

City Council Staff Report



Applicant:

NA

Location:

NA

Prepared By:

Steven Lord, Public
Works Director

Public Hearing:

No

Attachments:

Water Rights Master Plan
Executive Summary

REQUEST

Adopt the Water Rights Master Plan.

BACKGROUND & DESCRIPTION

The purpose of this master plan is to provide documentation of existing Mapleton City water rights, reliable water source supplies, and the reasonable future water requirements of the City through the year 2061. Current Utah Code allows for the protection of the City's water rights from forfeiture according to statute, provided the City can show the water will be needed in the next 40 years.

This report satisfies the requirements of a 40-Year Plan as specified in Utah Administrative Code Section R655-18-4 and included in Appendix A. The City can submit this report to the Division of Water Rights (UDWRi) when required to show reasonable future water requirements and a 40-Year Plan. When submitting a 40-Year Plan, regulation states each part of the Plan must be up-to-date and current.

The report becomes the water rights action plan going forward, and it is important that the City track actionable changes to their water rights, sources, etc., so that the Plan can be easily updated as actions are implemented, or a supplement to the plan prepared, for future required submission.

The 40-Year Plan becomes the water asset road map for the City as it pertains to water rights and water supply.

EVALUATION

The sections within the Master Plan address the following topics:

1. Municipal Spring/Creek Water Rights
2. Spring/Creek Rights Historical Supply
3. Municipal Well Water Rights
4. Future Municipal Water Rights
5. Imported Water
6. Water Source Cost Analysis
7. Reliable Water Supply
8. Water Right Tracker
9. Water Requirements and Supply
10. Conclusions and Recommendations

RECOMMENDATION

Adopt the Water Rights Master Plan.

RESOLUTION NO. 2022-

A RESOLUTION OF THE CITY OF MAPLETON, UTAH ADOPTING THE WATER RIGHTS MASTER PLAN

WHEREAS, Mapleton City is required to maintain a 40-year master plan for water rights, and

WHEREAS, Mapleton City needs to understand and maintain accurate records of all water rights in the city, and

WHEREAS, development continues to happen and the city must require developers to dedicate usable water rights to the city, and

NOW THEREFORE, BE IT RESOLVED by the City Council of Mapleton, Utah to adopt the Water Rights Master Plan.

This resolution adopted this 2nd day of November, 2022 by the City Council of Mapleton City, Utah.

Dallas Hakes
Mayor

ATTEST:

Camille Brown
City Recorder

EXECUTIVE SUMMARY

The purpose of this report is to provide documentation of existing Mapleton City water rights, reliable water source supplies, and the reasonable future water requirements of the City through the year 2061. Current Utah Code allows for the protection of the City's water rights from forfeiture according to statute, provided the City can show the water will be needed in the next 40 years.

This report satisfies the requirements of a 40-Year Plan as specified in Utah Administrative Code Section R655-18-4 and included in Appendix A. The City can submit this report to the Division of Water Rights (UDWRi) when required to show reasonable future water requirements and a 40-Year Plan. When submitting a 40-Year Plan, regulation states each part of the Plan must be up-to-date and current.

The report becomes the water rights action plan going forward, and it is important that the City track actionable changes to their water rights, sources, etc., so that the Plan can be easily updated as actions are implemented, or a supplement to the plan prepared, for future required submission. The 40-Year Plan becomes the water asset road map for the City as it pertains to water rights and water supply.

40-YEAR WATER RIGHTS PROJECTION

The water demand in 2061 for Mapleton is projected to be 10,841 acre-feet as shown in Table E-1, based on population projections out to 2061. The reliable water supply from municipal water rights and irrigation shares currently held by the City is approximately 7,907 acre-feet. The reliable water supply is a conservative estimate that only includes the groundwater water rights up to a safe yield pumping of the aquifer in the Mapleton area of 4,700 acre-feet and the reliable supply of surface water from Maple Creek, springs in Maple Canyon and irrigation company shares that can supply the City's PI system and/or drinking water system.

