residents and visitors alike. Conservation of a resource that may only be understood to be gone when wells run dry creates a challenging conservation planning atmosphere. The City of Moab and others in the community can lead the conversation about understanding our water system, how we are working to ensure the security of our water supply, and how every resident can help through water conservation.

Table 2. SUPPLY CATEGORIZED BY TYPE of SOURCE

	5-yr average	2016 (2,388 AF)	2017 (2,540 AF)	2018 (2,478 AF)	2019 (2,264 AF)	2020 (2,218 AF)
Springs	1,444.01	1,386.32	1,506.30	1,439.42	1,265.64	1,321.94
Wells	1,024.47	1,001.18	1,033.48	1,038.74	997.86	896.44

2.2 Secondary Water (Irrigation Sources)

2.2.1 Moab Irrigation Company

Moab Irrigation Company (MIC) is a non-profit organization founded circa 1890 which has senior water rights to almost all the water in the Mill Creek drainage, including North Fork, which is usually around 6,000 acre-feet per year. Headwaters of both branches of Mill Creek are high on the west side of the La Sal mountains. Mill Creek is the principal drainage supplying water to Spanish Valley.

There are three diversions in the upper reaches of Mill Creek that supply water to three ditches – Wilson Mesa, South Mesa, and Horse Creek – for agricultural and irrigation uses. There is another large diversion, discussed below, supplying water through Sheley Tunnel to Ken’s Lake, which is a reservoir supplying irrigation water to upper valley users.

There are three more diversions on Mill Creek below its confluence with North Fork. The two lower dams are near each other and not far from the intersection of Mill Creek Drive and Powerhouse Lane. The uppermost dam of this group supplies mostly small farms on the southeast edge of the city. The remaining two dams supply two "ditches" (long since replaced by closed plastic piping) that stretch from east to west across Moab City. The users on these ditches are more than a hundred of mostly urban landscapers who enjoy relatively inexpensive irrigation water compared to what it would cost to irrigate with City culinary water. Delivery takes advantage of the steady downhill grade to the west to hydrostatically pressurize the pipelines; no pumps are used. The majority of these users flood irrigate their properties.

Since 1980, all flow (except a BLM required 3 cfs minimum in-stream flow) in Mill Creek is diverted by Grand Water and Sewer Service Agency (GWSSA) into Ken's Lake where it is used for irrigation in the upper valley. *[A hydrologist employed to study the City’s culinary water supply asserts that this reduced (since 1980) stream flow has detrimentally reduced the city’s production from its springs and wells at the golf course as well as Skakel Springs farther north along a NW trending Kayenta fault line.]* MIC charges GWSSA for this diverted water, and in turn if MIC wishes to augment its city pipelines in late summer (a common occurrence in recent frequent drought years) when Mill Creek flow is low, GWSSA charges MIC for water pumped from valley fill aquifer wells in the same geographic area as MIC diversions. Ken's Lake also owns many MIC shares, for which it pays an assessment fee like any other MIC shareholder.

In summer, MIC frequently takes all Mill Creek flow at its two lower dams to serve its users, leaving Mill Creek almost dry, particularly in the daytime when more people are watering than they do at night. Water does seep back into the creek below the lower dam so that by the time Mill Creek crosses Main Street (Hwy 191) there is some flow back in the creek bed. The

aesthetics and ecological amenity of leaving some modest flow, ideally even in drought years, in the creek all the way through town is desirable, but there's not enough water to serve MIC customers and leave some in the creek unless water distribution can be made more efficient. Doing so is certainly possible, but it requires considerable upgrade to both MIC and user systems with technologies such as pumps, timers, tanks, automated diversion dams and automated valves. Surface water is messy to handle, involving foreign material such as sand, limbs, leaves and beavers, making the situation more complicated.

Similarly, the idea surfaces periodically of using MIC water, its pipelines, or at the least its right-of-way through town to grow a secondary municipal water system. This is possible, but likely means converting MIC from a non-pressurized to a pressurized, metered system, which is not currently in City or MIC budgets.

2.2.2 The Colorado River

Another potential secondary irrigation system is surface water out of the Colorado River. The City of Moab has the opportunity to conserve culinary water and add non-potable supply for outdoor irrigation needs by converting some of the groundwater rights to surface water from the Colorado. Developing this system would cost many millions of dollars and take years of planning and infrastructure installment and is not within the scope of City capital improvement projects at the moment. However, to further conserve culinary water supplies, this development could be well warranted in the future.

2.3 Water Rights

The City of Moab holds 8,795AF in water rights currently, the vast majority of which are groundwater rights.

SECTION 3: WATER MEASUREMENT

3.1 Water Measurement Methods and Practices

Moab city uses Neptune R900i T-10-gal water meters. All water source production meters are read daily for data collection and all customer-based meters are read at the beginning of each month for billing. Malfunctioning meters are tested and replaced immediately as they are discovered. If a meter is suspected of reading inaccurately it is removed and tested prior to replacement or repair.

Rough estimates on meter size deviance range are $\frac{5}{8}$ "- 90%, 1" 2-4%, 2" 2-4%, 3" 1-2%, 4" 1% and 6" less than 1%. Enough meters are kept on hand to keep up with replacements and cold winters. In 2014-15 an exceptionally cold winter, with average temps below 0 at night and single digits during the day for 3-4 weeks, resulted in replacement of roughly 175 frozen meters and 24 frozen service lines that need thawing and / or replacing. In 2020 only two frozen meters needed replacement and there were no frozen service lines. We expect winters to continue to warm, though slowly.

Connection and impact fees are assessed for each new connection based on the size of connection and its usage classification. New developments and meter sizes are engineered according to ERC's (Equivalent Residential Connection).

All water measurements are reported to the State DWR as required.

SECTION 4: SYSTEM WATER LOSS

4.1 Water Loss

There was approximately 550 acre-feet of water, or about 20%, lost between production and metered connections in 2020, which is typical for recent years. The City engineering and public works team attributes this loss to four possible causes:

1. Dispersed Leaks: individual leaks may be too small to be noticed but taken together could have a significant effect. Water lines are in various types of soils, some of which may be able to absorb a slow leak for a long time without evidence showing.
2. Water Line Breaks: these are repaired quickly, but large amounts of water can be lost during the leaking period.
3. Unmetered Connections: there may be older connections that are yet unmetered.
4. Fire Hydrant Exercise: Public Works exercises fire hydrants on a schedule, and the water expelled is not metered.

4.2 Leak Detection and Repair

Moab City has four full time Water Department personnel directly supervised by the Public Works Director. They work around the clock to provide safe drinking water for the City of Moab. They monitor and perform regular maintenance on the water production and treatment process daily and make necessary repairs immediately. They have a Supervisory Control and Data Acquisition (SCADA) system that monitors and controls various parts of the water system remotely from a desktop computer or a phone app with full control of all the pumps in the system. This means they can see intrusion alarms and all the tank levels in real time.

The Water Department takes leaks seriously and responds immediately to all identified issues, making a conscious effort to lose the least amount of water possible during repairs. Staff are always on high alert and inspecting the water system for leaks and have personnel on-call 24/7 through local dispatch through the Sheriff's office or by the on-call number (435)210-1982. The City Water Department responded to 35 water leaks in 2020 and completed repairs on eight water mains and 22 service lines.

The Treasurer's Office and Water Departments work closely together on water conservation. The Water Department reads all water meters, most of which are digitally broadcast, and reports those readings to the Treasurer's Office monthly. The Treasurer's Office identifies high usages through their billing software which creates a re-read list. The Water Department will then verify the unusually high readings on the ground and report the conditions back to the Treasurer's Office. If there is evidence of a water leak the homeowner is notified immediately and work begins on a solution. When the leak is properly fixed, the homeowner can request a rebate on the amount of their water bill caused by the leak. This is intended as an incentive to fix leaks and not simply let them run, although, that has happened in the past, and it may be time to add a penalty for those who do not choose to fix their leaks.

In addition, the Water Department works to educate customers on ways to conserve water. From irrigation watering schedules to overflowing swamp coolers and leaking faucets, they help customers identify high usage areas and come up with solutions.

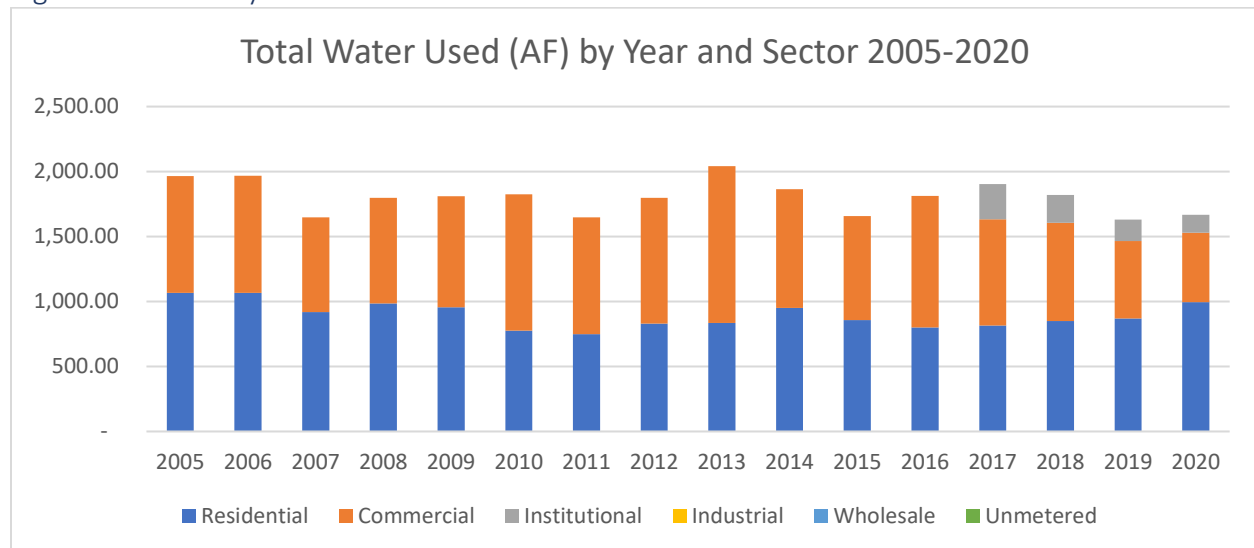
To maintain water quality the Water Department cleans and inspects water storage facilities every five years. They flush low-flow and dead-end lines on a regular basis and upon restoring water after an outage, they flush water mains until free of sand. There is sediment that flows naturally from the springs and settles in main lines due to aging infrastructure. New infrastructure additions strictly follow American Water Works Association (AWWA) water standards. From installation and pressure testing to treatment and sampling all applicable standards are consistently followed to maintain water quality.

SECTION 5: WATER USE

5.1 Water Use

Total water used from 2005 – 2020 has decreased. In recent years, the proportion of water going to commercial uses has begun to decrease in comparison to residential use as well, as the City becomes more built-out and residentially focused, and commercial and agricultural uses move out into Spanish Valley. The City has set the goal of a 50% reduction in outdoor landscape irrigation by 2030 to effectively keep residential draw the same as it is today, regardless of the projected increase in population. This goal will not be met without financial support from the State of Utah.

Fig. 3 Water Use by Sector and Year



The City of Moab only began keeping records on non-potable water production and use in 2017. There are only three connections that are considered non-potable water used for irrigation. Well #7 is used exclusively by the Golf Course for spring irrigation to make up for shortfalls when their usual water source (GWSSA) does not have enough supply. They use varying levels per year depending on available surface water. The City Center well is exclusively used for irrigation of City facilities near City Hall, and McConkie spring is a diversion near Old City Park used for irrigation there.

