

Monroe City

"Little Green Valley"

Monroe City Water Conservation Plan Update 2019

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Water Superintendent	Rodney Wanlass	435-527-4621
City Recorder	Allison Leavitt	435-527-4621

1.0 Introduction

In response to the rapid growth occurring in the state of Utah, our local citizens and government leaders are becoming concerned for the future cost and availability of our water supply. A similar concern has been expressed by the state legislature in the Water Conservation Plan Act (House Bill 71) passed and revised in the 2004 legislative session (section 73-10-32 Utah Code Annotated). This water conservation plan is written to address the concerns of leaders and citizens of both Monroe City and the State of Utah Water Conservation Plan Act.

2.0 Background Information

Monroe City is located in South Central Utah, approximately 10 miles south of Richfield in Sevier County. Monroe City is well known for its historical heritage, pioneer legacy and its beautiful green valley. Today, Monroe is a rural farming community set at the base of the Monroe Mountain located in the Fishlake National Forest.

Monroe City had a 2010 Census population of 2275. An estimated population of approximately 2677 in 2018 reflects that the population will continue to grow.

Monroe City Water Department currently has 952 culinary water connections and 821 secondary water connection (see table 2-1).

Monroe is currently experiencing mostly residential growth. Our system currently has a surplus capacity at this time, ongoing growth may eventually strain the water supply. However, through planning and efficient use of our water supplies, these increased needs can be met.

Table 2-1
Water Connections

Water Customer Type	Number of connections
Residential	919
Commercial	19
Institutional	8
Agriculture	5
Wholesale	1
Secondary Water	821

3.0 EXISTING RESOURCES

3.1 Supply

Monroe City Water Department is serviced by two culinary water right numbers filed with the State of Utah Water Rights Division. (see table 3-1-1) Monroe City Irrigation Shares. (see table 3-1-2) Water supply and use. (see table 3-1-3)

**Table 3-1-1
Culinary Water Supply**

Water Right Number	Source	Acre-Feet	Acre Feet Use 2018
63-2785	Cold Spring	564	310.7
63-2508	Well	723	60.2
Sold to South Monroe Culinary	Combined		53.5

**Table 3-1-2
Monroe City Irrigation Shares Supply**

SOURCE	SHARES	AVERAGE ACRE-FEET/SHARE	TOTAL ACRE-FEET	TOTAL USE 2018
Monroe Creek	1869	1.88	3515.00	3515.10
South Bend	202.63	2.15	435.65	319.2
Piute	2.0	2.16	4.32	0
Monroe Irrigation	40.00	3.5	140.0	111.3
Total			4094.97	3945.60

The Cold Spring is the city’s main culinary source. The historic reported average use over the last ten years is 347-acre feet per year. Typically, the lower flows have occurred in the spring and early summer months.

The recharge area for the Cold Spring is located high in the mountains on U.S. Forest service property. Most of the recharge area is well managed against contaminant infiltration because of the its location adjacent to Forest Service Land.

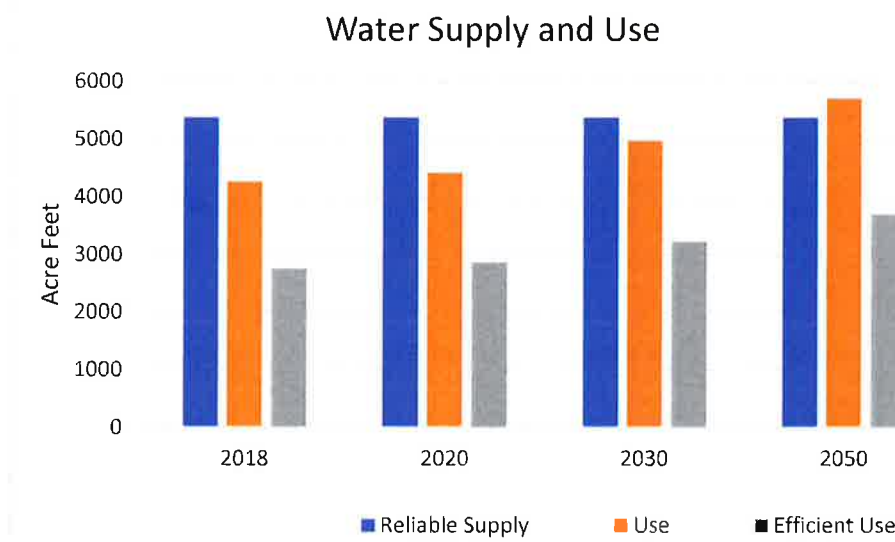
A second source of culinary water, which provides a small portion of the City’s water, is the groundwater well. The well is capable of pumping 1,400gpm. The well use is higher during time
Monroe City Water Conservation Plan
Update 2019

of drought conditions and Cold Spring maintenance. Cold Spring continues to be the main supply for the city, historically producing 98% of the overall total of the reported use over the past ten years. The City well produces 2% of the overall use.