Table E-1: Reliable Water Supply vs. Projected Water Use

Supply vs. Demand	Volume (acre-feet)
Projected Water Demand	10,841
Reliable Water Supply ¹	7,907
Amount Needed by 2061	2,934

¹Reliable water supply does not include East Bench Canal Company River shares.

According to the comparison of reliable supply and water demand, the City needs an additional 2,934 acre-feet of water rights with reliable supply to meet projected demands.

DRINKING WATER VS PI WATER FUTURE NEED

Mapleton operates separate drinking water and pressurized irrigation systems. It is important to consider the needs of each system separately assuming Mapleton will continue to prioritize using and constructing separate systems, in addition to the City as a whole. As shown in Table E-2, the drinking water supply meets the projected water demand in 2061. The City will require 3,981 acre-feet in their pressurized irrigation system (PI system) to meet their needs in 2061. If excess water from drinking water sources is used in the PI system, the additional source needed for the PI System is reduced to 2,934 acre-feet. The conclusions of this evaluation rely on Mapleton continuing to construct the PI system as outlined in the Master Plan.

Table E-2: Reliable Water Supply vs. Projected Use for Each Water System

Supply vs. Demand	Drinking Water System Volume (acre-feet)	Pressurized Irrigation System Volume (acre-feet)	
		Assuming No Excess Drinking Water Supply Used in PI System	Assuming Excess Drinking Water Supply Used in PI System
Projected Water Demand	3,895	6,946	6,946
Reliable Water Supply ¹	3,895	2,965	4,012
Additional Source Needed:	0	3,981	2,934

¹Reliable water supply does not include East Bench Canal Company River shares.

The PI system needs more water supply to meet projected future demand. It is anticipated that the deficit in reliable water supply can be overcome from a combination of the transfer of additional MIC, MID, and EBCC Strawberry shares to the City as agricultural land develops within the City's boundaries. A cost analysis of water sources indicates MIC, MID, and EBCC Strawberry water may be some of the least expensive sources for secondary water in the future. It is of primary interest to the City that the Strawberry water they hold and continue to acquire can be considered municipal water in the future.

East Bench Canal Company River (EBCC River) shares are supplied by water from the Spanish Fork River. The City is currently unable to use these shares in their PI system. To use these shares, the City must construct a pond and pump station to allow the water to enter their PI system. This also appears to be a cost-effective alternative for the City to acquire additional surface water for their PI system; however, the availability of this water varies greatly depending on the water year.

Rehabilitation of the springs in Maple Canyon is anticipated to yield more water but not necessarily more than the reliable supply of Maple Creek and the springs in Maple Canyon combined that is already assumed in the reliable water supply in Tables 10-3 and 10-4. The amount of water assumed to be reliable supply on the City's water rights for Maple Creek is not currently being used by the City and the supply of water for the spring and creek systems in the canyon appear to be connected.

Mapleton has decided to defer use of the contracted 607 acre-feet of ULS water that is available to the City through its membership in South Utah Valley Municipal Water (SUVMWA) with delivery through the Mapleton-Springville Lateral Pipeline. This water is not needed now but continued deferment should be evaluated annually. If the ULS water is not needed, it can be reallocated to other member cities in SUVMWA. Although this is a reliable, clean source of delivered water available to Mapleton, it is also the most expensive.

To meet future demand, it is also possible that the groundwater may be able to support more than 4,700 acre-feet as predicted from modeling of the aquifer. For this reason, it is reasonable for Mapleton to continue to own and acquire groundwater water rights in excess of 4,700 acre-feet with historical beneficial use within the City's boundaries to about 5,230 acre-feet, the estimated pumped withdrawal in 2018 for the Mapleton Area that included withdrawals from private well owners and the City. The aquifer, however, should be carefully monitored along with neighboring communities if this were to take place.

In general, this analysis does not include the potential scenario that one or more of the major

water sources is rendered unusable. For example, in the summer of 2021, contamination of the springs caused a shut-down of all spring production to the drinking water system. Individual water systems can also be affected by terrorist activities, accidental chemical spills, well equipment failure, well contamination, forest fires, impacts involving direct water contamination or stream turbidity, water treatment plant failures, earthquakes, etc. Mapleton City should consider system interconnections, constructing redundant facilities, and other measures to provide backup supply in emergency situations.