Table 3. Potable vs. Non-Potable Water Use (AF)

SOURCE	2020	2019	2018	2017
City Center Well	1.35	N/A	N/A	N/A
McConkie Spring (Irrigation)	120.00	120.00	120.00	152.03
Well #7 Golf Course (Irrigation)	8.43	18.00	182.70	41.06
Total Per Year	129.78	138.00	302.70	193.09

5.1.1 Water Use – Permanent Residents

Total water use has been trending downwards in the past 15 years, even as population has risen. This is due to shifting uses from commercial and mining towards residential, conversion of agricultural land to residential use, replacement of the old wastewater treatment facility, and likely some water conservation awareness as well. In 2005 the total water used was 1,965 acre-feet and in 2020 the total was 1,667 acre-feet. *The City of Moab aims to keep total water use at or around the current level into 2030, regardless of population growth, assuming support from the State.*

Fig. 4 Population vs Water Use

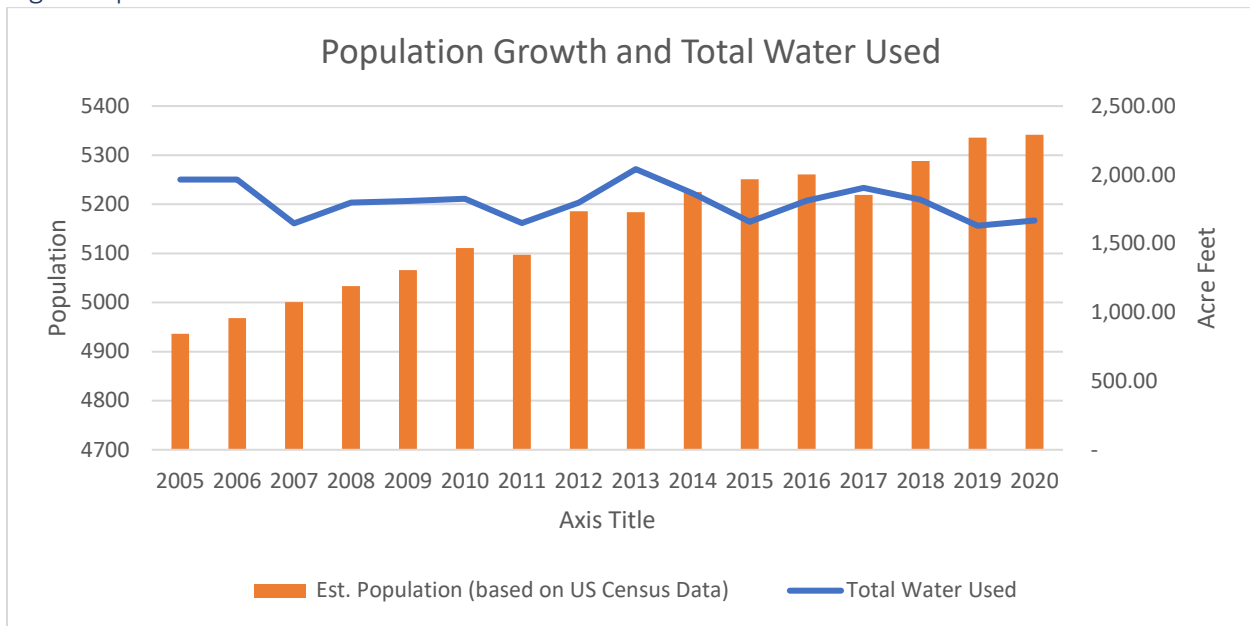


Fig. 5 Gallons per Capita per Day by Type

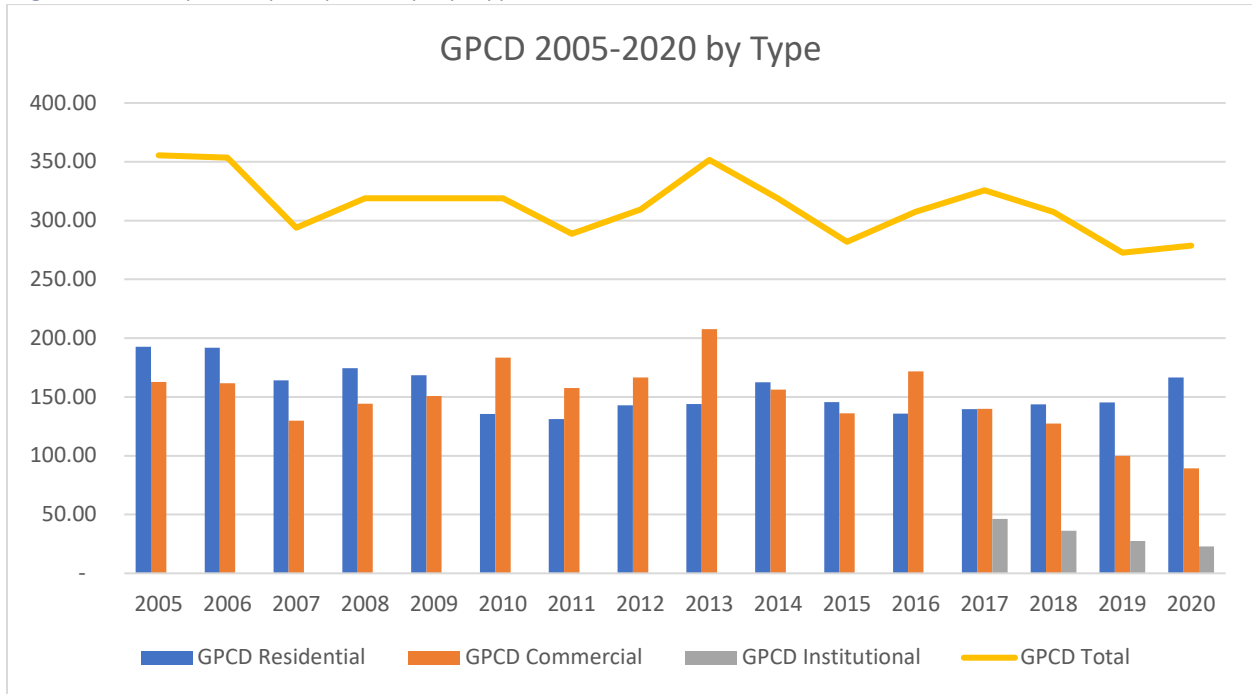


Table 4. Gallons per Capita per Day 2005 - 2020

Year	Population	GPCD Residential	GPCD Commercial	GPCD Institutional	GPCD Total
2005	4936	192.76	162.72	-	355.48
2006	4968	191.78	161.60	-	353.38
2007	5001	164.18	129.78	-	293.96
2008	5,033	174.56	144.34	-	318.89
2009	5,066	168.42	150.65	-	319.06
2010	5,111	135.46	183.40	-	318.87
2011	5,097	131.05	157.60	-	288.64
2012	5,186	142.79	166.56	-	309.35
2013	5,184	143.89	207.67	-	351.56
2014	5,225	162.38	156.24	-	318.62
2015	5,251	145.69	136.18	-	281.88
2016	5,261	135.68	171.73	-	307.41
2017	5,219	139.50	139.97	46.21	325.69
2018	5,288	143.66	127.38	36.12	307.17
2019	5,336	145.33	99.91	27.43	272.67
2020	5,341	166.47	89.23	22.97	278.67

5.1.2 Water Use – Visitors

No discussion of water use in Moab would be complete without addressing the impact of our many visitors. Currently, overnight accommodations account for approximately 16% of the commercial water used. In 2019 (a more typical year than 2020), this was a total of 95AF. Of course, this does not include the proportional use of visitors at businesses which serve mostly tourists such as restaurants and the car wash. This proportional use would be difficult to accurately account for unless individual surveys were taken at each establishment – an effort no one is currently undertaking. Regardless, as visitors increase, we can expect their water usage to increase concurrently unless more conservation measures are implemented at overnight accommodations. Outreach efforts are part of the five-year conservation plan.

5.2 Water Production and Projections

Table 5 Water Produced by Source / Year

Water Source Data (AF)						
	5-yr average	2016 (2,388 AF)	2017 (2,540 AF)	2018 (2,478 AF)	2019 (2,264 AF)	2020 (2,218 AF)
Birch Springs 1,2,3 (WS003)	535.82	515.78	551.85	539.83	503.63	468.42
Sommerville Springs Nos. 1 & 2 (WS001,2)	535.79	518.19	572.11	517.06	472.09	469.22
Well No. 10 (WS010)	529.13	533.68	565.79	487.91	521.26	409.36
Well No. 6 (WS007)	415.20	450.83	426.63	368.13	458.60	478.65
Skakel Springs (WS012)	241.73	232.35	230.31	262.53	169.92	264.30
McConkie Spring (Irrigation, estimated)	130.68	120.00	152.03	120.00	120.00	120.00
Well #7 Golf Course (Irrigation)	80.14	16.67	41.06	182.70	18.00	8.43
Total Per Year	2,468.48	2,387.50	2,539.78	2,478.16	2,263.50	2,218.38