Monroe City’s annexation policy requires water rights to be surrendered to Monroe City before annexation will be approved. This helps to ensure that there will be adequate water available for the citizens of the City in the future.

Monroe City has a secondary water system that provides outside watering to approximately 81% of the residential connections in the City from our Monroe Creek water right. To supplement the flow from Monroe Creek during times when the stream flow is inadequate, Monroe City pumps water from canal shares into the pressurized irrigation system. The City owns shares shown in table 3-1-2.

**Table 3-1-3
Water Supply and Use**



Monroe City annual reliable source of water comes from our culinary right and additional irrigation water rights. The use is calculated by metered and weir readings and increased at the percentage of population growth (provided by Utah Department of Natural Resources). Efficient use was calculated by estimated of outdoor acres (15,000 X 1.84acre feet per year), increased at the same population growth. See table 3-1-3

4.0 Water Measurement & Billing

Monroe City water sources are measured either by meter or weir. (see table 4-1)

**4-1
Water Measurement**

Source	Meter Type
Monroe Culinary Well	Meter
Cold Spring	Meter
Monroe Creek (secondary water)	Weir
South Bend Canal (secondary water)	Meter

Monroe City individual culinary water connections are metered and are read and billed each month. Monroe City secondary water connections do not currently have meters at point of delivery. Secondary water use is determined by input at the irrigation pond and consist of a city-wide use not by connection.

5.0 System Water Loss Control

With are current meters, reports are generated alerting the Utility Clerk of a possible leak. When a leak is detected on the property owner's side, they are contacted and offered a reduced water usage billing if the leak is repaired immediately. If the water leak is on the City side Monroe City Water department repairs the leak immediately.

In 1999 Monroe City Water department replaced old/outdated culinary distribution lines. Monroe City has recently replaced nearly 10,000 feet of old/outdated culinary distribution lines to alleviate leaks.

On average Monroe City has a 700,000 gallons loss per year. The department has made detecting and repairing leaks a priority in their daily maintenance routine.

6.0 Increasing Rate Structure

Residential Rates				
Base			\$	21.00
Tier 1	0	5000	\$	1.20
Tier 2	5000	30000	\$	1.35
Tier 3	30000	9999999	\$	1.55

Monroe City adopted the tier rate schedule in 2015 to promote conservation and follow state law.

7.0 Water Use

Monroe City's water usage for the past ten years is provided in table 7-1 as far as data is available. System overflow from the springs occurs upstream of the main system meter and there are no leaks in the system at this time. All water that flows through the main culinary water meter is delivered to the users. Irrigation is estimated based on the calculated number of connections Table 7-2

**Table 7-1
Use by sector
Acre-Feet**

Year	Residential	Commercial	Institutional	Stock	Wholesale	Population	Total Acre Feet
2018	264.95	22.12	4.7	23.2		2275	314.97
2017	248.19	20.33	4.3	23.41		2275	296.23
2016	279.01	24.59	5.13	19.51		2250	328.24
2015	184.13	28.44	2.43	18.15		2390	233.15
2014	189.27	33.56	21.6	4.61	48.86	2256	297.90
2013	223.36	33.28	26.92	3.61	47.61	2256	334.78
2012	219.8	37.34	23.22	5.91	52.26	2256	338.53

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2011	217.54	32.29	21.81	8.57	40.58	1875	320.79
2010	212.5	36.04	22.85	12.31	46.6	1875	330.3
2009	241.213	32.54	7.27	13.69	46.9	1875	341.61
2008	378.61	41.36	25.48	43.05	45.02	1875	533.52
2007	369	39.69	23.48	44.61	48.12	1875	524.90
2006	446.78	54.78	2	40.13	43.56	1875	587.25
2005	455.95	51.39	20.87	47.56	43.9	1875	619.64

