

GUNNISON CITY WATER CONSERVATION PLAN

Project:

**Gunnison City Water Conservation
Plan**

Gunnison City

Project Number: 8074V

Prepared For:

Gunnison City Council

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WATER CONSERVATION PLAN

Introduction

The Utah legislature revised a bill in 2004 requiring water agencies with more than 500 service connections to submit a water conservation plan to the Utah Division of Water Resources. The plans are to be updated every five years. This water conservation plan is prepared to meet the Utah Board of Water Resources requirements and to address the goals of Gunnison City. Water conservation is a key element to provide for Gunnison's future water needs. Conservation can delay the need for expensive water projects, preserve the environment, and save taxpayers money. Gunnison has more than 500 service connections, therefore it is necessary for the City to implement and revise their water conservation plan for it to remain effective and efficient. Updating this water conservation plan also opens opportunities to receive funding from a variety of funding agencies. This conservation plan explains the water source deficit Gunnison City withstands and outlines ways that Gunnison City can conserve their water.

Gunnison City's community is comprised of a variety of economic contributors that impact their water system. There are several industrial businesses and commercial businesses that supply jobs to the public. There is also an elementary school, middle school, and high school, as well as a prison that Gunnison supplies water to. The prison holds up to 1805 inmates. Agriculture is another aspect of the community that has a large influence on the city due to the longstanding relationships that residents have with the agricultural business.

Gunnison City recently had Ensign Engineering create a Water Master Plan for the City to ensure proper planning and development occurs in Gunnison. This water conservation report references information from Gunnison's Water Master Plan (see appendix for more information regarding Gunnison's Water Master Plan). In-depth discussions on codes, calculations, population and demand projections, etc. is included in the Water Master Plan.

1.0 Water Usage

1.1 Current Water Usage

The total source demand is the amount of water that the system requires from the sources in order to meet state codes. Gunnison's total source demand is currently 2,330,612 gpd or 1,618 gpm. This amount of source demand is calculated using the city's total Equivalent Residential Connections (ERCs) and total irrigated acres in accordance with state code R309-510. Between Gunnison City and the prison there are 2,716 ERCs which is multiplied by 800 gpd. That product is then added to the product of 32 irrigated acres and 4,881.6 gpd/irrigated acre, which equates to a source demand of 1,618 gpm. The city's current sources are only providing 68% of the required source demand. As Gunnison City continues to grow and the prison expands, this source deficiency will get worse.

In 2003 the need to for an increase of water source became evident when the main producer of water, Bartholomew Well, suddenly became inactive due to an equipment failure. The replacement parts were in California and didn't arrive for 5 days. The prison was quickly alerted

about the issue and took precautions, such as eating off paper plates, to reduce their water usage. Taking those precautions helped lower their water usage enough that they didn't deplete their fire flow storage. If the well went down today, the city and prison could be out of water in less than two days.

Figure 1.1.1 below represents where the water usages occur. The chart shows that only 4% of the water is used for industrial purposes, while 13% of the water is used for commercial and 35% is used for residential. According to the chart, the institutional category uses the 48% of the total water. That percentage is because Gunnison City includes the state prison in this category, along with schools, churches and other smaller users.

Figure 1.1.1 Yearly Water Usage Percentages

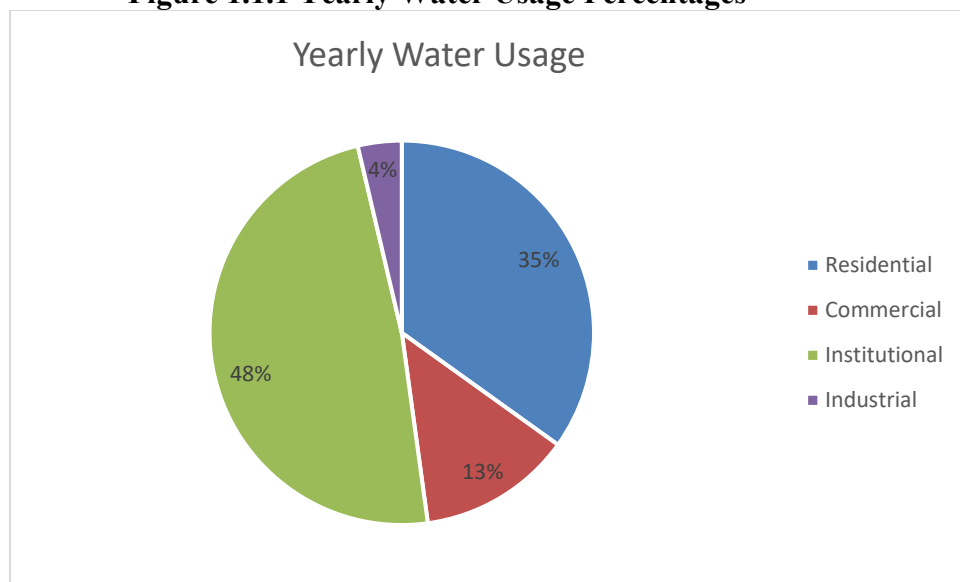
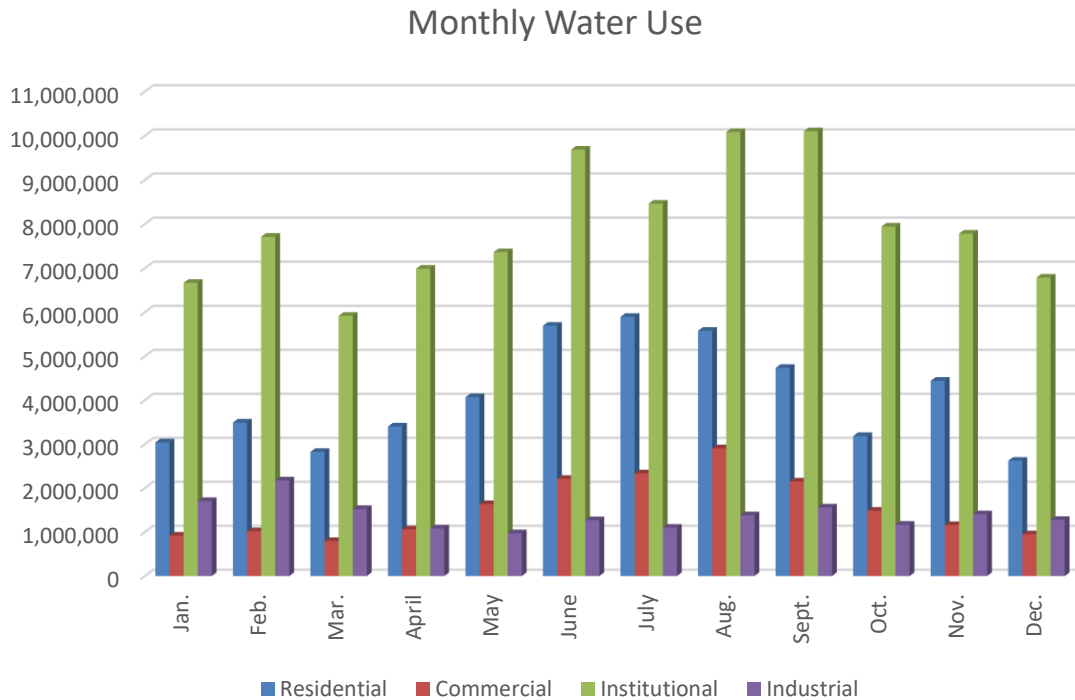