Fig. 6 Water Production Trends by Source

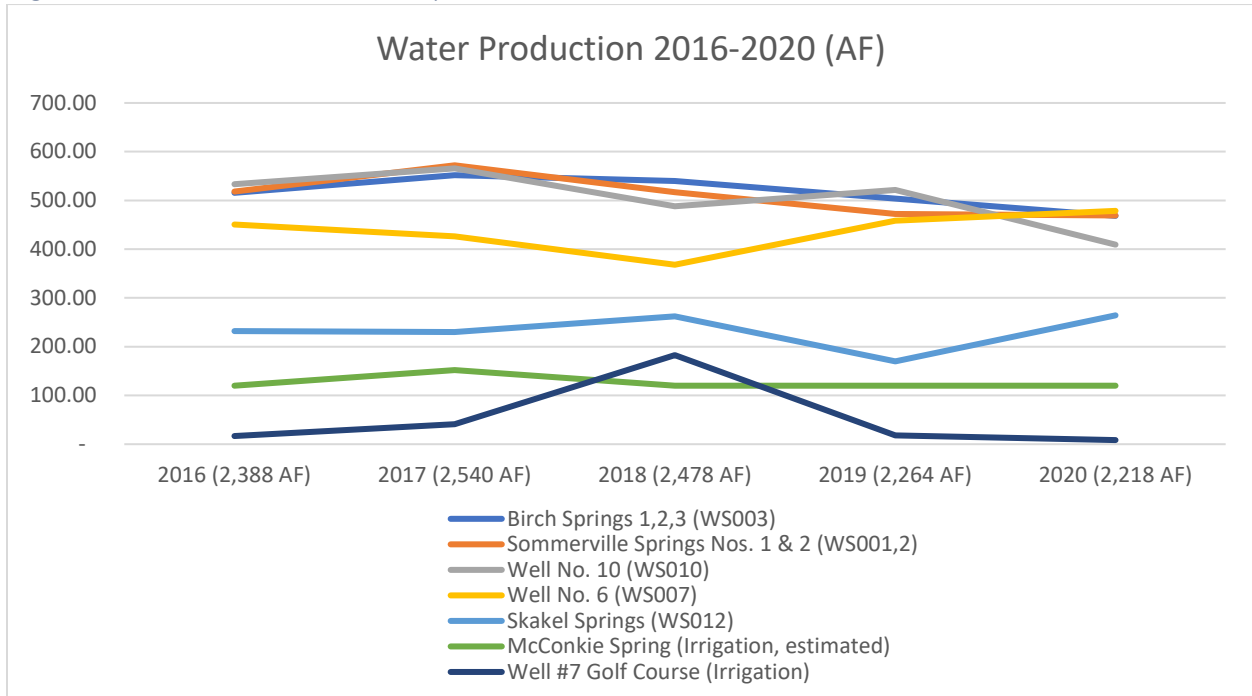


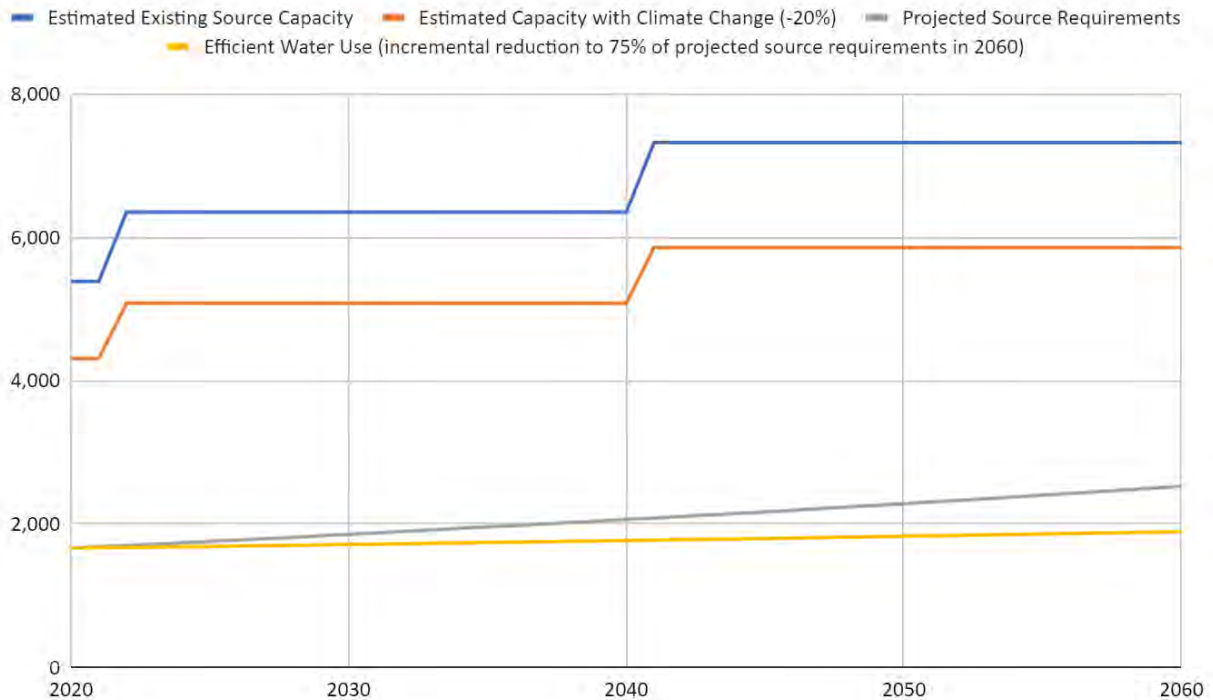
Table 6 – Source Capacity & Future Projections

Future Projections (AF)	
Existing Source Capacity*	5,387.00
Anticipated Source Capacity**	7,323.00
Estimated Water Use 2060	2,532.00
Efficient Use (2060 Water Use reduced 25%)	1,899.00

*Source capacity reported here is based on pump capacity and draw-down tests, *not* on estimates of actual aquifer capacity, which disagree. Therefore, reported source capacity numbers are not in any way representative of a safe-yield number.

Climate Change is anticipated to reduce water supply by approximately 20%, making this number only **5,858AF

Fig. 7 Future Projections (AF)



Under existing conditions, the City has an estimated surplus capacity of 19 gpm during peak day conditions with all sources in operation. However, for the City to have source redundancy such that no single drinking water source is indispensable, about 1,500 gpm of additional source capacity is needed. One potential option for the City to make up a portion of that deficit would be to use Well 7, or another City owned well that is not currently in service within the drinking water system. For one of these wells to be a viable drinking water source, Moab will need to ensure that the well meets all state requirements. In addition, as water from Well 7 is currently sold to the Moab Golf Club, the City should verify that any agreements with the Golf Club would allow the City to divert the water into the drinking water system under an emergency scenario. With a capacity of 350 gpm, Well 7 is not sufficient to provide full redundancy in the event of a loss of operation at Well 6.

As an additional option, the City could consider working with Grand Water and Sewer Service Agency (GWSSA) to explore the feasibility of adding an interagency connection between the Moab and GWSSA drinking water systems. Depending on the capacity of the connection, it could potentially serve all or part of the needed redundancy. An interagency connection has the potential to aid both parties in supplying quality water to their respective customers. As another option, the City could also develop an additional water source. For planning purposes, it has been assumed that the City will construct a new well for source redundancy.

Under 2060 conditions, a source deficiency of 1,930 gpm of instantaneous peak day demand is projected if no new sources are developed, though total demand remains below current estimate capacity. To address this projected peak day deficiency, it is recommended that the

City develop an additional 1,930 gpm of source capacity. This is in addition to the capacity needed for existing system redundancy. It is not expected that the City will need to add all this capacity in the immediate future. Instead, the City should periodically evaluate their source capacity and system demand and add capacity as needed. The City's Water Master Plan (available at <http://moabcity.org/576/Water-Conservation>) assumed that this future deficiency will be met through the construction of two new wells, one of which will be on-line in 2022. Developing the new Well #12 will cost approximately \$2.39 million dollars, which has been bonded for by the City. The other well should be constructed in the future once it is needed to support growth.

The City acknowledges that the impacts of climate change will likely result in a 20% reduction of overall water supply in the aquifer, though at an undetermined rate of change. If this is applied to our anticipated pump capacity in 2060 (including the two new wells), that will mean 5,858AF is available. Both of our demand scenarios show less than this number, however, the essential caveat is that our source capacity estimates are based on *pump capacity and drawdown tests* and in no way represent a consensus on *actual aquifer capacity*. Therefore more data is needed and a conservative approach to water allocation is essential until a better picture of underground supply can be achieved.

5.3 Billing

In 2020 the City adopted a stronger tiered water rate structure to encourage conservation, particularly for commercial properties. The hope is that it will encourage conservation and more awareness of water use. See below for the current rates.

Residential, within the City	\$13.00 minimum charge (includes the first 3,000 gal.)
	\$1.13/thousand for 3,001 to 10,000 gal.
	\$1.50/thousand for 10,001 to 60,000 gal.
	\$1.88/thousand for 60,001 or more gal.
Residential, outside the City	\$18.85 minimum charge (includes the first 3,000 gal.)
	\$1.50/thousand for 3,001 to 10,000 gal.
	\$2.25/thousand for 10,001 to 60,000 gal.
	\$2.63/thousand for 60,001 or more gal.
Commercial, within the City	\$37.50 minimum charge (includes the first 2,000 gal.)
	\$1.50/thousand for 2,001 to 5,000 gal.
	\$2.25/thousand for 5,001 to 10,000 gal.
	\$3.40/thousand for 10,001 to 50,000 gal.
	\$4.25/thousand for 50,001 or more gal.
Commercial, outside the City	\$44.25 minimum charge (includes the first 2,000 gal.)
	\$3.00/thousand for 2,001 to 5,000 gal.
	\$3.38/thousand for 5,001 to 10,000 gal.
	\$4.25/thousand for 10,001 to 50,000 gal.
	\$4.68/thousand for 50,001 or more gal.

Shop Water Retail Fee (City Public Works Yard)	\$32.50 for first 2,000 gallons, \$12.75/1,000 gal.
Shop Water Government Fee (City Public Works Yard)	\$26.00 for first 2,000 gallons, \$9.38/1,000 gal.
Construction Fire Hydrant Fee	\$32.50 for first 2,000 gallons, \$12.75/1,000 gal.
Construction Fire Hydrant Rental Fee	\$15 per day
City Parks & Cemeteries	\$0.81/1,000 gal.
Moab Golf Course Well #7	Current Commercial Rate
Water turn-on fee, after failure to pay City water/sewer charges	\$25.00 during normal working hours; \$50.00 after normal working hours
Water meter re-read charges	
The City crew will re-read the customer's meter.	\$10.00
The City crew will test a customer's meter.	\$20.00
The City crew will change a tested customer's meter, at the customer's request.	Actual labor costs with a one hour minimum
The costs incurred for these requests will be paid within thirty days. If that bill is not paid, the water will be turned off until the debt is satisfied, and a reconnect charge (1/2 hour minimum) during regular hours or reconnect charge (2 hour minimum) after hours, will be applicable.	During regular working hours, actual labor costs with a ½ hour minimum
	after hours, actual labor costs with a 2-hour minimum
If the problem proves to be the city's responsibility, there will be no charge to the customer.	

There is a space on mailed paper City bills for a small message, which can be anything from information about the new rates to conservation messages. Currently, the City is sending out the Sustainability website address as a place for water conservation tips and resources. There is current information maintained on that site as well as links to other water conservation resources and programs. Integrating these conservation messages onto e-bills will also be explored. In the future, the City is contemplating a re-designed water bill to include conservation goals and measurements aimed at such.

SECTION 6: WATER CONSERVATION

6.1 Introduction

The City of Moab will pursue a nuanced approach to conservation. The multi-pronged approach described in this Water Conservation Plan is comprised of policies, infrastructure improvements, investment in technologies and incentive programs, outreach and education, coordinated resource management, and on-going research and data refinement.

The ultimate goal is to better define and achieve conservation as a term and set of practices which become embedded in the community ethos and carry forward to a sustainable future.

6.2a Water Use Reduction Goal

In 2000, Governor Levitt proclaimed a conservation goal of 25% in GPCD by 2050 using 2000 water use as the indexing year. The conservation proclamation was aimed at municipal and industrial (M&I) users, agriculture was intentionally omitted from the goal. A few years later Governor Herbert decreased the timeline and proclaimed a conservation goal of 25% by 2025 using the same year, 2000, as the indexing year. The goals were not intended to reduce the total demand for M&I water, they were established to make room for new growth because a fair number of regions were reaching the limit of their water resources.

Since then, the Utah Legislature conducted a 2015 Legislative Audit, followed by a 2017 Follow-up Audit, then a Third-Party Review, and finally a 2017 Recommended State Water Strategy. Those efforts recommended the State develop regional water conservation goals. The Utah Division of Water Resources (UDWRi) was tasked with the project and developed the latest goals in their document [Utah's Regional M&I Water Conservation Goals](#). Grand County was put in the "Upper Colorado Region" which also includes Carbon, Emery and San Juan County.

The draft recommendations were for the Upper Colorado Region to reduce their per-capita water consumption by another 17% and the final recommendations were for 20% reduction from average regional 2015 usage (333 GPCD) by 2030. The 20% reduction for the region resulted in a recommended goal of 267 GPCD. *Moab is currently at 278 GPCD and has set a new goal of 230 GPCD by 2030.* The table below shows the percent reduction from the year 2000 as per the original call from Governor Levitt, which Moab would meet with the 267 GPCD regional goal and exceed with a new goal of 230 GPCD. The City will assess progress towards this goal annually when data is reported to the Division of Water Rights.