**Table 7-2
Secondary Water Use
Acre Feet**

Year	Connections	Usage
2018	816	3945
2017	816	4613
2016	812	4701

**Table 7-3
Per Capita Water Use**

	Indoor (Winter Use)	Potable (Outdoor Use)	Total Potable	Non- Potable (secondary)	Total
Residential	39	51	90	1316	1406
Commercial	6	1	7	N/A	7
Institutional	2	1	3	N/A	3
Agriculture	2	1	3	N/A	3
Wholesale	8	4	12	N/A	12
Total	57	58	115		1521

Per Capita water use in gallons per capita per day (GPCD) by type and use: (Total water deliveries/365/total service area population = GPCD)

Monroe City total potable usage is 115 gallons per capita per day (GPCD). The state average was 178 in 2018. This shows that Monroe City potable is well below the state average. See table 7-3

See Appendix A for Water Conservation Plan Graph

8.0 Conservation Practices

The City Council and staff of Monroe City have identified and prioritized several problems since the last conservation plan was written and during the investigative phase of preparing this report the following problems were identify.

8-1 Problems Identified

- Although an ongoing educational effort is being made in the City through periodic conservation information in our newsletter, the general public lacks understanding of landscaping water requirements, efficient water use habits and practices. Very few water users know how much water is required to maintain healthy landscaped areas and how to consistently use water efficiently outdoors. Most water use practices, whether for indoor use or irrigation, are based on convenience rather than plant needs and water supply considerations.
- Efficiency of water use practices on City-owned property could also be improved.
- Monroe City currently has many radio-read meters which do not transmit the data to the computer, so usage is being estimated throughout the winter months and read only during the summer months. Replacing these non-working meters would enhance the culinary water revenue to the City and would make citizens more aware of the actual amount of water used.

8-2 Conservation Goals and Solutions

Monroe City is in the Sevier River Basin which has goal of 20% reduction in water use from 2015-2030. Monroe City has set the following smaller goals to help reach the 20% reduction in water use.

1. Continue the ongoing public education program. Although this effort does not appear to be showing significant results at this time, citizen awareness and water use during drought years was generally down and efforts toward more efficient use were observed.

Monroe City will support state and local water education programs in local schools. It is expected that as time passes young adult citizens that have been continuously exposed to statewide. "Slow the Flow" advertising during their youth will be more aware of the need to conserve water, and act accordingly.

2. Maintain a financially stable water system with conservation in mind. Continue to monitor and track the rates charged to ensure that the City's system is operated responsibly. As rate increases are required, overage tiers that penalize excessive use will be targeted first, rather than simple base rate increases.
3. Watering of City Property. Monroe City will strive to be good examples to our citizens in how we water our parks and cemetery.
4. Upgrade water to meters working radio read. Monroe City is budgeting enough money for the next three years to replace non-reading radio read meters. This will provide the City and users an accurate usage amount.
5. Monitor usage reports to detect leaks. Monroe City will continue to use billing software that alerts utility billing staff of excessive usage. When an excessive usage is detected users is notified so that leak can be repaired immediately
6. Enforce ordinance that prohibits general waste of water and watering restrictions. Monroe City will educate citizens of our ordinance prohibiting misuse of water. And when necessary enforce our watering restriction ordinance.

8-3 Conservation Committee Members

Mayor

City Councilmembers

Staff:

Public Works Director

Water Superintendent

Parks/Cemetery Superintendent

City Recorder

8-4 Evaluation of water conservation

To ensure the goals outlined above are reached, appropriate tasks will be determined, responsibility assigned with the logical person or department and a timeline set for completion of each task. The City Council has the responsibility for providing funding for the measures outlined in this plan. The City Recorder and staff will be responsible, under the supervision and direction of the water department superintendent, to carry out necessary tasks within the appropriate time constraints.

8-5 Public Information, Education & Programs

Monroe City's current water conservation program is directed primarily at managing water shortages and providing useful materials to assist residents to use water more efficiently. Current measures include a water conservation ordinance and water education program for outdoor and indoor water use and a conservation-oriented water rate structure.

9.0 PERIODIC EVALUTAION

This Water Conservation Plan shall be updated and resubmitted to the Division of Water Resources as required to meet changing needs or in 2024 in accordance with the requirements of State Law. The resolution is attached as Appendix B.