CHAPTER 11 CONCLUSIONS

RECOMMENDATIONS

Mapleton City has a clear need to protect its existing water rights and acquire future water rights to meet anticipated demands through at least the next 40 years. To that end, HAL offers the following recommendations:

Table 11-1: MAPLETON CITY WATER RIGHTS MASTER PLAN RECOMMENDATIONS

Chapter 2 - Municipal Spring/Creek Water Rights Recommendations	Time Frame
Work with the Utah Division of Water Rights(UDWRi) to clarify water use groups for City water rights in Maple Canyon.	Now
Meter water in Maple Creek for future planning efforts and meter any diversion into the City's secondary water system and report use to the UDWRi.	April 2023
Review and update City records for Water Right 51-5786 according with the next addendum to the Proposed Determination(PD). File change applications on City Maple Canyon water rights to add points of diversion in Maple Canyon if needed.	After new PD Addendum Published
Maintain communication with East Mapleton Irrigation Group(EMI Group) and address their interest in future access to municipal water for outdoor watering needs.	Ongoing
It is recommended that the City use their priority water rights in Maple Canyon to their full extent through rehabilitation of their springs and access to Maple Creek.	Now
Chapter 3 - Spring/Creek Water Rights Supply Recommendations	Time Frame
Metering and report the flow from the springs separately for City records and when reporting the use to the UDWRi.	January 2023
The years 1990-1997, 2001-2004 and 2007 appear to have accounting errors as the sum of the monthly volumes does not total the annual volume. It is recommended to identify the errors and correct them with the UDWRi	Now
HAL recommends considering additional springs in Maple Canyon, such as those on Mapleton Irrigation Company's(MIC's) water rights, which may be available for development and obtaining water rights.	May 2023
It is recommended that the City determine a design year upon which to base their planning decisions.	January 2023
Chapter 4 – Municipal Well Water Rights Recommendations	Time Frame
Take all necessary actions to preserve existing water rights. Such actions include updating ownership records with the UDWRi, filing change applications to maintain correct points of diversion, and filing proof of beneficial use or extension of time requests as dictated by Utah law.	Ongoing

Determine depletion values from water use within the municipal water systems and maintain records of these values.	Now
Maintain share certificates that are the basis for City water rights. This means the certificate must be in the name of the City, records are up to date with the canal company, annual assessments are paid, and carrier water, return flows and storage requirements are maintained as directed by the Utah Lake and Jordan River Commissioner.	Ongoing
Check UDWRi files for Well Abandonment Records. Notify prior owners of private wells if no abandonment record is on file.	Now
Keep a record of proof due dates and submit a proof or extension to the UDWRi prior to that date.	Now
Continue to submit an annual report to the Water Use Program of the UDWRi.	January 2023
Add Crowd Canyon Well to future change applications for municipal water use in Mapleton City. Discuss Ensign-Bickford Contamination mapping on the Groundwater Management Plan for Area 51 with the UDWRi if needed.	Now
HAL recommends that Mapleton City contact the UDWRi concerning the State Engineer's order on approved Change Application 57-10462 (a40457) to remove 3 shares of East Jordan Irrigation Company(EJIC) stock and City ownership from Water Right 51-7278 (a23095).	Now
HAL recommends that Mapleton City contact the UDWRi concerning the State Engineer's order on approved Change Application 57-10462 (a40457) to remove 3 shares of EJIC stock and City ownership from Water Right 51-7278 (a23095).	Now
Chapter 5 – Future Municipal Water Rights Recommendations	Time Frame
Maintain irrigation company shares held by the City, following recommended best practices outlined in the report. This includes share certificates that are the basis for City water rights.	Ongoing
Exchange shares held by the City from irrigation companies that don't include Mapleton City within their company service area boundaries on their base water rights. These include East Jordan Irrigation Company and Utah and Salt Lake Canal Company shares.	Now
File change applications on Mapleton Irrigation Company(MIC) shares held by the City to change the use to municipal.	Now