6.2b Water Use Reduction Challenge Goals

Additional conservation is possible, and desirable. After the City and its customers implement the easiest measures, education and outreach support from other stakeholders, cooperative efforts with regional water providers, supporting state legislation, and new funding sources becomes more important to meaningful adoption of other tools, and greater water conservation. In particular, State support is essential to successfully meet the State-set goals for our region. In recognition of this, the City will adopt stronger goals based on quantifiable State support, relative to the 2030 target date. The Moab water conservation goal of 250GPCD will decrease by 5 GPCD up to 230GPCD for each of the following actions:

1. State amendment of all relevant building codes to require WaterSense fixtures and EnergyStar washing machines and dishwashers

2. State amendment of all relevant residential building codes to require grey water pre-plumbing and associated landscaping
3. Consistent/ongoing funding from the State for approved conservation tool(s) including City actions, rebate programs, and planning efforts
4. Consistent/ongoing funding from the State for outreach and education efforts

Table 7. Percent Change in GPCD from 2000

Year	Population	Total AF	gallons per capita day	% change from 2000
2000	4779	1926.63	359.9	0.0%
2015	5251	1657.96	281.9	21.7%
2020	5341	1667.31	278.7	22.6%
2030	N/A	N/A	267	25.6%
2030*	5906*	1667*	230*	36%

6.3 Water Conservation Metric

The State has determined the metric for conservation goals at GPCD, or gallons per capita per day. The metric is a reasonable measure if only measuring municipal use. However, adding commercial, industrial, and institutional uses into the metric is problematic because the people who are using that water may not be living in the area where the water is being used – namely, tourists. Trying to determine whether metrics represent conservation or a change in economy are not represented using the current measurements.

The City of Moab has a tourism economy. There are over two million visitors per year, just to the National Parks, and more who never visit the parks. As such, the per capita metric does not include the numbers of visitors who use at least 16% of all commercial water, or 95AF, just on overnight accommodations. This does not include the amount of water used in other businesses catering to visitors such as restaurants and washing off highway vehicles. The City of Moab is interested in considering other metrics to determine their conservation goals. One which has potential is an Equivalent Residential Unit (ERU). It is already used for a variety of requirements associated with water supply and could be a metric which allows a comparison between economies and water conservation strategies.

6.4 Current Conservation Measures

Leak protection program / rebates

The leak protection program provides a rebate for the amount assumed to be lost due to a leak after the customer has fixed it. This is intended to provide an incentive for fixing leaks.

New Water Treatment Facility

The new Wastewater Treatment Facility uses only 20,000 gallons of water per month whereas the old one used two million gallons per month. This new facility has saved the City over 23.5 million gallons of water per year since it came online in 2017.

Outreach, Education

The City of Moab maintains a column in the *Moab Happenings* monthly newspaper and the monthly City Newsletter, e-mailed to those interested and those receiving e-bills for water service, devoted to issues of Sustainability. Water conservation is an important and frequent topic in these articles. In the past several years, the City has placed box ads in the two local weekly newspapers several times per year to educate readers about appropriate watering for outdoor landscaping and low-flow fixtures.

6.5 Current Conservation Ordinances and Standards

The City of Moab does not currently have any ordinances or standards addressing water conservation directly. However, the WaterNOW Alliance just awarded the City a grant for technical assistance to develop three things: 1) a greywater ordinance, 2) a landscaping ordinance, and 3) new development standards, which will be completed in early 2022. The City is looking forward to working with WaterNOW Alliance as well as Utah State University Extension experts to get smart, relevant, and up-to-date ordinances adopted as soon as possible. The City is also working on an Emergency Drought Management Plan.

6.6 New Conservation Measures for the Next Five Years

6.6.1 Planning Efforts

The City of Moab is spearheading an effort to bring all the water providers in the valley together to create a consensus-based Water Resource Management Plan. This group is called the Moab Spanish Valley Water Providers Coalition and consists of the City of Moab, Grand Water and Sewer Service Agency, San Juan Special Service District, and the Moab Irrigation Company. Grand County administration may or may not be part of this group. The state engineer's office has indicated that they do not believe a state-sanctioned Groundwater Management Plan is in order at this time, and that the valley aquifers have a few thousand-acre feet yet to be developed. However, the water providers in the valley disagree, and are interested in avoiding a crisis situation by undergoing a planning process prior to potential shortages. Undertaken now, this process will allow for community voices to be heard, experts to be consulted, and the best available science to be included – underpinned by the precautionary principle and a desire to create a sustainable water supply for all current and future residents.

The first meeting of this new coalition occurred at the end of July, 2021, with the intention to meet at least monthly until the process is complete. At this point, the group will evaluate their options and intentions moving forward and recommend policies.

6.6.2 Ordinances and Policies

A. Landscaping Code Amendments

The City's Water Conservation and Drought Management Advisory Board, which was formed as a result of the 2016 Water Conservation Plan, recommends developing landscaping code amendments which would have three main components. 1) Requiring new development to use waterwise landscaping and irrigation principles, limit or omit turfgrass, and include greywater systems (see below), 2) Instituting outdoor landscape watering rules for all customers during times of drought (see Drought Management Plan), and 3) Developing a recommended/required species list for any new development in Moab. This effort will be particularly helpful in conserving culinary water supply, which is currently being used as irrigation water on most properties in the City for lack of a secondary irrigation system.

A key component to the success of the landscaping ordinance is outreach to current residents and businesses to encourage adoption of waterwise landscaping and irrigation and abandonment of unused turfgrass. City staff is working on opportunities to improve existing demonstration landscaping around City Hall, as well as removing turfgrass and installing waterwise landscaping in a prominent location. These demonstration areas will serve to encourage current residents to do the same in their own homes and will provide inspiration and education to current and future residents.

These code amendments are planned for development in 2021 and adoption in 2022, and will consist of requirements for new developments and a best-practices guide for existing developments.

B. Grey Water

Residents began installing grey water systems as pilot projects with the Southeast Utah Health Department (SEUHD) a few years ago. The projects were successful and with the new information SEUHD collaborated with the Utah Division of Water Quality to re-write the rules associated with permitting grey water reuse in Utah. Since then, the SEUHD has permitted several residential homes including affordable housing. The systems are relatively easy to install compared to most landscaping irrigation systems and inexpensive if installed during the building of a new home.

The City plans to take advantage of the local expertise and the willingness of new homeowners to embrace these systems. Grey water use will make the City more resilient to drought and conserve water by reusing grey water to irrigate landscapes instead of sending it to the Wastewater Reclamation Facility and discharging it out of the area. It is estimated that new residences with lots less than 0.25 acres could save 50% of the water they would have used for outdoor irrigation.

The City is developing code amendments that would require the indoor plumbing associated with grey water systems be installed during the construction or remodel of new single family and multi-resident housing, in conjunction with the associated landscaping component.

The City is also looking to make the City's water portfolio more resilient by developing grey water code for new commercial developments. This would require new commercial buildings to install either grey water or rainwater catchment systems that would provide all the water required for the landscaping associated with the new development.

C. New Development Standards

In conjunction with the landscaping and greywater code amendments, the City will implement standards for new development that incorporate waterwise landscaping principles and water saving construction features. Landscaping will be required to be waterwise, using a recommended list of plants and features, limited areas of turfgrass and efficient irrigation. New construction will be required to use WaterSense labeled fixtures and appliances, and stub for greywater.

D. Emergency Drought Management Plan

The City intends to develop and adopt an Emergency Drought Management Plan to prepare for a situation of actual shortfall in water production. With thoughtful pre-planning, the City will be able to take the time needed for calculations, engage the public, and decide what measures make the most sense to conserve water when a drastic situation arrives. This may involve recommendations to install infrastructure for emergency shut-offs or secondary lines in all new construction so irrigation may be divorced from culinary uses. The City aims to adopt this plan within the next five years.

6.6.3 City Facilities Improvements

There are opportunities to improve municipal water efficiency which the City intends to complete as funds become available, beyond the infrastructure improvements bonded for and contained within the Capital Improvements Plan (mentioned in Section 1). There are three main City parks that use water for irrigating turfgrass – Rotary Park, Swanny Park, and Old City Park. In addition, the City maintains the ballfields outside City Hall and various other smaller areas. Improvements to the system involve four things:

- 1) installing smart timers and moisture meters for more efficient watering
- 2) removing grass where it is not needed
- 3) evaluating and fixing old systems to water where needed and not where it's not
- 4) replacing plants which have died and are still being irrigated, allow them to establish, and re-evaluate and reduce irrigation appropriately

In addition, there are opportunities to install green infrastructure and improve stormwater management to facilitate more infiltration and less runoff, as well as contribute to a greener streetscape. As City drainage features are renewed or repaired, green infrastructure can be incorporated into new designs and implemented where possible. If funding becomes available, the City will be able to develop a green infrastructure plan for areas where projects would be possible.

6.6.4 Outreach and Education

Successful water conservation in Moab will depend on both tangible and intangible elements. Efforts like replacing old fixtures and repairing leaks are opportunities to passively conserve water by updating systems. Behavior change is the intangible piece of the puzzle which will require a different approach. The City of Moab values the impact of education and outreach on

water conservation and will be continuously working to develop a community spirit of water conservation without sacrificing quality of life or economic opportunities.

Planned outreach efforts include articles in the local newspaper, the City Newsletter, and Moab Happenings, changing the design of the water bill to include conservation-oriented metrics, creating and distributing door hangers at properties with inefficient watering systems to offer consultation and resources, educational mailings with best practices and goals, and providing resources from local landscape designers, USU extension, and other knowledge holders to assist residents and businesses in their water conservation efforts. Keeping the community informed about progress towards our conservation goals is a key component of the outreach and education effort, and an essential piece of meeting our water conservation goals.

6.6.5 Programs

If funding becomes available, the City can invest in programs to accelerate landscaping conversion and outdoor irrigation water savings. These may include the following:

- Turfgrass buy-back / rebate: providing cash payments or rebates for property owners to replace lawn with water wise landscaping (this is a common program to encourage lawn conversion)
- Conservation rebates: direct water-bill rebate rewards for meeting conservation goals on top of the tiered rates
- Smart timer and moisture meter incentives: providing smart technologies to assist property owners with efficient watering
- Penalty for failing to fix leaks: adopting a penalty in addition to the rebate for failing to fix a leak in a timely manner
- Incentives for functioning greywater systems: reduced sewer rates for homes with fully functioning and permitted greywater systems

6.7 Responsibility for Meeting Conservation Goals

Chuck Williams, City Engineer: cwilliams@moabcity.org

Levi Jones, Public Works Director: ljones@moabcity.org

Mila Dunbar-Irwin, Sustainability Director: sustainability@moabcity.org

Carly Castle, Assistant City Manager: ccastle@moabcity.org

City Council, council@moabcity.org

****NOTE:** all positions are subject to change in personnel; responsibility will remain with the position not the person. Updated contact information can be obtained from City Administrative Assistant at info@moabcity.org, 435-259-5121

6.8 Action and Implementation Timeline

Year	Action
2021	<ul style="list-style-type: none"> • Establish Moab/Spanish Valley Water Providers Coalition • Work with USU to develop efficient watering schedule for City parks • Adopt Water Conservation Plan Update

2022	<ul style="list-style-type: none"> • Adopt Landscaping Ordinance and Greywater Ordinance • Adopt new development standards including water wise elements • Adopt Moab/Spanish Valley Water Providers Coalition Water Resource Management Plan • Inform community of the newly adopted Water Conservation Plan Update • Install smart timers for City parks, evaluate grass-removal areas • Water-wise landscaping guide sent to all addresses in Moab City including information on watering turfgrass, resources for xeriscaping, and other ways to reduce use of water outdoors
2023	<p>Implement incentive programs (when / if financially feasible):</p> <ul style="list-style-type: none"> ○ promote fixture replacement and inventory old fixtures where possible; ○ campaign to reduce water waste in the home and improve efficiency; ○ offer smart timers; ○ implement turfgrass buyback program ○ Support pilot green infrastructure installation
2024	Update landscaping guide and outreach regarding landscaping and greywater ordinances and new development standards
2025	Work with USU Extension to develop demonstration xeriscape garden in Moab
2026	Evaluate GPCD goal progress and City water conservation progress and update Water Conservation Plan

*progress on GPCD goal will be calculated annually after data is reported to the Division of Water Rights and published on the City of Moab’s website

SECTION 7: ECOLOGICAL CONCERNS

7.1 Introduction

The Mill Creek Watershed, its creeks and the wetlands they are connected to at the Colorado River’s edge, are critical components of not only a functional watershed and sustainable aquifer, but also have importance to community residents. It is critical to include functional riparian corridors and wetlands while exploring ways to ensure sustainable water for the Moab and Spanish Valley communities. Not only are the riparian corridors important for wildlife, but they also are important transportation and natural corridors through the town. Springs and smaller wetlands within the system arguably act as indicators of overall water quantity in the system in a qualitative way.