Figure 1.1.2 below represents the amount of water that was used each month by the different categories. A general trend for the categories of residential, commercial and institutional is that they use more water during the summer months and it tapers off during the winter months. This is largely due to events that take place in summer months such as irrigating grass, landscaping, and gardening. Also, people are more likely to be outside using water for recreation in the warmer months than in the winter.

Figure 1.1.2 Monthly Water Use



The purpose of this plan is to present a planning document for the City, which will guide its water conservation activities for the future to meet the state's 25% reduction requirement. Water conservation will benefit the City, the users, and the environment. The possible benefits include:

- Improved water service and more effective use of available water supply.
- Reduced operation and maintenance (O & M) costs, including lowering pumping costs.
- Development of additional water supply capabilities and diminished groundwater overdraft.
- Postponed need for new or expanded water supplies and infrastructure.
- Reduced impact of drought.

It is important to mention here that conservation can suppress water sales and lower water revenues. The revenue loss impacts can be mitigated by periodic rate adjustments if reduction occurs slowly. These adjustments would be handled similarly to operating cost increases and can be integrated into financial planning.

1.2 Future Water Usage

The future outdoor demand will inevitably increase by nature of how Gunnison City is growing and with the knowledge of an industrial park that is expected to be constructed near the location of the cemetery. The annual growth rate of acreage irrigated with culinary water was determined to be 0.8%. That growth equates to 45 total acres by the end of the 40-year planning period in 2063. This 40-year projection results in Gunnison City needing to provide 153 gpm or 220,230 gpd for outdoor use.

Figure 1.2.1 Future Source vs. Available Source

Demand Source Vs. Projected Available Source

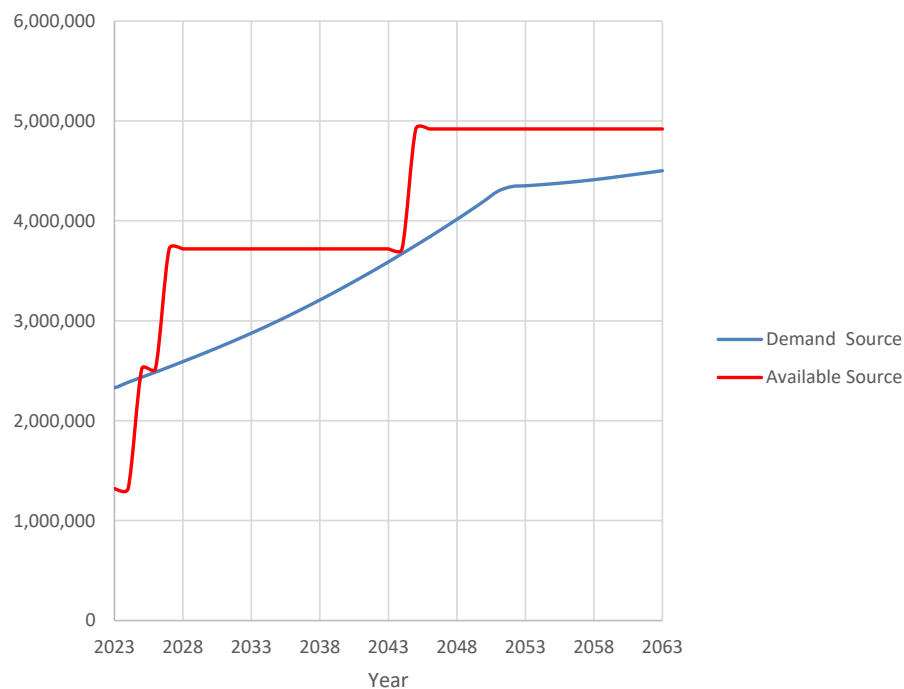


Table 1.2.1 Existing Total Requirements for Source Demand

Peak Day Demand	800 gal/day/ERC
ERCs	2,716
TOTAL INDOOR	2,172,800 gpd or 1,509 gpm
Outdoor Peak Day Demand	3.39 gal/min/irrigated acre
Total Irrigated Acres	42 acres
TOTAL OUTDOOR	205,027 gpd or 142 gpm
TOTAL REQUIRED	2,377,827 gpd or 1,651 gpm
TOTAL AVAILABLE	1,320,000 gpd or 1,100 gpm

Table 1.2.2 Existing City Requirements for Source Demand

Peak Day Demand	800 gal/day/ERC
ERCs	1,276
TOTAL INDOOR	1,020,800 gpd or 709 gpm
Outdoor Peak Day Demand	3.39 gal/min/irrigated acre
Total Irrigated Acres	32 acres
TOTAL OUTDOOR	156,211 gpd or 108 gpm
TOTAL REQUIRED	1,177,011 gpd or 817 gpm
TOTAL AVAILABLE	1,320,000 gpd 1,100 gpm

Table 1.2.3 Existing Prison State Requirements for Source Demand

Peak Day Demand	800 gal/day/ERC
ERCs	1,439
TOTAL INDOOR	1,151,200 gpd or 799 gpm
Outdoor Peak Day Demand	3.39 gal/min/irrigated acre
Total Irrigated Acres	10 acres
TOTAL OUTDOOR	48,816 gpd or 34 gpm
TOTAL REQUIRED	1,199,520 gpd or 833 gpm
TOTAL AVAILABLE	1,320,000 gpd 1,100 gpm

As can be seen in Table 1.2.4 the source production does not produce sufficient water to meet state codes for Gunnison’s current circumstances. The current source production only meets 68% of the source demand. This deficit is projected to only increase as Gunnison City continues to grow, thus, another source must be located and developed in the near future.