Adopted this 14th day of January 2020



ATTEST:

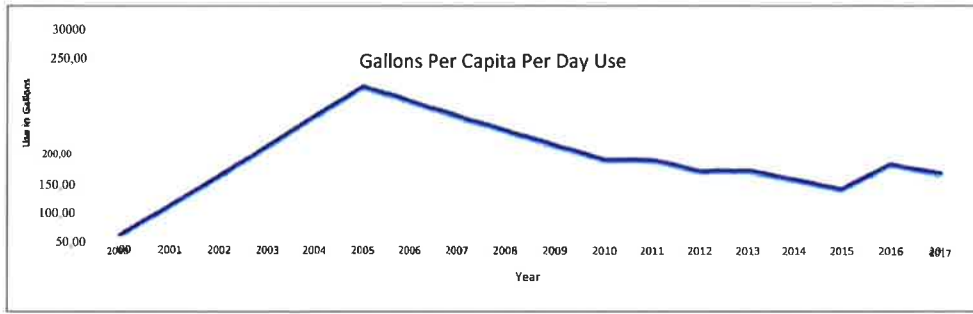
A handwritten signature in black ink, appearing to read "Johnny C. Parsons", is written over a horizontal line. Below the line, the name "Johnny C. Parsons, Mayor" is printed in a standard black font.

Johnny C. Parsons, Mayor

A handwritten signature in black ink, appearing to read "Allison H. Leavitt", is written over a horizontal line.

Allison H. Leavitt, City Recorder

APPENDIX A
Monroe City
Water Conservation Plan
Water Use Graph
2019



Calculator: Water Use in Gallons per Capita per Day
Enter data in blue and green cells in the table below.

Data reported to Utah Division of Water Rights on the annual Water Use Form <http://waterrights.utah.gov/wateruse/WaterUseList.asp>

Year	Population	Residential Use (acre-feet/year)	Commercial Use (acre-feet/year)	Industrial Use (acre-feet/year)	Institutional Use (acre-feet/year)	Secondary Use (acre-feet/year) Data reported to Water Rights	Total Use (acre-feet/year)	Convert from acre-feet to gallons	Convert from Year to Day	Calculate (gpd)	Data collected by system			Sum residential, commercial, industrial, and institutional, and secondary use	Multiply acre-feet by 325851.43 to change to gallons	Divide by 365 to change from year to day	Divide use in gallons per day by population
											Sum residential, commercial, industrial, and institutional, and secondary use	Multiply acre-feet by 325851.43 to change to gallons	Divide by 365 to change from year to day	Divide use in gallons per day by population			
2011	2275	248.19	20.30		4.30		272.79	88889012	243,531.54	107.05							
2010	2250	279.01	24.59		5.13		308.73	100600112	275,616.75	122.50							
2013	2390	184.13	28.44		2.43		215.00	70058057	191,939.88	80.31							
2014	2256	189.27	33.56		21.60		244.43	79647865	218,213.33	96.73							
2015	2256	223.36	33.28		26.92		283.56	92398431	253,146.39	112.21							
2012	2256	219.80	37.34		23.22		280.36	91355707	250,289.61	110.94							
2008	1875	217.54	32.29		21.81		271.64	88514282	242,504.88	129.34							
2010	1875	212.50	36.04		22.85		271.39	88432820	242,281.70	129.21							
2009	1875	455.95	51.39		20.87		528.21	172117984	471,556.12	251.50							
2000							0.00	0	0.00	0.00							

APPENDIX B
Monroe City
Resolution 1 01 2019
Updating and Amending Provisions
Of the
Monroe City Water Conservation Plan
2019

RESOLUTION 1-01-2019

MONROE CITY WATER CONSERVATION PLAN UPDATE

A RESOLUTION UPDATING AND AMENDING THE PROVISIONS OF THE MONROE CITY WATER CONSERVATION PLAN.

Section 1. Preamble

A. WHEREAS, Monroe City operates a culinary water system and pressurized secondary irrigation system; and

B. WHEREAS, the city council understands the pressing need to use water in a more efficient manner to allow for future sustained growth of the community;

Section 2. Ordaining Clause

NOW, THEREFORE IT IS ORDAINED BY THE MONROE CITY COUNCIL:

Section 3. The Monroe City Water Conservation Plan is hereby updated and amended as follows:


Section 4. Water Conservation Plan

The Water Conservation Plan of Monroe City, adopted on the 5th day of February, 1998, revised on the 11th day of January, 2005, revised and updated on this 12th day of January, 2010, revised and adopted on the 27th day of January, 2015 and this 14th day of January, 2020 is hereby adopted. The plan will be amended no less than every five years and will continue to play a vital role in the future development of Monroe City.