Water Conservation and Drought Management in the Moab Valley needs to include maintenance and enhancement of the ecological components as well as water delivery to residents and businesses.

7.2 Matheson Wetlands

The Scott and Norma Matheson Wetlands Preserve is a unique and rare wetland in the American Southwest along the Colorado River. The wetlands are not incorporated into the City of Moab’s town limits, but they are sandwiched between the City of Moab and the Colorado River. They are affected by the City of Moab and the entire Mill/Pack Creek hydrobasins surface and groundwater practices. The wetlands are owned by the State of Utah Department of

Natural Resources and The Nature Conservancy in approximately 50/50 split. The Wetlands are co-managed by the same two agencies.

The wetlands have had difficulty maintaining hydric vegetation during the previous two decades due to several anthropogenic and natural impacts. Climate change and drought have reduced the regularity of high seasonal flows in the Colorado that would flood the wetlands. Mill Creek historically provided some surface water and maintained the groundwater table but currently it is entrenched and several feet below the surface area of the wetlands. Increased domestic use of springs on the Northwest portion of the valley has also altered the water budget. There is also some concern that decreases in the freshwater layer by any of the previously stated means could affect the level of the brine layer under the freshwater layer and allow it to reach the surface or leach to the Colorado River.

This conservation plan suggests that the City of Moab support the wetland monitoring plan being developed by the State of Utah Division of Water Rights and management agencies of the wetlands. It is further suggested that the City of Moab and other Spanish Valley institutions pursue stormwater management plans to emphasize stormwater retention and detention as opposed to diverting directly to Mill and Pack Creek.

7.3 Mill Creek

Mill Creek starts at over 12,500' in the La Sals and flows down to 3,950' where it enters the Colorado River. The watershed includes Pack Creek, which parallels Mill Creek slightly to the south. 60% of the watershed is in Grand County with the remaining 40% in San Juan County. Less than 15% of the watershed is private land, and most of that is in the lower elevations in Grand and San Juan Counties. The creeks are an important feature through residential and commercial parts of Moab and Spanish Valley. In the summer months Mill Creek often runs dry as the bulk of the water is diverted for irrigation purposes.

In addition to surface water use for farming and other irrigation purposes, Mill Creek also serves as an important transportation corridor for wildlife and people along the Mill Creek Parkway. Active revegetation work during the past 20 years has shifted much of the riparian area from an exotic plant dominated area to a native riparian system better able to handle flood flows as well as provide an important recreational corridor.

Surface water flows are important to maintain throughout the creek system to support the riparian plant community.

7.4 Pack Creek

Pack Creek is a small stream that runs through Moab and Spanish Valley and converges with Mill Creek. Although Pack Creek is not a source of culinary water the aquifer below it is used for culinary and irrigation purposes. The aquifer has relatively high total dissolved solids (TDS) and the creek is not meeting the beneficial use standards for TDS, temperature, and E. coli. However, the creek and the aquifer still provide irreplaceable ecosystem services to Spanish Valley and its residents.

The water quality in Pack Creek is very good above its diversions below the Pack Creek Road Bridge. The creek is generally dry from the diversion until about ½ mile above Spanish Trail Road where the groundwater table becomes shallow and recharges the creek. The water is used to irrigate a small community there. The valley is somewhat pinched there, and several springs of varying water quality add volume to the creek. From there till the confluence with Mill Creek, Pack Creek and the underlying aquifer are responsible for a verdant riparian area that has several human benefits. During the irrigation season Pack Creek is responsible for most of the water in Mill Creek below their confluence due to withdrawals on Mill Creek. In Mill Creek during the irrigation season, the mostly Pack Creek water and the underlying valley fill aquifer also provide water to the Matheson Wetlands. The environmental concerns with the wetlands were discussed earlier in this document.

The growing population, development plans and long-term drought have made the valley fill aquifer a target for new water development. The aquifer itself has a relatively small amount of annual recharge. There are concerns that continued development of the valley fill aquifer will result in lower water tables, reduced or ceased recharge to Pack Creek and deterioration of water quality.

SECTION 8: OTHER CONSIDERATIONS

8.1 Colorado River

Moab City has water rights out of the Colorado River and could potentially change some of their unusable groundwater rights to increase the rights out of the Colorado. This water has been contemplated for use as an eventual secondary irrigation system, relieving some of the pressure of the culinary water drawn from the aquifer and allowing for a more ready method of regulation should the need for outdoor watering restrictions arise. Developing this system would require a large amount of funding and infrastructure, however, and is not currently feasible.

In the more immediate future, it would be possible to shift non-potable water, such as that used for construction sites, to surface water from the Colorado rather than culinary groundwater. Setting up a metered pump station would not be exceedingly onerous, and the City just needs to identify a suitable location. There is already a construction water pump station at the boat ramp at the 191 bridge, which is owned by Le Grand Johnson, a construction and paving company.

8.2 Water Banking

Water banking is adding water to an aquifer for later use, putting it “in the bank” so to speak, either literally or figuratively through water rights. The banked water is allowed to percolate down into the aquifer where it then disperses and is available for later use. In concept, this can either be done at the surface level, and recharge goes to shallow aquifers, or via deep injection wells to access deeper aquifers.

In Moab, water for recharge could come from the Colorado River, storm water, or future flash floods generated by increasing monsoonal storms predicted by climate change models. Untreated Colorado River water could be pumped up the valley, used for purposes mentioned

above, and eventually be emptied into designated recharge areas such as Kens Lake, flood irrigated fields, or purpose-built shallow ponds or wells. This could be a way for the City to “use” water that is currently considered lost from the system due to variations in seasonal needs and continuously flowing springs. There are potentially 300-400 AF of water the City does not actively use each year from Skakel springs in the winter that instead of running off to the river, could conceivably be banked for future withdrawals.

Developing a water bank is not currently on the City’s priority list, however, it is something to keep in mind for the future.

**CITY OF MOAB
PUBLIC HEARING
WATER CONSERVATION PLAN UPDATE**

The City of Moab will hold a Public Hearing on Tuesday, November 9, 2021, at approximately 7:00 p.m. in the Council Chambers of the Moab City Offices at 217 East Center Street, Moab, Utah.

The purpose of this hearing is to solicit public input on the draft Water Conservation Plan Update.

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.

/s/ Sommar Johnson
City Recorder

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APPROVED: 

Emily S. Niehaus, Mayor

ATTEST: 

Sommar Johnson, City Recorder

**MOAB CITY COUNCIL MINUTES
REGULAR MEETING
November 9, 2021**

The Moab City Council held its Regular Meeting on the above date. Audio recordings of the workshop and regular meeting are archived at www.utah.gov/pmn. Due to the health and safety risks related to the ongoing COVID-19 pandemic and consistent with provisions of the Utah Open and Public Meetings Act, Utah Code Annotated § 52-4-207(5)(a), the Moab City Council Chair has issued written determinations supporting the decision to convene electronic meetings with the City Council chambers serving as a physical anchor location.

Pre-Council Workshop:

Mayor Niehaus called the Pre-Council Workshop to order at 1:00 p.m. Participating remotely were Councilmembers Karen Guzman-Newton, Rani Derasary, Mike Duncan and Kalen Jones. Councilmember Tawny Knuteson-Boyd observed the meeting electronically. City staff participating remotely were Acting City Manager Carly Castle, Finance Director and Acting Deputy Manager Ben Billingsley, Recorder Sommar Johnson, Code Compliance Specialist Mona Pompili, Building Inspector Barry Ellison, Wastewater Reclamation Facility Superintendent Obe Tejada, Planner Nora Shepard and Assistant Planner Cory Shurtleff. A video recording is archived at www.youtube.com/channel/UCloozoZgdmz4y1FoIol7CJA.

Accessory Dwelling Units (ADUs):

Assistant Planner Shurtleff opened the discussion of **Proposed Ordinance 2021-16: An Ordinance Amending the Text of the Moab Municipal Code (MMC) to allow ADUs in all residential Zones subject to a revised Section 17.70 Accessory Dwelling Units and Section 17.06.020 Definitions**. The dialogue covered several topics including definitions of local workforce, exemptions for family, retirees and non-paying guests, the prerequisite of a formal lease with a three-month minimum term requirement, and conditions regarding owner-occupancy of internal ADUs. Concerns regarding taxation were discussed. Consensus was reached on the talking points and staff were directed to forward the proposal for legal review.

Workshop Adjournment:

Councilmember Duncan moved to adjourn the workshop portion of the meeting. Councilmember Jones seconded the motion. The motion passed 4-0 aye with Councilmembers Jones, Derasary, Duncan and Guzman-Newton voting aye. Mayor Niehaus adjourned the workshop at 3:01 p.m.

Regular City Council Meeting:

Mayor Niehaus called the meeting to order from the Council Chambers at 7:06 p.m. Councilmembers Guzman-Newton, Knuteson-Boyd, Duncan, Derasary and Jones attended remotely. City staff participating in-person or remotely included Acting City Manager Castle, Finance Director and Acting Deputy Manager Billingsley, Assistant Planner Cory Shurtleff, Sustainability Director Mila Dunbar-Irwin, Parks, Recreation and Trails Director Annie McVay, Sports Director Patrick Trim, Engineer Chuck Williams and Recorder Sommar Johnson. A video recording is archived at www.youtube.com/watch?v=AfGlds4cNI.

Public Hearings and Citizens To Be Heard:

Mayor Niehaus opened two public hearings and Citizens To Be Heard simultaneously for ease of audience participation. The Public Hearings concerned **Proposed Ordinance 2021-19: An Ordinance Amending Moab Municipal Code 3.50.100 Sanitary Sewer Rates of the Master Fee Schedule and the City of Moab Draft Water Conservation Plan Update**.

Bob O'Brien spoke about the Draft Water Conservation Plan Update. He admired certain aspects of the Plan, such as goals related to graywater, conversion of agricultural irrigation from culinary water supply, repairs of leaking pipes and proposed tiered rates. He took issue with the narrow focus of the Plan on conserving water to serve an increasing human population rather than other motivations such as preserving riparian zones, wetlands and wildlife habitat. He stated he reviewed an older draft of the Plan and noted the absence of much information regarding climate change. He stated that Castle Valley had experienced a 19 percent decrease in water supply due to climate change in 20 years. He said an anticipated 20 percent decrease required more attention in the Plan. He said the Plan should address resilience and cited a *Journal of Hydrology* study that indicated more development could affect aquifer recharge.