Table 1.2.4 Total 20 Year (2043) Future Source State Requirements

Peak Day Demand	800 gal/day/ERC
ERC's	4,256
TOTAL INDOOR	3,404,800 gpd or 2,364 gpm
Outdoor Peak Day Demand	3.39 gal/min/irrigated acre
Total Irrigated Acres	48 acres
TOTAL OUTDOOR	234,317 gpd or 163 gpm
TOTAL REQUIRED	3,638,880 gpd or 2,527 gpm
TOTAL AVAILABLE	1,320,000 gpd 1,100 gpm

Table 1.2.5 City 20 Year (2043) Future Source State Requirements

Peak Day Demand	800 gal/day/ERC
ERC's	1,528
TOTAL INDOOR	1,222,400 gpd or 849 gpm
Outdoor Peak Day Demand	3.39 gal/min/irrigated acre
Total Irrigated Acres	38 acres
TOTAL OUTDOOR	185,501 gpd or 129 gpm
TOTAL REQUIRED	1,407,901 gpd or 978 gpm
TOTAL AVAILABLE	1,320,000 gpd 1,100 gpm

Table 1.2.1 Prison 20 Year (2043) Future Source State Requirements

Peak Day Demand	800 gal/day/ERC
ERC's	2,728
TOTAL INDOOR	2,182,400 gpd or 1,516 gpm
Outdoor Peak Day Demand	3.39 gal/min/irrigated acre
Total Irrigated Acres	10 acres
TOTAL OUTDOOR	48,816 gpd or 34 gpm
TOTAL REQUIRED	2,232,000 gpd or 1,550 gpm
TOTAL AVAILABLE	1,320,000 gpd 1,100 gpm

Table 1.2.2 Total 40 Year (2063) Future Source State Requirements

Peak Day Demand	800 gal/day/ERC
ERC's	5,356
TOTAL INDOOR	4,284,800 gpd or 2,976 gpm
Outdoor Peak Day Demand	3.39 gal/min/irrigated acre
Total Irrigated Acres	55 acres
TOTAL OUTDOOR	268,488 gpd or 187 gpm
TOTAL REQUIRED	4,553,288 gpd or 3,162 gpm
TOTAL AVAILABLE	1,320,000 gpd 1,100 gpm

Table 1.2.3 City 40 Year (2063) Future Source State Requirements

Peak Day Demand	800 gal/day/ERC
ERC's	1,784
TOTAL INDOOR	1,427,200 gpd or 991 gpm
Outdoor Peak Day Demand	3.39 gal/min/irrigated acre
Total Irrigated Acres	45 acres
TOTAL OUTDOOR	219,672 gpd or 153 gpm
TOTAL REQUIRED	1,646,872 gpd or 1,144 gpm
TOTAL AVAILABLE	1,320,000 gpd 1,100 gpm

Table 1.2.4 Prison 40 Year (2063) Future Source State Requirements

Peak Day Demand	800 gal/day/ERC
ERC's	3,572
TOTAL INDOOR	2,857,600 gpd or 1,984 gpm
Outdoor Peak Day Demand	3.39 gal/min/irrigated acre
Total Irrigated Acres	10 acres
TOTAL OUTDOOR	48,960 gpd or 34 gpm
TOTAL REQUIRED	2,906,560 gpd or 2,018 gpm
TOTAL AVAILABLE	1,320,000 gpd 1,100 gpm

1.3 Water Rate Structure

The latest rate structure for culinary water use, adopted as of September 2023, is shown in Table 1.3.1 below. Gunnison City has different base rates for users inside the city limits and users outside of the city limits. They have a tiered system that increases in price as the individual’s water usage increases. The base rate for those who live within city limits is \$35.00 while the base rate for those who live outside of city limits is \$42.00.

Table 1.3.1 City Culinary Water Rate Structure

Gunnison City Culinary Water Rate Structure		
Inside City Limits	Rate per 1,000 gal	Gallons
Base Rate:	\$ 35.00	0 - 6,000
	\$ 1.50	6,001 - 50,000
	\$ 2.00	50,001 - 300,000
	\$ 2.50	300,001 - 500,000
	\$ 3.50	500,001 - 1,000,000
	\$ 4.50	1,000,001 - 2,000,000
	\$ 6.50	2,000,001 and over

Outside City Limits	Rate per 1,000 gal	Gallons
Base Rate:	\$ 42.00	0 - 4,000
	\$ 1.90	4,000 - 50,000
	\$ 2.50	50,001 - 300,000
	\$ 2.60	300,001 - 500,000
	\$ 3.50	500,001 - 1,000,000
	\$ 4.50	1,000,001-2,000,000
	\$ 6.50	2,000,001 and over

2.0 Water Conservation Goals

The vast majority of homes have maintained landscaping by the use of irrigation sources. There have recently been two new subdivisions constructed as well as new houses being built throughout the City. As new development continues, the use of water will continue to rise. The City can reduce per capita consumption by promoting and expanding water conservation. As conservation goals and standards are integrated, increase in per capita consumption can be avoided.

The State of Utah has proposed a goal to reduce the per capita water demand of the public systems by 25% from 1995 to 2050. In conjunction with the State goal of conservation, Gunnison also holds the goal to decrease the water usage amount by 5%, starting in 2018 and ending in 2028. To achieve these goals, Ensign proposes several conservation goals:

1. **Goal #1: Reduce current consumption per capita by 25% by the year 2050.** This would mean the City would have to reduce per capita consumption from 375 gpd per capita to 281 gpd per capita. This can be accomplished by providing proper information to the community on good water conservation practices for both indoor and outdoor usage. Water use in Gunnison City will increase as more residents add landscaping to their yard and as more commercial users connect to the system. Gunnison City will need to introduce stricter outdoor conservation measures to meet the states goals in the future.
2. **Goal # 2: Maintain a financially viable water system.** This can be done by adopting a conservation-oriented rate structure. A conservation oriented rate structure will have the largest effect on conservation.
3. **Goal #3: Promote xeriscaping for landscapes, open spaces and yards .** Improved irrigation practices and water-efficient landscaping can enhance the appearance of the City and save water. Also promote a City ordinance that prevents users to water during the hotter times of day during the summer months.
4. **Goal #4: Work closely with the State Prison.** Although it cannot control water use at the State Prison, which is under the jurisdiction of the Utah State Department of Corrections, the City will continue to work very closely with Corrections Department and prison staff in an effort to encourage efficient water use since they are by far Gunnison’s largest water using entity.
5. **Install Secondary Irrigation Meters for Monitoring.** Although this report tends to focus on culinary water, the secondary irrigation metering project that is underway will provide essential information for knowing how much secondary water is being used and where the high-users are. By utilizing this information, Gunnison City will know where there secondary water is being used and develop ways to eliminate wasted water.