Adopted this 14th day of January 2020



ATTEST:


Johnny C. Parsons, Mayor



Allison H. Leavitt, City Recorder

APPENDIX C

Monroe City

05-01-2003

Ordinance Regulating Monroe City's

Irrigation Water System

2019

MONROE CITY
ORDINANCE # 05-01-2003
AN ORDINANCE REGULATING MONROE CITY'S
PRESSURIZED IRRIGATION WATER SYSTEM

WHEREAS, Monroe City desires to promote efficient pressurized irrigation practices for all residential and landscape irrigation; and

WHEREAS, promoting conservation of water through more efficient use is in the public interest and enhances the community's resources; and

WHEREAS, Monroe City has authority to adopt this ordinance pursuant to Utah Code Annotated 10-3-702 and hereby exercises its legislative powers in doing so;

NOW THEREFORE, be it ordained by Monroe City that the following ordinance be enacted:

1. Upon order of the Monroe City Water Department Head, when it is apparent that the pressurized irrigation water supply is not keeping up with demand, the following watering turn schedule is hereby adopted:

- * Properties East of 200 East shall water on Monday and Thursday
- * Properties East of 100 West and West of 200 East shall water on Tuesday and Friday
- * Properties West of 100 West shall water on Wednesday and Saturday

2. There shall be no watering on Sunday

3. This schedule shall remain in force until the end of the watering season or until the schedule is cancelled by order of the water department head, whichever occurs first.

4. The watering schedule does not apply in the following situations:

- a. New lawns that require frequent watering during the first 30 days after planting
- b. Short cycles when testing, inspecting or maintaining a watering system
- c. Other situations as permitted in writing by a city official

5. Violations of the provisions of this ordinance are deemed as infractions, punishable as follows:

- a. First offense: a written warning issued by Monroe City
- b. Second offense: \$25.00 fine
- c. Third offense and subsequent offenses: \$50.00 fine
- d. Fines levied must be paid in 30 days or the irrigation water risers shall be capped until they are paid.
- e. Each day such violation is committed shall be a separate offense and shall be punishable as such.

6. This ordinance shall be effective as of May 6, 2003.

APPROVED AND ADOPTED THIS 6th DAY OF MAY 2003

MONROE CITY

ATTEST:

By: _____

R. Craig Mathie, Mayor

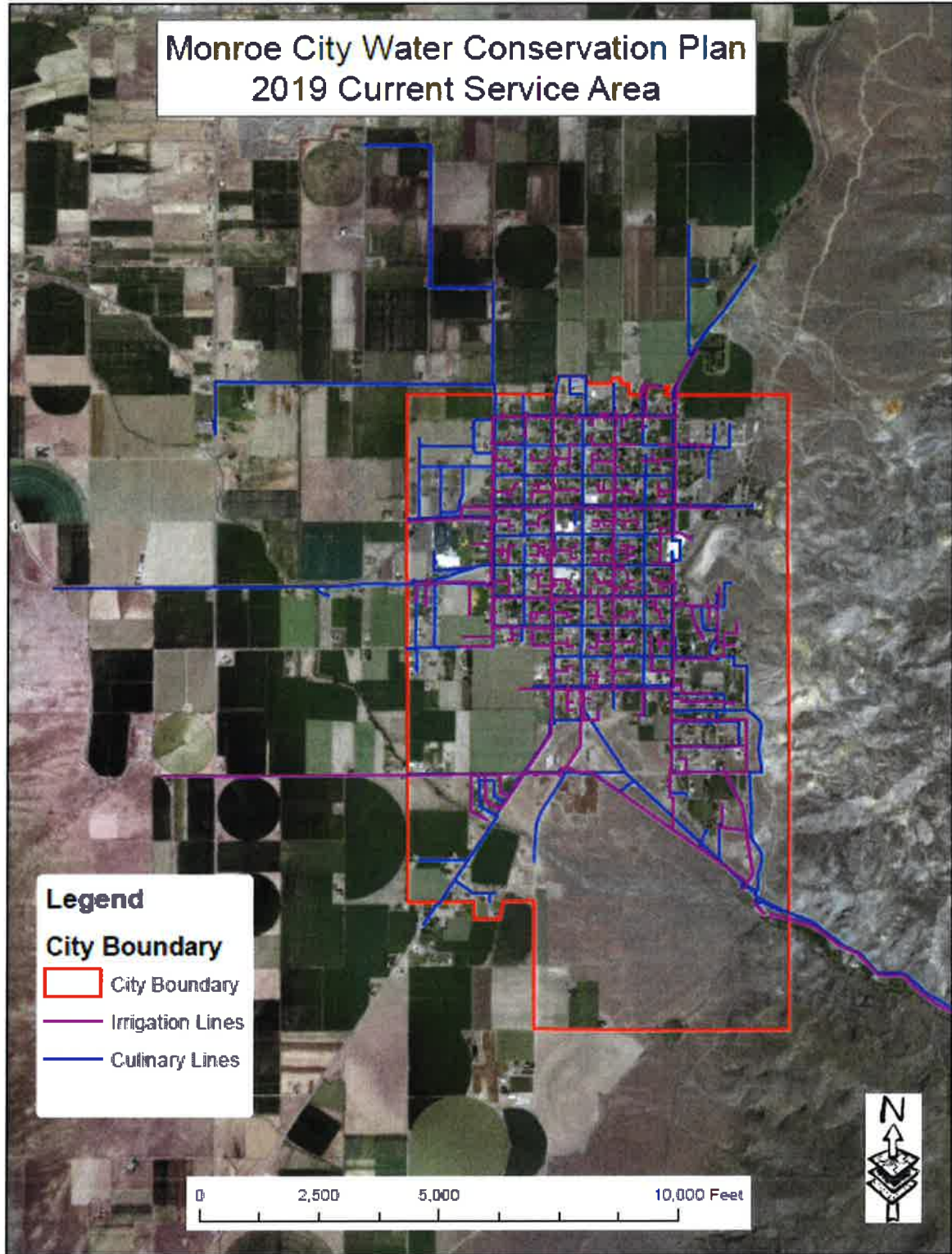
By: _____

Emalee H. Curtis, Recorder

Monroe City Water Conservation Plan
Update 2019

APPENDIX D
Monroe City
Water Service Area
2019

Monroe City Water Conservation Plan 2019 Current Service Area





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Entity: Monroe

Body: [City Council](#)

Subject: Business

Notice Title: 1 14 2020 Monroe City Public Meeting

Notice Type: Notice, Meeting

Event Start Date & Time: January 14, 2020 07:00 PM

Description/Agenda:

Public Meeting to adopt Resolution 1 01 2020
Monroe City Water Conservation Plan Update

Notice of Special Accommodations:

In compliance with the Americans with Disabilities Act, individuals needing special accommodations (including auxiliary communicative aids and devices) during this meeting should contact Allison Leavitt, 435-527-4621 at least 24 hours prior to the meeting.

Notice of Electronic or telephone participation:

YES

Other Information

This notice was posted on: December 17, 2019 04:53 PM

This notice was last edited on: December 17, 2019 04:53 PM

Board/Committee Contacts

Member	Email	Phone

[Please give us feedback](#)

Meeting Location:

10 N MAIN
MONROE , 84745

[Map this!](#)

Contact Information:

Allison Leavitt
monroecity@msn.com (435)527-4621

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**RESOLUTION 1-01-2020
MONROE CITY WATER CONSERVATION PLAN UPDATE**

A RESOLUTION UPDATING AND AMENDING THE PROVISIONS OF THE MONROE CITY WATER CONSERVATION PLAN.

Section 1. Preamble

A. WHEREAS, Monroe City operates a culinary water system and pressurized secondary irrigation system; and

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Section 2. Ordaining Clause

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Section 4. Water Conservation Plan

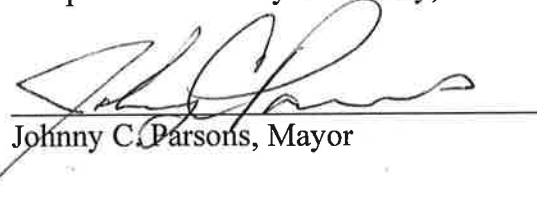
The Water Conservation Plan of Monroe City, adopted on the 5th day of February, 1998, revised on the 11th day of January, 2005, revised and updated on this 12th day of January, 2010, revised and adopted on the 27th day of January, 2015 and this 14th day of January, 2020 is hereby adopted. The plan will be amended no less than every five years and will continue to play a vital role in the future development of Monroe City.



ATTEST:


Allison H. Leavitt, City Recorder

Adopted this 14th day of January, 2020


Johnny C. Parsons, Mayor