Mary O'Brien wrote: I have four concerns with the Moab City Water Plan (I live in Castle Valley): 1. The plan fundamentally fails to face the climate changing future of water source declines due to drought and rising temperature. No mention is given to the reductions in water sources predicted by climate researchers. 2. Growth is not questioned. How and whether reduced or no growth could be equitably approached is not considered. The plan seems to

conserve water so growth can continue while hovering too near to mining the Glen Canyon Aquifer. Measures for "new development" are mentioned ten times in the plan and "new construction" three times. 3. Moab needs to emphasize native plants in water-wise planting incentives and requirements. Native vegetation is more likely to support native wildlife diversity, including invertebrates. 4. Mill Creek: One of the most valuable ecological features of the City should receive more consideration. Possibilities should be explored for negotiating with the Moab Irrigation Company to allow for greater than three cubic feet per second (cfs) to Mill Creek. Mill Creek was flowing millennia before MIC got private "rights" to remove most of the creek's water. The diversion of most of Mill Creek water to growing alfalfa for cattle is an unfortunate arrangement. I urge inclusion of all these in Moab water planning.

William Love wrote: The Water Conservation Plan does not address water problems in Spanish Valley. This is one aquifer with many straws. 1. Grazing cows on the watershed is suicidal. The plan needs to focus on the Pack Creek fire area and set this aside for development of the watershed with plants that increase percolation. 2. The City continues to increase density and sells more water. The City has no idea of the quantity of water sold to planned developments. First, we need to know how much water we have already promised before new development promises are made. 3. Residents should not conserve a drop of water for more development. The plan needs to set a limit on usage before the public is asked to conserve.

Charlotte Mates asked about the apparent closure of a footbridge between Main Street and Kane Creek Boulevard. She asked who owns the property and why the signage and barriers announced the closure of the bridge. She spoke about the hardship on residents of the Kane Creek Boulevard neighborhood and the unexpected closure.

Aaron Linberg spoke about the aging sewer infrastructure in the Walker subdivision. He noted replacing dilapidated sewer lines from homes to the curb was expensive, and that hooking up replacement pipes from the curb to the City's lines is cost-prohibitive for homeowners.

Kara Dohrenwend spoke about the City's letter of support regarding the Mill Creek Community Collaboration (MCCC) recommendations. She addressed the counterproposal introduced by Moab Solutions and noted that overuse is not unique to Mill Creek and the condition of Mill Creek is the same or better than it was in the 1990s. She noted the area is unusual because it is located within the urban area. Dohrenwend suggested that, if the City shows support for decreased visitation, it should advocate for this in all nearby recreation areas. She urged Council to support the recommendations of the MCCC group. Ms. Dohrenwend also provided additional written comments: the Moab Solutions (MS) objections are philosophical and long standing and were discussed by the Collaboration often--only to have MS reject consensus at the last minute. MS objections are linked to the over-saturation of visitors in the entire region and do not address the impacts this trailhead has on residential areas of town. The City should be actively advocating for reduced tourism everywhere in our region, as the real impacts to the public land in the area are much greater outside of Mill Creek. Other objections to the MCCC recommendations related to relocating the primary trailhead parking to Potato Salad Hill were also noted in the document. Other than Cliff Koontz from Ride with Respect, the four-wheel community was invited from day one and took an attitude of "this isn't about us" until the community started to back the idea of shifting the entrance across the creek. The Sheriff's office apparently was not getting emails from the MCCC or chose not to respond/participate as the group worked through those things. Issues raised by Sand Flats were cited in the recommendations and all of these objections were expressly noted in the MCCC document to ensure transparency. It would be a shame to throw away the work done by the stakeholders and countless residents who provided input and comments as this process moves on to the BLM.

Brian Murdoch spoke in support of the MCCC stakeholder group process and near-consensus. He stated that three years of work and two extensive public surveys went into the recommendations. He urged the City to support the work of the WCCC.

Colin Topper wrote: I support the work done by MCCC. Specifically, option C. Closing the Powerhouse Lane access to vehicles, while allowing pedestrians and bicycles, would benefit not only those residents of Powerhouse Lane, but also any Moab residents wishing to walk or bike into the canyon. As it currently stands, the access road is dusty and dangerous during the busy season. The Sand Flats Road already serves as an access to public land; what a perfect complement to access Mill Creek.

Barb Lacy wrote: The number of pickle ball players in Moab, along with visiting pickle ball enthusiasts, is ever growing. On a recent Friday morning, there were 26 players: four tennis courts at the High School with temporary chalked lines allowed for 16 players at a time. As there are no real dedicated courts in Moab, we play when and wherever allowed. It is time for the City of Moab to have dedicated courts for this sport. I understand the city recently received grant funds for pickle ball and the challenge is finding land for courts. Please consider a location within city limits that is within walking or bike-riding distance. Discussion regarding building courts at Old City Park or the golf course means more folks in cars traveling our roads and

would likely limit kids from using a facility. Additionally I would encourage Moab City to coordinate with Grand County and Grand County School District to fund and build courts. All three entities have looked at options for dedicated courts. Why not pool resources and build a first class facility? Thank you for your consideration.

Nan Marquardt wrote: I would like the pickle ball courts to be constructed, if possible, within walking or easy biking distance of City Hall. Sun Court is a possibility.

Bruce Dissel wrote: Pickleball courts would be a tremendous benefit to tourists and locals alike. Communities in our area, some much smaller than Moab, are building them. I advocate, for starters, resurfacing Sun Court until the City can build a new complete court facility. I would also encourage the city to collaborate with Grand County and the school district to build a facility that would accommodate the growing sport for seniors, kids and tourists alike. Thank you for your attention to this matter!

Patricia Jones wrote: Thank you for all that you do for the City of Moab. It is my understanding the City is investigating locations for building pickleball courts. I am on a steering committee trying to get courts built and am on the board of our newly formed nonprofit 'Friends of Pickleball' organization and the Grand County Recreation Board. My conclusions: Lion's Hub is too far from town, busy as a tourist hub, noisy with highway traffic, cold in winter due to river proximity and not enough space for courts. Swanny Park: pickleball itself is too noisy to be located by the city pool and next to residences, therefore a fear that complaints made in the future would result in time restrictions. We like to start play at 6:00AM in the summer to beat the heat. Perhaps a spot on the east side of the park? Also little to no parking available. Rotary Park: not enough space. Old City Park/Golf course: Would accommodate about ten of the 50+ players in our group. The Old Spanish Trail Arena has plans for four courts to be located at their site. Sun Courts: many of our Moab group of pickleball players live in the city and would like to see courts located in town. The Sun Court has space for three courts facing North and South with partitioning in between. It appears the current surrounding wall and fencing could remain with only cement resurfacing, basketball hoop removal and net installation. The two indoor courts available next door at the Center Street Gym would make five courts total, enough for now, and the available restrooms would keep costs down. I am unaware of any other city properties you might be considering. Our Pickleball group has been negotiating with the Grand County School District for possible courts at the High School. An Interlocal agreement between the school district, Moab City and Grand County will be needed. I would be happy to present more information about pickleball in general and/or what we as a group see as our needs.

Close of the Public Hearings:

Councilmember Knuteson-Boyd moved to close the public hearings. Councilmember Duncan seconded the motion. The motion passed 5-0 aye with Councilmembers Jones, Derasary, Knuteson-Boyd, Duncan and Guzman-Newton voting aye. Mayor Niehaus closed the public hearings at 7:34 p.m.

Administrative Reports:

Finance Director and Acting Deputy Manager Billingsley reported on discussions with the County regarding the Film Commission budget. He stated negotiations were moving forward for the County to assume the Film Commission support. Billingsley thanked the Recorder's staff for their work on the elections. He said there would be a public survey regarding Ranked Choice Voting after the canvass on November 16. He said he met with David Ingleman of the Moab Irrigation Company (MIC) regarding creation of a low-cost water feature at Rotary Park.

Councilmembers Jones and Guzman-Newton asked about upcoming meetings of the Utah Department of Transportation (UDOT) regarding the Unified Transportation Plan and rural Utah transportation planning. Mayor Niehaus pointed out there was no dependable public transportation to Salt Lake City or elsewhere. She also noted the City's negative position on the proposed Bypass, and brought up rail service as an option. Councilmember Guzman-Newton brought up revisions to the design of Main Street in an effort to slow traffic. She mentioned federal highway funds. Mayor Niehaus and Councilmember Jones agreed to represent the City at an upcoming Moab meeting of the state transportation commission.

Mayor and Council Reports:

Mayor Niehaus reported she was working with Mayor-elect Joette Langianese on the transition and attended meetings of the Southeastern Utah Association of Local Governments and the state Water Quality board. Niehaus expressed kudos to the Recorder's staff and the Utah County Elections staff regarding the general election.

Councilmember Derasary reported Utah's rural Emergency Medical Services (EMS) directors met in Moab. She brought up EMS topics related to the upcoming legislative session, including services for children, behavioral assistance for staff and legislative funding. She mentioned data sharing between jurisdictions and EMS house calls to assist primary care providers. Derasary also mentioned a field trip meeting of the Riparian Partnership at the Potash boat ramp. She

remarked on trail ambassadors and an effort to tie Leave No Trace responsibilities to business licenses for outfitters. She said she met with Joette Langianese and staff of the Uranium Mill Tailings Remediation Act (UMTRA) Moab site to discuss next steps. She said she attended a webinar on clean energy and brought up the concern regarding bicycle and pedestrian bridges on Kane Creek. She asked about rejected ballots related to Ranked Choice Voting.

Councilmember Duncan reported on a meeting of the Grand Water and Sewer Special Service District. He noted he toured the new Utah State University campus and mentioned some delays with material deliveries. He mentioned opportunities for vocational education and brought up the university's advisory board.

Councilmember Knuteson-Boyd reported on a COVID outbreak at the Canyonlands Care Center. She said ten staff tested positive, along with 11 of 31 residents. She said all residents were vaccinated. She mentioned the Hopi Katsina exhibit at the Museum.

Councilmember Guzman-Newton reported on the Airport Board meeting, noted flights to Salt Lake City would be suspended for the winter, and one flight per day would serve Denver. She said enplanements were up and there was airport demand to serve bigger jets and for more hangars. She reported on the Chamber of Commerce banquet and mentioned Brendon Cameron and City Market were Citizen of the Year and Business of the Year, respectively, and the Moab Free Health Clinic was awarded Nonprofit of the Year. She mentioned discussions with the legislature to shift uses of the Transient Room Tax in rural communities.

Councilmember Jones reported on a meeting of the Travel Council where timed entry at Arches National Park was discussed, and he noted a new shuttle to the Salt Lake City airport. He reported on the Housing Task Force and interviews with the Visioning Consultant candidates. He also reported on the Community Renewable Energy board meeting.

Councilmember Derasary mentioned the upcoming Pack Creek Fire Reseeding event. Mayor Niehaus mentioned the upcoming Veterans Day ceremony.

Approval of Minutes:

Councilmember Derasary moved to approve minutes of October 26, 2021 Special and Regular Meetings. Councilmember Guzman-Newton seconded the motion. The motion passed 5-0 with Councilmembers Derasary, Jones, Guzman-Newton, Knuteson-Boyd, and Duncan voting aye.

Old Business:

Accessory Dwelling Units—Tabled

Mayor Niehaus announced that the Special Workshop Meeting, conducted earlier in the day, resulted in consensus on various elements of **Proposed Ordinance 2021-16: An Ordinance Amending the Text of the Moab Municipal Code (MMC) to allow ADUs in all residential Zones subject to a revised Section 17.70 Accessory Dwelling Units and Section 17.06.020 Definitions.** She said Council instructed staff to present the draft ordinance for review by legal counsel.