2.1 Recent Water Conservation Efforts

In the 2018 edition of Gunnison City’s Management and Conservation Plan, they outlined a goal of decreasing the water usage amount by 5% per person over the next 10 years. It was expressed that the most effective measure for implementing this WMCP will be public outreach by the Water Conservation Committee. Gunnison City believes that the water use reduction goal can be achieved by following the steps listed below:

1. Continue the public education program efforts that have been established to educate the public, especially the younger generations. To this end, Gunnison City will continue to 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 continue to become more aware of the need to conserve water, and act accordingly. Water use during recent drought years, has in general been reduced, and efforts toward more efficient use have been observed. This may be a reflection of the ongoing statewide water conservation and education program over the past several years.

2. Gunnison City will occasionally send inexpensive periodic public education flyers. It is believed that if people are exposed to water conservation messages through statewide and local programs, they will subconsciously improve their water conservation habits.

3. Although it cannot control water use at the State Prison, which is under the jurisdiction of the Utah State Department of Corrections, the City will continue to work very closely with Corrections Department and prison staff in an effort to encourage efficient water use.

4. Gunnison City will attempt to reduce the amount of water applied to the cemetery and park to more closely match recommended levels. If landscapes are upgraded the City will make an effort to make them more water efficient, setting an example of conservation for citizens, which in turn should reduce the total amount of water used by the City.

5. Gunnison City significantly increased its water rates and steps last year. This is meant to encourage conservation. It will also allow the City to maintain a financially stable water system with conservation in mind. Gunnison will 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.

6. To prevent total loss of water to evaporation, Gunnison City will occasionally evaluate the feasibility of wastewater treatment options that could allow water reuse, either in the City or elsewhere. The cost of treatment and then the infrastructure to allow reuse is extremely difficult to overcome for small communities. However, water reuse is becoming more prevalent throughout the country. It is expected that more and better funding may someday be available to help defray the costs.

7. Monitor use patterns to detect leaks. Gunnison City uses triggers in its billing software that automatically alerts staff personnel when current use exceeds previous trends and average use. The City will continue this effort. The effectiveness of this effort has been enhanced by the installation of the new radio read meter system.

8. Gunnison has ordinances that prohibit general waste of water and has set time of day watering restrictions. General waste of water is any practice that allows the water to run in one place over an extended period of time. Landscape irrigation during the hottest part of the day, from 10:00 am to 6:00 pm is not allowed. Violations may result in loss of irrigation water and other penalties. Punishment for violations are established by the Council in line with State guidelines.

9. Gunnison has established emergency water conservation and contingency plans. The water conservation contingency plan for implementation due to severe drought or other emergency system supply shortages is outlined in 2.12 below.

2.2 Recommended Efforts for Water Conservation Efforts

The latest water conservation measures are known as “Best Management Practices (BMPs)” and many of these measures are discussed in this section. The intent of all the measures is the same: to encourage utilities to use these measures as the cornerstone of their water conservation program. The following programs are proposed:

2.2.1 Public Information Program

The water users of Gunnison should be informed of specific measures to establish or enhance a water conservation ethic among Gunnison City’s customers. The programs could include:

- Poster contests.
- T-shirt design contests.
- Presentations and tours with hands-on demonstrations.
- Advertisements on the radio and television.

Printed educational material such as bill inserts (providing information on the customer’s bills showing water usage for the last billing period compared to the same period the year before), and Coordinating with other Citys, agencies, industry groups, public interest groups, and the media.

- The following steps could be used to design a public information program:
- Develop a clean and persuasive statement of purpose.
- Choose an appropriate theme.
- Identify key target groups.
- Select citizens for a water conservation committee.
- Identify communication paths, resource materials, and volunteers.
- Design and implement specific campaigns.
- Ensure effective coordination and follow-through.

The program will target all customers within the City’s service area. The purpose and a water conservation theme of the public information program will be decided upon. Examples of possible themes and slogans are:

- Save Water.
- Use Water Wisely.
- Save Water, Save Money, Save Energy.
- Save Water, It’s Your Future.

- Save Water Today for Tomorrow.
- Water is Life, Don't Waste It.

A program logo reflecting the theme then can be selected or use the State's existing logo. The image could be realistic, stylized, or a friendly caricature with a suitable name. This theme can be retained or modified as needed in the future.

2.2.2 Public/Consumer Education Program

Public education can ensure long-term water conservation. Through public involvement, people become more aware of the hydrologic cycle and the limitations nature places on water availability. Public education can provide examples of practical ways for more efficient use. This can result in public realization of the value of water, reasons to conserve water and the benefits of implementing long term water conservation efforts. Consequently, significant water use reductions can be achieved and more public support for the conservation program can be generated.

The City will develop plans for a consumer education program focusing on the need for water conservation, community water problems, and feasible alternatives. The potential for water conservation programs will be discussed, including the rationale behind proposed actions and monetary benefits to the customers.

A water conservation program will be initiated in institutions (such as schools, churches and public buildings) including a leak detection program, metering and refitting of public facilities with water saving devices, and training seminars for public employees.

Public education programs on water conservation prove to be the best way of bringing about substantial water savings. Long term, on-going programs will promote a conservation ethic, making people more receptive to the idea of reducing water use to conserve limited water resources.

2.2.3 Identify High Water Users

The high water users in the commercial and industrial sectors such as office buildings, hotels, motels, gas stations, restaurants, and individual industrial plants should be identified. The high water users should be approached with specific water conservation plans for their facilities.

2.2.4 Refitting Program with Water Saving Devices

A refitting program using water saving devices such as toilet displacement bottles, flow control-aerators and shower flow control should be planned. A pilot test program should be started before a large-scale program is begun.