Attend regular shareholder meetings in MIC and communicate City interests.	Ongoing
HAL recommends that Mapleton is involved in future discussions with other South Utah County cities to negotiate an agreement with CUWCD and the Bureau of Reclamation to allow SVP shares be approved for municipal use.	Ongoing
Work with East Bench Canal Company(EBCC) to acquire Strawberry shares for delivery through the Mapleton-Springville Lateral by agreement with Strawberry Water Users Association and the Federal government.	Now
Do not accept Big Hollow Irrigation Company shares as water development credit.	Ongoing
There are discrepancies between the City's records and irrigation company records of number of shares held by the City. HAL recommends that the City work with MIC, EBCC, and MID to confirm the number of shares in their name.	Now
File a change application on Water Right 55-11916 to propose a change from a private well for irrigation to City wells for municipal use.	Now (Priority)
Submit applications of Proof of Beneficial Use on approved change application to the UDWRi for as many applications as reported use of City water allows. Work with the UDWRi to determine the best approach.	Now
Review water rights owned by others in Table 5-5 which have approved change applications for municipal use in Mapleton City. Decide if the change application should be withdrawn, pursued for City ownership, or extended.	Now (Priority)
Chapter 6 – Imported Water Recommendations	Time Frame
HAL recommends that Mapleton is involved in future discussions with other South Utah County cities to negotiate an agreement with CUWCD and the Bureau of Reclamation to allow SVP shares be approved for municipal use. (Same as Chapter 5)	Ongoing
It is recommended that the City join and participate in the Mt. Nebo Water Agency to protect the City's interests in regional water management discussions and efforts.	Ongoing
Participate in South Utah Valley Municipal Water Association (SUVMWA) to ensure that the interests of Mapleton City are represented.	Ongoing
Chapter 7 – Water Source Comparative Cost Recommendations	Time Frame
Consider infrastructure, such as a well, to allow additional groundwater to enter the PI system.	April 2024

Rehabilitate the springs in Maple Canyon to allow increased production and protection from contamination for continued use in the drinking water or PI system.	April 2023
Consider infrastructure to allow Maple Creek flow to intentionally enter the PI system.	April 2024
Consider new infrastructure to deliver EBCC River shares. Delivery would require building a new PI pond near EBCC's canal system with a pump station.	Now
Maximize the use of free irrigation water while it is available at Mapleton No. 1 Well by reducing the pressure of the PI pond pumps.	April 2023
Avoid running wells occasionally and for short periods of time.	Ongoing
Review comparative costs listed in Table 7-1 and 7-4 when making decisions on future water sources.	Ongoing
Chapter 8 – Reliable Water Supply Recommendations	Time Frame
Local groundwater rights that have been used in the past seven years within Mapleton's boundaries should be considered for transfer to the City if an approved change application allows municipal use from City wells.	Ongoing
The City should accept MIC, MID, and EBCC Strawberry shares if the Strawberry shares can be delivered through the Mapleton-Springville Lateral.	Ongoing
EBCC River shares can be considered if the City plans to connect their PI system to EBCC delivery system. If not, the shares should be exchanged for MIC, MID, or EBCC Strawberry shares from another city.	Ongoing
See Table 8-2 for recommended share values for City water credit. No other irrigation shares should be accepted.	Ongoing
Continued coordination with SUVMWA cities is recommended to ensure that Mapleton's best interests are represented.	Ongoing
Chapter 9 – Water Right Tracker Recommendations	Time Frame
It is recommended that the City maintain existing water rights and shares owned by the City using the Water Right Tracker as well as maintain their share certificate database.	Ongoing
Chapter 10 – Water Requirements Recommendations	Time Frame
Evaluate values for water requirements as part of the next water resources master planning efforts for the City.	January 2023
Defer use of Central Utah Project (CUP) water available through SUVMWA. Reevaluate deferment of this water annually.	January 2023