Motion and Vote: Councilmember Knuteson-Boyd moved to table Proposed Ordinance 2021-16: An Ordinance Amending the Text of the Moab Municipal Code (MMC) to allow ADUs in all residential Zones subject to a revised Section 17.70 Accessory Dwelling Units and Section 17.06.020 Definitions pending legal review. Councilmember Duncan seconded the motion. The motion to table passed 5-0 aye with Councilmembers Jones, Derasary, Knuteson-Boyd, Duncan and Guzman-Newton voting aye.

Sanitary Sewer Rates—Approved

Discussion: Councilmember Derasary stated she had spoken with representatives from local churches. Finance Director and Acting Deputy Manager Billingsley explained proposed funding for debt service and capital improvements.

Motion and Vote: Councilmember Derasary moved to adopt **Ordinance 2021-19** as presented in option A, an ordinance amending the sewer rate portion of the Master Fee Schedule. Councilmember Jones seconded the motion. The motion passed 4-1 aye with Councilmembers Jones, Derasary, Knuteson-Boyd and Guzman-Newton voting aye and Councilmember Duncan voting nay.

Draft Water Conservation Plan Update—Discussion

Sustainability Director Dunbar-Irwin presented the Plan for Council discussion. Councilmember Jones noted the Plan presented an unfunded mandate. He suggested the state could create new standards within the building code, with particular regard to Water Sense fixtures and Energy Star appliances. Dunbar-Irwin explained these standards were not already a part of the building code. Councilmember Guzman-Newton asked which state agency would promote the building code revision and Councilmember Jones explained the Utah 100 [Utah Communities collaborating to transition to net-100 percent renewable electricity] could work toward the code revision. He said the new standard is widely supported outside Utah. Mayor Niehaus noted the narrow focus on human impacts in the draft Water Conservation Plan. Councilmember Derasary asked about edits concerning riparian and wetlands areas. Dunbar-Irwin stated such language

would be added and noted climate change information is included in the current draft.

Mill Creek Recommendations to the BLM—Approved

Discussion: Councilmember Duncan stated he supports the recommendations of the Mill Creek Community Collaborative (MCCC) and stated he is not interested in presenting the alternative put forward by Moab Solutions with equal weight. Councilmember Guzman-Newton declared her support for the three-year effort of MCCC. Councilmember Knuteson-Boyd acknowledged her appreciation of and respect for all the work of MCCC.

Motion and Vote: Councilmember Guzman-Newton moved to approve a letter of support for the Mill Creek Community Collaborative recommendations to the Bureau of Land Management. Councilmember Knuteson-Boyd seconded the motion. The motion passed 5-0 aye with Councilmembers Jones, Derasary, Knuteson-Boyd, Duncan and Guzman-Newton voting aye.

New Business:

Pickleball Courts—Discussion

Parks, Recreation and Trails Director McVay stated the City had secured a grant of \$80,000 from the Utah Land and Water Conservation Fund. She explained the grant requires a 50 percent match and that the grant recipient must permanently own the selected site. Discussion ensued regarding a public process related to a change of use of City property, the site selection committee, needed approvals and the recently formed Pickleball club. Finance Director and Acting Deputy Manager Billingsley explained the Recreation, Arts and Parks (RAP) tax could be used for this project and there would be no expenses in the current fiscal year. Councilmember Derasary asked about a public relations campaign. Councilmember Jones asked about the court size requirements. Councilmember Duncan asked about Swanny Park as a location and Mayor Niehaus brought up the site at the gold course.

Pack Creek Bridge Widening Agreement—Approved

Discussion: Councilmember Derasary asked about the 50 percent match required for the project. Councilmembers Duncan and Guzman-Newton asked for clarification regarding bicycle and pedestrian access, lane widths and street design.

Motion and Vote: Councilmember Duncan moved to approve the Cooperative Agreement with Utah Department of Transportation (UDOT) relating to the Pack Creek Bridge Widening Project. Councilmember Jones seconded the motion. The motion passed 5-0 aye with Councilmembers Jones, Derasary, Knuteson-Boyd, Duncan and Guzman-Newton voting aye.

Pack Creek Bridge Widening Project Task Order—Approved

Motion and Vote: Councilmember Knuteson-Boyd moved to approve Task Order 2021-03 with Civil Science, Inc. for engineering services relating to the Pack Creek Bridge Widening Project. Councilmember Jones seconded the motion. The motion passed 5-0 aye with Councilmembers Jones, Derasary, Knuteson-Boyd, Duncan and Guzman-Newton voting aye.

HooDoo Hotel Plat Amendment—Approved

Motion and Vote: Councilmember Duncan moved to approve **Proposed Resolution 34-2021:** A Resolution Approving the Plat Amendment of Property Located at 261 Walnut Lane, 178 W Williams Way, and 111 North 100 West, Moab UT 84532, for the HooDoo Hotel. Councilmember Jones seconded the motion. The motion passed 5-0 aye with Councilmembers Jones, Derasary, Knuteson-Boyd, Duncan and Guzman-Newton voting aye.

Approval of Bills:

Motion and vote: Councilmember Knuteson-Boyd moved to approve the bills against the City of Moab in the amount of \$279,072.54. Councilmember Derasary seconded the motion. The motion passed 5-0 with Councilmembers Jones, Duncan, Guzman-Newton, Derasary, and Knuteson-Boyd voting aye.

Executive (Closed) Session:

Motions and Votes: Councilmember Duncan moved to convene an Executive (Closed) session to discuss the character, professional competence, or physical or mental health of an individual or individuals. Councilmember Guzman-Newton seconded the motion. The motion passed 5-0 aye with Councilmembers Jones, Derasary, Knuteson-Boyd, Duncan and Guzman-Newton voting aye. Mayor Niehaus convened the Executive Session at 9:38 p.m. Councilmember Derasary moved to end the Executive Session. Councilmember Guzman-Newton seconded the motion. The motion passed 5-0 aye with Councilmembers Jones, Derasary, Knuteson-Boyd, Duncan and Guzman-Newton voting aye. Mayor Niehaus ended the Executive Session at 10:27 p.m.

Adjournment: Councilmember Derasary moved to adjourn the meeting. Councilmember Duncan seconded the motion. The motion passed unanimously and Mayor Niehaus adjourned the meeting at 10:27 p.m.

APPROVED: _____

Emily S. Niehaus, Mayor

ATTEST: _____

Sommar Johnson, City Recorder

**MOAB CITY COUNCIL MINUTES
SPECIAL MEETING
November 16, 2021**

Moab City Council held a Special Meeting on the above date. Consistent with provisions of the Utah Open and Public Meetings Act, Utah Code Ann. § UCA52-4-207(5)(a), the Council Chair has issued written determinations supporting the decision to convene electronic meetings of the Council due to health and safety risks. Moab City Council Chambers served as the meeting's anchor location. An audio recording is archived at www.utah.gov/pmnm; a video recording is archived at www.youtube.com/watch?v=jsnZREo34LM&t=7s.

Attendance:

Mayor Emily Niehaus called the Special Meeting to order at 12:05 p.m. Participating remotely were Councilmembers Rani Derasary, Tawny Knuteson-Boyd, Mike Duncan and Kalen Jones. Councilmember Karen Guzman-Newton was not in attendance. Staff participating remotely were Recorder Sommar Johnson, Acting City Manager Carly Castle and Finance Director/Acting Deputy Manager Ben Billingsley. Representatives from the Utah County Elections office who participated remotely included Rozan Mitchell, Nicole Stevens and Mark Davey.

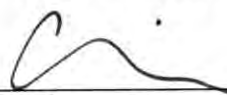
Canvass of the General Election:

Recorder Johnson presented the canvass of the City of Moab General Election held on November 2, 2021. She shared the results, showing Joette Langianese attaining the Mayor's seat and Jason Taylor and Luke Wojciechowski gaining Council seats. She provided information regarding over counts and undercounts in both the Mayoral contest and the City Council race. Councilmembers asked about the counting methodologies. Johnson indicated the Lieutenant Governor's office advised the Council to accept the canvass as presented today.

Due to a tally of votes that separated Council candidates Wojciechowski and Josie Kovash by one vote, Utah County spokesperson Mitchell indicated a recount of the Council race would occur on December 7 at City Council Chambers. She said it would include a small number of provisional ballots as well as some ballots with signature-matching issues. Discussion ensued regarding whether the recount would entail extra fees for Utah County to administer. Councilmember Duncan asked if poll watchers would be welcome at the recount and Johnson confirmed that would be the case.

Councilmember Knuteson-Boyd moved to accept the election results as presented. Councilmember Jones seconded the motion. The motion passed 4-0 aye, with Councilmembers Knuteson-Boyd, Derasary, Duncan and Jones voting in favor.

Adjournment: Mayor Niehaus adjourned the meeting at 12:26 p.m.

APPROVED: 
Emily S. Niehaus, Mayor

ATTEST: 
Sommar Johnson, City Recorder

**MOAB CITY COUNCIL MINUTES
REGULAR MEETING
December 14, 2021**

Moab City Council held its Regular Meeting on the above date. Consistent with provisions of the Utah Open and Public Meetings Act, Utah Code Annotated § 52-4-207(5)(a), the Moab City Council Chair issued written determinations supporting the decision to convene electronic meetings with City Council chambers serving as a physical anchor location. Audio is archived at www.utah.gov/pmnm and video is archived at <https://www.youtube.com/watch?v=7Elr9L7xgog>.

Attendance and Call to Order:

Mayor Emily Niehaus called the meeting to order from the Council Chambers at 7:02 p.m. Councilmembers Karen Guzman-Newton, Tawny Knuteson-Boyd, Mike Duncan, Rani Derasary and Kalen Jones attended remotely. City staff participating included Acting City Manager Carly Castle, Finance Director and Acting Deputy Manager Ben Billingsley, Code Compliance Specialist Mona Pompili, Assistant Planner Cory Shurtleff, Sustainability Director Mila Dunbar-Irwin, Parks, Recreation and Trails Director Annie McVay, Engineer Chuck Williams and Recorder Sommar Johnson.

Citizens To Be Heard:

Aaron Lindberg presented suggestions to improve affordable replacements for aging residential sewer pipes in lieu of continuously excavating City streets.

Public Hearing:

Mayor Niehaus opened a public hearing concerning **Proposed Resolution 35-2021: A**

Resolution Amending the Fiscal Year 2021-2022 Budget. Councilmember Jones moved to open the public hearing. Councilmember Knuteson-Boyd seconded the motion. The motion passed 5-0 aye with Councilmembers Jones, Derasary, Knuteson-Boyd, Duncan and Guzman-Newton voting aye. There were no written or spoken comments. Councilmember Jones moved to close the public hearing. Councilmember Derasary seconded the motion. The motion passed 5-0 aye with Councilmembers Jones, Derasary, Knuteson-Boyd, Duncan and Guzman-Newton voting aye. Mayor Niehaus closed the public hearing at 7:12 p.m.

Administrative Reports:

Acting City Manager Castle announced a public Ranked Choice Voting survey, the City Hall holiday closure schedule and noted specific hours the Treasurer's Office would be open. Castle noted the retirement of Planning Director Nora Shepard and the hiring of Kelley McInerney as the new director of the Moab Arts and Recreation Center (MARC). She mentioned several openings on the staff. She mentioned an open house with Grand County for the unified transportation plan. Castle bid farewell to outgoing Councilmembers and the Mayor.