2.2.5 Water Survey Programs for Single and Multifamily Residential Customers

The City could offer an indoor and outdoor water survey of single- and multi-family residential customers. Specific activities for each indoor and outdoor survey should include the following:

- Indoors
 - Check for leaks including toilets, faucets, and meter check.

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- Check flow rates for showerheads and faucets, and offer to replace or recommend replacement with low flow models as appropriate.
- Check toilet flow rates and offer to install or recommend installation of displacement devices or direct customer to Ultra Low Flush Toilet (ULFT) replacement program, as appropriate; replace leaking toilet flapper, as necessary.
- Outdoors
 - Check irrigation system and timer
 - Review or develop customer irrigation schedule in minutes of watering time per week for spring, summer, and fall.
 - Provide a rain shut-off device (optional)
 - Measure currently landscaped area (optional).
 - Measure total irrigation area (optional).

2.2.6 Conservation-Oriented Billing Rate Structures

Gunnison's rate structure is currently separated into two categories: Inside City Limits and Outside City Limits as shown in Table 1.3.1. In comparison to neighboring cities, Gunnison charges near the average amount up to 20,000 gallons per month, which is an amount that most connections do not exceed. This rate structure is not overly aggressive and if needed a more aggressive rate for commercial connections may be used to help them conserve water.

2.2.7 *Landscaping Schemes with Low Water Consumption Rates*

Since landscaping creates one of the greatest impacts on current water supplies, the City should promote water conservation through landscape planning by education and through the use of xeriscaping, the use of no- or low-water plants. See relevant Internet links.. Xeriscaping has the greatest potential for water saving where new construction is involved.

2.2.8 *High Efficiency Washing Machine Rebate*

The City could start a rebate program to encourage residents using a more conservation-oriented higher-efficiency washing machine than their existing one. Front-loading washing machines typically use half as much water as top-loading machines. The City could set goals, criteria, objectives, and timetables for implementation of a program.

2.2.9 *Linking With Useful Internet Sites*

Gunnison City could create an internet website that could be used for posting monthly City-wide water consumption, recommended lawn-watering rates and times, and other water conservation-related information. The City's website could display links to the following useful sites, which City residents could visit to learn about different strategies for water conservation.

- <http://extension.usu.edu/waterquality/hwm/conservation>: Utah State University Extension provides many useful educational tools and links for water conservation.
- (<http://www.conservewater.utah.gov>): Utah Division of Water Resources site.
- (<http://utahrivers.org/2015/08/20/saving-water-tips/>): Utah River Council site. The site includes information on strategy to reduce water use, xeriscaping, other water conservation links and books on water conservation.
- (www.watereducation.utah.gov/conservation/default.asp): Sites for Water Conservation for Kids
- (<http://www.awra.org>): The American Water Resources Town is an excellent source of water-related information and literature.
- (<http://www.slcgov.com/waterconservation>): Salt Lake City conservation website.
- (<http://www.epa.gov/watersense>): How to Conserve Water and Use It Effectively (EPA).

2.2.10 *The Water Conservation Checklist*

The following list of 23 “Water Conservation Tips” could be posted to City’s bulletin to educate residents:

- **Check your toilet for leaks:** A leak in your toilet may be wasting more than 100 gallons of water a day. To check, put a little food coloring in your toilet tank. If, without flushing, the coloring begins to appear in the bowl, you have a leak. Adjust or replace the flush valve or call a plumber.
- **Stop using your toilet as a wastebasket:** Every time you flush a piece of lint, facial tissue or other small bit of trash down the toilet, you waste five to seven gallons of water.

- **Put one or two plastic bottles in your five-gallon or larger toilet tank:** Your toilet can flush just as efficiently with less water than it now uses. To cut down on waste, put an inch or two of sand or pebbles in each of one or two plastic quart bottles to weigh them down. Fill them with water, screw on the lid and put them in your toilet tank, safely away from the operating mechanisms. Better yet, replace your old toilet with a new low-flush toilet. They are readily available in a variety of styles and colors.
- **Take shorter showers:** Long hot showers waste five to ten gallons of water every unneeded minute. Limit your showers to the time it takes to soap up, wash down and rinse off.
- **Install water-saving shower heads or flow restrictors:** Most shower heads put out five to ten gallons of water each minute, while three gallons is actually enough for a refreshing cleansing shower. Your local hardware or plumbing supply store stocks inexpensive water-saving shower heads that you can install yourself. For even less money, you can purchase a small plastic insert that will limit flow through your present shower head.
- **Turn off the water after you wet your toothbrush:** After you have wet your toothbrush and filled a glass for rinsing your mouth, there is no need to keep water pouring down the drain. The savings are small but frequent, and the message you send your children or grandchildren is huge.
- **Rinse your razor in the sink:** Before shaving, partially fill your sink with a few inches of warm water. This will rinse your blade just as efficiently as running water, and far less wastefully.
- **Check faucets and pipes for leaks:** Even the smallest drip from a worn washer can waste 50 or more gallons of water a day. Larger leaks can waste hundreds of gallons a day, enough to supply a whole family.
- **Use your automatic dishwasher only for full loads:** Every time you run your dishwasher, you use about 25 gallons of water. Consider replacing your older model with a newer water- and energy-efficient dishwasher. You would be surprised at the savings.
- **If you wash dishes by hand, don't leave the water running for rinsing:** If you have two sinks, fill one with soapy water and one with rinse water. If you have but one sink, gather all the washed dishes in the dish rack and rinse them with an inexpensive spray device.
- **Don't let the faucet run while you clean vegetables:** You can serve the same purpose by putting a stopper in the sink and filling the sink with clean water.
- **Keep a jug of drinking water in the refrigerator:** This ends the wasteful practice of running tap water to cool it off for drinking.
- **Use your automatic washing machine only for full loads:** Your automatic washer uses 30 to 35 gallons of water in a cycle. That's a lot of water for three T-shirts. Consider replacing your older model with a newer water- and energy-efficient machine.

Efficient Outdoor Water Use:

- **Plant drought-resistant trees and plants:** There are many beautiful trees and plants that thrive in Utah with far less watering than other species. See Appendix for lists of trees, shrubs, grasses and flowers that are suitable for our area, but require less water.
- **Put a layer of mulch around trees and plants:** A layer of mulch will slow the evaporation of moisture.
- **Use a broom to clean driveways, sidewalks and steps:** Using a hose to push around a few leaves and scraps of paper can waste hundreds and hundreds of gallons of water.
- **Don't run the hose while washing your car:** Soap down your car with a pail of soapy water. Then use a hose just to rinse it off.
- **Teach your children that your hose and sprinklers are not toys:** There are a few things more cheerful than the sound of happy children playing under a hose or sprinkler on a hot day. Unfortunately, there are also few things more wasteful of precious water.
- **Water your lawn and other plants only when they need it:** Watering frequently can be very wasteful as it doesn't allow for cool spells or rainfall that can reduce the need for watering. A good way to see if your lawn needs watering is to step on some grass. If the grass springs back up when you move, it doesn't need water. Look at links on the City's website for Agricultural Extension sites that provide lawn-watering guides, to make sure you are applying enough and only enough water on your landscaping.
- **Deep-soak your lawn:** When you do water your lawn, do it just long enough for water to seep down to the roots, where it won't evaporate quickly and where it will do the most good. A light sprinkling which sits on the surface, will simply evaporate and be wasted. In addition it encourages shallow inefficient root systems. A slow steady fall of water is the best way to irrigate your lawn.
- **Water during the cool parts of the day:** Less water is lost to evaporation when the ground and the air are cool. Early mornings are better than at dusk, since it helps preventing the growth of fungus.
- **Don't water the gutter:** Adjust your sprinkler patterns in such a way that water lands on your lawn or garden, not on concrete or asphalt, where it does no good. Avoid watering on windy days when much of your water may be carried off before it ever hits the ground.
- **Check for leaks in pipes, hoses, faucets and couplings:** Leaks outside the house may not seem as unbearable since they don't mess up the floor or drive you crazy at night. But they can be just as wasteful as leaks in the line from the water meter, even more wasteful. Excess watering and leaks around foundations can cause subsidence and damage walls.

2.2.11 Additional Best Management Practices (BMPs) as Conservation Measures

In addition to the water conservation measures that the City currently employs, the following best management practices (BMPs) are recommended (Utah's M & I Water Conservation Plan, July 2003):

- BMP 1 – Universal Metering

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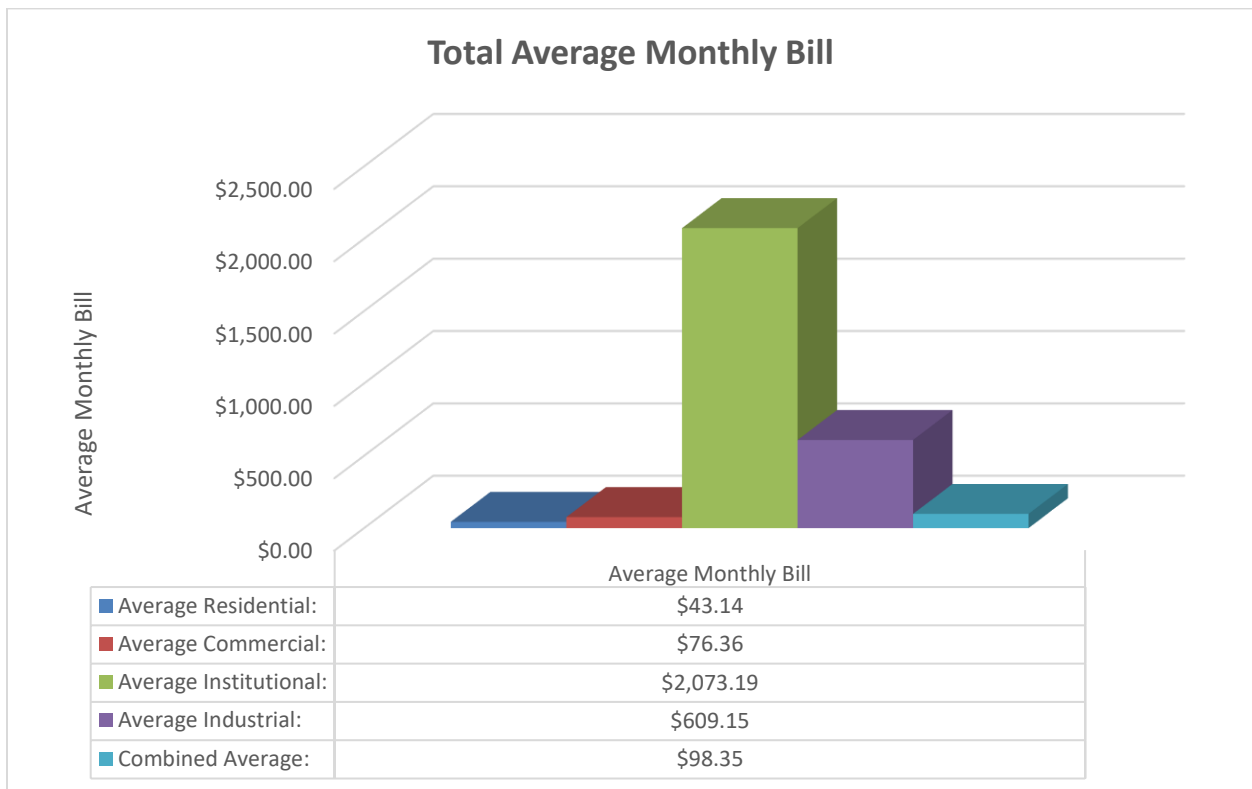
- Install meters on all residential, commercial, institutional and industrial water connections. Meters should be read on a regular basis (auto-read type meters would allow monthly readings).
 - Establish a maintenance and replacement program for existing meters.
- BMP 2 – Water Conservation Ordinances
 - Adopt an ordinance requiring water-efficient landscaping which include irrigation system efficiency standards and an acceptable plant materials lists.
 - Adopt an ordinance prohibiting the general waste of water. Then encourage citizens to call in reports of any water running down the street, so that leaks can be identified, and owners notified for repair action.
- BMP 3 – Water Conservation Coordinator
 - Designate a water conservation coordinator to facilitate water conservation programs.
- BMP 4 – System Water Audits, Leak Detection and Repair
 - Set specific goals to reduce unaccounted for water to an acceptable level.
 - Set standards for annual water system accounting that will quantify system losses and trigger repair and replacement programs, using methods consistent with American Water Works City’s Water Audit and Leak Detection Guidebook.
- BMP 5 – Large Landscape Conservation Programs and Incentives
 - Encourage all large landscape facility managers and workers to attend specialized training in water conservation.
 - Provide outdoor water audits to customers with large amenity landscapes.
- BMP 6 – Water Survey Programs for Residential Customers
 - Implement residential indoor and outdoor water audits to educate residents on how to save water.
- BMP 7 – Plumbing Standards
 - Review existing plumbing codes and revise them as necessary to ensure water-conserving measures in all new construction.
 - Identify homes, office building and other structures built prior to **1992** and develop a strategy to require, distribute or install high-efficiency plumbing fixtures such as ultra low-flow toilets, showerheads, faucet aerators, etc.
- BMP 8 – Conservation Programs for Commercial, Industrial and Institutional Customers
 - Change business license requirements to require water reuse and recycling in new commercial and industrial facilities where feasible.