Code Compliance Specialist Pompili reported on code violations regarding accessory dwelling units and illegal nightly rentals. She noted neighbors should contact her office to report potential violations. She answered questions from Council regarding compliance enforcement and mentioned a Good Landlord program proposed to be tied to business licensure.

Parks, Recreation and Trails Director McVay provided an update on the status of the Pack Creek Foot Bridge. She reported the bridge was last repaired in 2018 and estimated replacement costs between \$300,000 and \$1 million. She outlined potential grant funding. Acting Deputy Manager and Finance Director Billingsley explained funding options for the bridge as proposed in the pending budget amendment.

Mayor and Council Reports:

Mayor Niehaus spoke about her enjoyment of celebrations at which she represented the City. She noted her appreciation of San Juan County Commissioner Bruce Adams and staff of the Utah Department of Transportation (UDOT).

Councilmember Derasary reported on two meetings of the Grand County Emergency Medical Services Special Service District as well as a meeting of the Systems of Care group.

Councilmember Duncan reported on the Western Water Associates and the scheduled April 1 opening of the new campus of Utah State University (USU).

Councilmember Knuteson-Boyd reported she attended the Veterans' Day ceremony and two meetings of the Canyonlands Health Care Special Service District. She reported the Housing Authority's construction began at Arroyo Crossing, the Museum Board's pursuit of new Standards of Excellence, and said she attended a workshop for elected officials in Price.

Councilmember Guzman-Newton reported on the open house of the unified transportation plan and noted there were as many as 800 vehicles per hour on Main Street. She mentioned that several City-operated street lamps were out of order on Main Street. She suggested solar-powered lighting options. She noted she attended a Chamber of Commerce board meeting and reported on the Airport Board, stating there were record enplanements and that Skydive Moab logged 25,000 jumps. She noted the parking concession brought in \$25,000 in revenues. She urged Council to advocate for rail service and noted 35 percent of Main Street traffic is comprised of semi-trucks. She concluded with a mention of the Arches National Park timed entry open house and thanked staff and colleagues for contributing to her term in office.

Councilmember Jones reported on a meeting of the Travel Council. He noted efforts aimed at regenerative and sustainable tourism. He mentioned meetings of USU's Gateway & Natural Amenity Region (GNAR) Initiative, the Community Renewable Energy board, the Housing Taskforce and the UDOT transportation plan open house.

Approval of Minutes:

Councilmember Knuteson-Boyd moved to approve the minutes of the November 9, 2021, Regular Meeting and the November 16, 2021, Special Meeting. Councilmember Jones seconded the motion. The motion passed 5-0 with Councilmembers Derasary, Jones, Guzman-Newton, Knuteson-Boyd, and Duncan voting aye.

Old Business:

Water Conservation Plan Update—Approved

Discussion: Councilmember Derasary brought up community sentiment regarding conserving water for new development and second homes. Discussion ensued regarding setting a goal to exceed the state's gallon per capita per day benchmark. Sustainability Director Dunbar-Irwin explained the Water Conservation Plan Update is a non-binding document. Councilmember Duncan mentioned there was no clear understanding of why the City's per capita use decreased in the last five years but speculated it might be due to the new wastewater treatment facility.

Councilmember Knuteson-Boyd acknowledged her respect for the work that went into the preparation of the Plan. Councilmember Derasary mentioned the membership of the proposed water resource coalition. References were made to the proposed amendment to the text of the Plan, as follows: "When water saved via the easiest conservation measures is simply reallocated to accommodate increasing population growth, it can make it difficult to achieve further cuts during a future decrease in supply--whether that decrease is a temporary drought emergency or a longer-term impact to supply. If, for instance, climate change reduces available water more than predicted, or, further investigations into aquifer supply reveal that we are already over-drawing, then the impact of additional demand would be much greater than anticipated, and have unwelcome consequences. Therefore, it is crucial to keep in mind that conservation should not simply be reallocation of saved water, but also include building excess capacity into the system now for resiliency in an uncertain future. A thoughtful Drought Emergency Plan is also a critical component of a sustainable water conservation program. The City intends to continue to support efforts to refine information about our supply, and to be conscientious conservers--keeping an awareness of the pitfalls of demand hardening and the benefits of maintaining excess capacity in building long term system resilience."

Motion and Vote: Councilmember Duncan moved to approve the Water Conservation Plan Update 2021 with amendments. Councilmember Knuteson-Boyd seconded the motion. The motion passed 5-0 aye with Councilmembers Jones, Derasary, Knuteson-Boyd, Duncan and Guzman-Newton voting aye.

Water Conservation and Drought Management Board Bylaws Amendments:
Mayor Niehaus removed this item from the agenda.

Development Agreement for 398 Kane Creek Blvd:
Mayor Niehaus removed this item from the agenda.

Proposed Ordinance 2021 -15: Zoning Map Amendment for 398 Kane Creek Blvd:
Mayor Niehaus removed this item from the agenda.

Accessory Dwelling Units Code Amendments—Approved

Discussion: Assistant Planner Shurtleff described the three types of Accessory Dwelling Units (ADUs) subject to the Proposed **Ordinance 2021-16: An Ordinance Amending the Text of the Moab Municipal Code (MMC) to Revise Section 17.70 Accessory Dwelling Units (ADUs) and Section 17.06.020 Definitions.** He also presented information about the active employment household requirement, and permitting and approval compliance concerns. Shurtleff answered questions from Council regarding the 90-day minimum lease requirement.

Motion and Vote: Councilmember Duncan moved to approve **Ordinance 2021-16: An Ordinance Amending the Text of the Moab Municipal Code (MMC) to Allow ADUs in all Residential Zone Districts and to Revise Section 17.70 Accessory Dwelling Units (ADUs) and Section 17.06.020 Definitions.** Councilmember Knuteson-Boyd seconded the motion. The motion passed 4-1 aye with Councilmembers Jones, Knuteson-Boyd, Duncan and Guzman-Newton voting aye and Councilmember Derasary voting nay.

New Business:

Award of Water Department Vacuum Trailer Purchase:
Mayor Niehaus removed this item from the agenda.

Film Commission Transfer to Grand County—Approved

Discussion: Parks, Recreation and Trails Director McVay stated the County would pass its budget the following week and recommended approval pending the County's approved budget. Councilmember Guzman-Newton stated that, in the future, affected staff should be apprised immediately of pending negotiations.

Motion and Vote: Councilmember Derasary moved to terminate the Interlocal Agreement for the Provision of the Formation of a Film Commission by and Between Grand County and the City of Moab (**Resolution #20-2007**) pending approval of Grand County's 2022 Budget and to approve **Resolution #37-2021: A resolution of the Governing Body Declaring City Property as Surplus.** Councilmember Duncan seconded the motion. The motion passed 5-0 aye with Councilmembers Jones, Derasary, Knuteson-Boyd, Duncan and Guzman-Newton voting aye.

Fiscal Year 2021-2022 Budget Amendment—Approved

Discussion: Councilmember Knuteson-Boyd expressed her appreciation for Mr. Billingsley's summary of the proposed budget amendment. Councilmember Derasary stated her preference for funding replacement of the Kane Creek pedestrian bridge over the 400 East bridge, which had previously-committed City funding.

Motion and Vote: Councilmember Jones moved to approve **Resolution 35-2021: A Resolution Amending the Fiscal Year 2021-2022 Budget.** Councilmember Knuteson-Boyd seconded the motion. The motion passed 5-0 aye with Councilmembers Jones, Derasary, Knuteson-Boyd, Duncan and Guzman-Newton voting aye.

Community Vision and Strategic Action Plan Contract—Approved

Motion and Vote: Councilmember Jones moved to award the Community Vision and Strategic Action Plan contract to Future IQ, in an amount not to exceed \$80,000. Councilmember Derasary seconded the motion. The motion passed 5-0 aye with Councilmembers Jones, Derasary, Knuteson-Boyd, Duncan and Guzman-Newton voting aye.

Canvass of the City of Moab General Election:

Discussion: Councilmember Jones asked whether Utah County would release the cast vote record. Recorder Johnson stated the Lieutenant Governor's office prohibits that release.

Motion and Vote: Councilmember Knuteson-Boyd moved to accept the election result from the City of Moab General Election recount held on December 7, 2021. Councilmember Guzman-Newton seconded the motion. The motion passed 5-0 aye with Councilmembers Jones, Derasary, Knuteson-Boyd, Duncan and Guzman-Newton voting aye.

2022 Meeting Schedule—Approved

Motion and Vote: Councilmember Knuteson-Boyd moved to approve the 2022 City Council Meeting Schedule. Councilmember Duncan seconded the motion. The motion passed 5-0 aye with Councilmembers Jones, Derasary, Knuteson-Boyd, Duncan and Guzman-Newton voting aye.

2022 Holiday Schedule—Approved

Motion and Vote: Councilmember Knuteson-Boyd moved to approve the City of Moab 2022 Holiday Schedule. Councilmember Jones seconded the motion. The motion passed 5-0 aye with Councilmembers Jones, Derasary, Knuteson-Boyd, Duncan and Guzman-Newton voting aye.

Approval of Bills:

Motion and vote: Councilmember Knuteson-Boyd moved to approve the bills against the City of Moab in the amount of \$1,086,658.77. Councilmember Jones seconded the motion. The motion passed 5-0 with Councilmembers Jones, Duncan, Guzman-Newton, Derasary, and Knuteson-Boyd voting aye.

Adjournment: Councilmember Jones moved to adjourn the meeting. Councilmember Derasary seconded the motion. The motion passed unanimously and Mayor Niehaus adjourned the meeting at 9:54 p.m.

APPROVED: 
Emily S. Niehaus, Mayor

ATTEST: 
Sommar Johnson, City Recorder

**MOAB CITY COUNCIL MINUTES
REGULAR MEETING
January 11, 2022**

Moab City Council held its Regular Meeting on the above date. Consistent with provisions of the Utah Open and Public Meetings Act, Utah Code Annotated § 52-4-207(5)(a), the Moab City Council Chair issued written determinations supporting the decision to convene electronic meetings without a physical anchor location. Audio is archived at www.utah.gov/pmn and video is archived at <https://www.youtube.com/watch?v=JnyOk4oIhuc> and <https://www.youtube.com/watch?v=bEqOkiBOer4>.

Attendance and Call to Order:

Mayor Joette Langianese called the meeting to order at 6:03 p.m. Councilmembers Tawny Knuteson-Boyd, Rani Derasary, Kalen Jones, Jason Taylor and Luke Wojciechowski attended remotely. City staff participating included Acting City Manager Carly Castle, Finance Director and Acting Deputy Manager Ben Billingsley, Senior Project Manager Kaitlin Myers, Communications and Engagement Manager Lisa Church, Assistant Police Chief Bradon Palmer, Police Sergeant Monty Risenhoover and Recorder Sommar Johnson.

Citizens To Be Heard:

Rhianna Medina, Director of the Moab Valley Multicultural Center, stated she was glad to see the Walnut Lane project on the agenda. She encouraged Council to pursue affordable housing on Walnut Lane and stated the housing shortage is the worst she has seen. She offered her support to pursue the project. A brief exchange took place regarding potential grant funding.

Consent Agenda:

Motion and Vote: Councilmember Knuteson-Boyd moved to approve a consulting contract with Red Hill Strategic, Inc. for an amount not to exceed \$40,000; confirmation of reappointment of Jessica O'Leary to the Moab City Planning and Zoning Commission for a full three-year term that ends December 31, 2024; and approval of minutes for the December 14, 2021, Regular Meeting. Councilmember Jones seconded the motion. The motion passed 5-0 aye