- Provide comprehensive site water audits to those customers known to be large water users. Install separate meters for secondary irrigation water.
- BMP 9– Reclaimed Water Use
 - Use reclaimed or recycled water where feasible.
 - Encourage or enforce water-wise landscaping.

2.3 Progressive Water User Rates to Achieve Conservation

This BMP was mentioned in Section 2.2.11. A recent completed study by the Utah Town of Conservation Districts with the Utah Division of Water Resources, Utah State University Center for Water Efficient Landscape and USU Extension investigated using an “increasing block” price structure. The study found significant reductions in water usage when an increasing price block was used with a base fee.

During the summer, water use is highest due to outdoor irrigation. Currently, the average monthly bill in Gunnison is approximately \$98.35. However, this is skewed due the prison being such a large water user. A better comparison is looking at the residential average bill of \$43.14 The average monthly bill is based on the rate structure that promotes conservation. The assumption for the rates is that the majority of water users will not want their bills to increase and will reduce their water use to keep the cost the same under the new rate schedule. To keep their water bill from increasing, users will have to use less water by reducing the amount of area that is irrigated.



Gunnison can help assure that there is sufficient water for future residents by promoting aggressive outdoor conservation. Using a more conservation minded rate schedule will push water users to landscape more efficiently, using xeriscaping and drought resistant grass. The reductions do not have to occur immediately, but can take place over a period of time to allow users to adjust to the conservation rates. Conservation is the least expensive means of assuring there will sufficient water for future needs.

2.4 Water Conservation Program to Meet Goals

To ensure that the water conservation goals outlined in this report are achieved, the City should plan to participate in the following programs in the future.

- Public Information and Education Campaign
- Water Conservation Demonstration Garden
- Model Water-Efficient Residential and Commercial Landscape Ordinances
- Ultra Low Flush Toilet Replacement Program
- Residential, Commercial and Industrial Water Audits
- Water-Wise Landscaping Classes
- Large Water User Workshops
- Water Quest: Saving Water by the Yard
- City Facilities Re-Landscaping
- Water-Wise Landscape Awards
- Member Agency Assistance Program
- Water Conservation Plan Update
- Efficient use of surface water to reduce pumping groundwater.

2.5 Water Conservation Plan Implementation Considerations

Water conservation planning is a good investment for the City. The cost to develop an equivalent amount of water, treat it, and deliver it to the City residents is likely to be much higher.

2.6 Staffing

It appears that the responsibility would need to be given to a member or members of the current staff to conduct the following tasks:

- Implement public information program as described above.
- Conduct leak detection and repair.
- Coordinate water conservation program.

2.7 Method to Track Water Conservation Progress

The City should implement the following procedure to track water conservation progress:

- After first year of water conservation campaign, the City will compare monthly water supply data for each category of usage.
- The water supplied data and metered data will be compared to identify any leaks in the system. The detection and repair of the leaks will assist in estimating actual volume of water conservation.
- Add more conservation measures when and if necessary.

2.8 Culinary Water Conservation Contingency Plan

The following water conservation contingency plan is adopted as part of this plan:

Level 1 – Normal Years – In this condition there is currently plenty of culinary and irrigation water available for normal purposes.

- Eliminate watering on City property between the hours of 10 am and 6 pm.
- Encourage voluntary public water conservation measures.
- Mail information on conservation measures, which can be used outside as well as inside.

Level 2 - 75% of Normal Required Supply – In this condition, it is difficult to keep the culinary water tanks full during the daylight hours if people are using culinary water for outdoor purposes.

- Eliminate watering of City property.
- Educate the public about the water supply shortage and request cooperation using local public service radio announcements and local newspapers.
- Consider enactment of stiff emergency rate increases on overage tiers to curtail outdoor watering, without driving commercial customers out of business.
- Enact mandatory public conservation measures.
- Enforce outside watering restrictions, including watering times and quantities.

Level 3 - 50% or Less of Normal Required Supply – In this condition, it is difficult to maintain culinary tank levels during the full 24-hour day.

Gunnison City
Water Conservation Plan-2023

- Warn the public about water supply shortage and request continued cooperation using local public service radio announcements, local newspapers advertisements, and posted public flyers.
- Enact stiff emergency rate increases on overage tiers to further curtail outdoor watering, without driving commercial customers out of business.
- Strictly enforce all conservation policies with fines for non-compliance.
- Physically restrict water supplies to (in order of priority):
 1. All outside irrigation systems.
 2. Parks and other non-essential support facilities.
 3. Commercial users, restricting the largest, non-animal life support users first.
 4. Residential areas
 5. Commercial animal life support users.
 6. Any other non-life support areas, insuring water supplies to hospitals, hospices, and all other health care facilities, and controlled designated area water facilities.

WATER CONSERVATION PLAN ORDINANCE
to be inserted here

APPENDIX

Gunnison City
Water Conservation Plan-2023

Utah.Gov, www.utah.gov/pmn/files/974021.pdf. Accessed 5 Dec. 2023.

ORDINANCE 2023-07

AN ORDINANCE ADOPTING THE 2023 WATER CONSERVATION PLAN, PROVIDING FOR CODIFICATION, INCLUSION IN THE MUNICIPAL CODE, CORRECTION OF SCRIVERNER'S ERRORS, SEVERABILITY, AND AN EFFECTIVE DATE.

WHEREAS, Gunnison City is a fifth class city of the state of Utah; and

WHEREAS, Gunnison City operates a culinary water system; and

WHEREAS, the State of Utah requires communities with culinary water systems to adopt a water conservation plan with the intent being to reduce state wide water consumption by 25% between 2015 and 2035; and

WHEREAS, the City Council understands the need to use water in a more efficient manner to allow for future sustained growth in the community.

NOW THEREFORE, BE IT ORDAINED BY THE GUNNISON CITY COUNCIL THAT

Section I. Water Conservation Plan Adopted. Title IX, Chapter 9.7 of the Gunnison Municipal Code is hereby amended to read as follows:

9.7 Water Conservation Plan

The Gunnison City Water Management and Conservation Plan is hereby adopted this 6th day of December 2023 and shall be available for public viewing in the City Administration offices during regular business hours. The plan will be amended not less than every five years, or as required by the State of Utah, and will continue to play a vital role in the future development of Gunnison City.

Section II. Contrary Provisions Repealed. Any and all other provisions of the Gunnison City Municipal Code that are contrary to the provisions of this Ordinance are hereby repealed.

Section III. Codification, Inclusion in the Code, and Scrivener's Errors. It is the intent of the City Council that the provisions of this ordinance be made part of the Municipal Code of Gunnison City, Utah as adopted, that sections of this ordinance may be re-numbered or re-lettered, that the word ordinance may be changed to section, chapter, or other such appropriate word or phrase in order to accomplish such intent regardless of whether such inclusion in a code is accomplished. Sections of the ordinance may be re-numbered or re-lettered. Typographical errors which do not affect the intent of this ordinance may be authorized by the City without need of public hearing by its filing a corrected or re-codified copy of the same with the City Recorder.

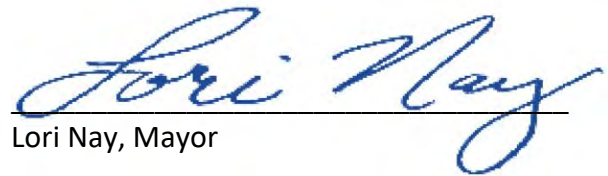
Section IV. Severability. If any section, phrase, sentence, or portion of this ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions thereof.

Section V. Posting and Effective Date. Prior to 5:00 p.m. on December 7, 2023, the City Recorder shall: (a) deposit a copy of this ordinance in the official records of the City; and (b) post a copy of this ordinance in three places within the City. This ordinance shall become effective at 5:00 p.m. on December 7, 2023.

ADOPTED AND PASSED by the City Council of the City of Gunnison, Utah this 6th day of December, 2023.

ATTEST 

Valerie Andersen, City Recorder



Lori Nay, Mayor

Councilmember Robert Andersen	YES
Councilmember Shawn Crane	YES
Councilmember Stella Hill	
Councilmember Rod Taylor	YES
Councilmember Michael Wanner	YES

Entity: Gunnison

Body: City Council

Subject:	Grant Proposals
Notice Title:	Gunnison City Council Public Hearing and Meeting
Meeting Location:	38 West Center Gunnison 84634
Event Date & Time:	January 2, 2019 January 2, 2019 07:00 PM - January 2, 2019 09:00 PM
Description/Agenda:	<p style="text-align: center;">NOTICE AND AGENDA</p> <p>NOTICE IS HEREBY GIVEN that the Gunnison City Council will hold a Public Hearing along with a City Council Meeting on Wednesday, January 2, 2019 at the Gunnison City Hall, 38 West Center, Gunnison, UT 84634, beginning at 7:00 p.m.</p> <ol style="list-style-type: none"> 1) Invocation 2) Public Comment 3) 7:00 p.m. Public Hearing to Receive Public Comments Regarding the Sponsoring of a Grant Request for the Recreation Dept. Involving a Proposed Community Development Block Grant Application. 4) 2018 Audit Report, Gary Keddington, Keddington & Christensen, LLC and Kimball & Roberts, CPA 5) Discuss and Proposed Approval of Ordinance 2019-1, City Council Meeting Schedule for 2019 6) Water Conservation Plan with Proposed Approval of Ordinance 2019-2, Water Conservation Plan, Adding Chapter 9-7 to Title IX of Gunnison City Code, Utilities ~ Councilmember Andersen 7) Proposed Approval of Resolution 2019-1, Amending Gunnison Administrative Policies and Procedures Manual, Retirement Plan, Exemption for Elected and Appointed Officials 8) Proposed Approval of IT Expenditure for City Hall ~ Councilmember Jensen 9) Discuss CIB Master List - Short Term and Long Term Projects ~ Mayor Nay 10) Discuss Opportunity for Local Event, Spike 150 ~ Mayor Nay 11) Discuss and Proposed Approval of Capital Outlay Expenditure for City Hall, Heritage Hall Additional Tables ~ Mayor Nay 12) Proposed Approval of City Council Meeting Minutes for Wednesday, December 5, 2018, Wednesday, November 28, 2018, Wednesday, November 7, 2018 and Wednesday, October 17, 2018 13) Proposed Approval of Bills and Adjustments 14) Future Items 15) Closed Session 16) Adjourn <p>NOTE: The agenda items may be discussed in any order. *In compliance with ADA, persons needing auxiliary communicative aids & accommodations for City-sponsored public meetings, services, programs, etc. should call City Offices at (435)528-7969 giving at least 24 hours notice. Consideration of adjourning into a Closed Session pursuant to the Provisions of Section 52-4-205(1) of the Open Meeting Law for the purpose of (a) discussion of the character, professional competence, or physical or mental health of an individual; (c) strategy sessions to discuss pending or reasonably imminent litigation; and (d) strategy sessions to discuss the purchase, exchange, or lease of real property, including any form of a water right or water shares, if public discussion of the transaction would: (i) disclose the appraisal or estimated value of the property under consideration; or (ii) prevent the public body from completing the transaction on the best possible terms. Certificate of Posting: The undersigned, duly appointed City Recorder, does hereby certify that the above notice & agenda was posted in Gunnison at City Hall and on the Public Notice Website, was emailed to the Gunnison Valley Gazette and the Sanpete Messenger in Manti, UT and delivered personally or electronically to the Mayor and City Council Members on this 31st day of December, 2018.</p> <p style="text-align: center;">_____ Janell Braithwaite, City Recorder</p>
Notice of Special Accommodations:	NOTICE OF SPECIAL ACCOMMODATION DURING PUBLIC MEETINGS In compliance with the Americans with Disabilities Act, individuals needing special accommodations (including auxiliary communicative aids and services) during this meeting should notify the City Offices at (435)528-7969 giving 24 hours notice
Notice of Electronic or	NA

telephone participation:

Other information:

Contact Information: Valerie Andersen
(435)528-7969
val@gunnisoncity.org

Posted on: December 31, 2018 12:13 PM

Last edited on: December 31, 2018 12:13 PM

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