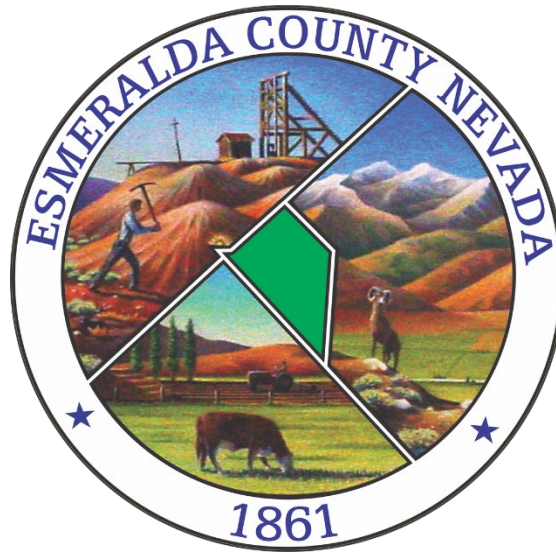


Goldfield Town Water

Water Conservation Plan

January 2026



Owner:

**Goldfield Town Water
P.O. Box 145
337 Elliott Avenue
Goldfield, NV 89013
(775)485-3483**

Assisted by:

**National Rural Water Association
2915 S. 13th Street
Duncan, OK 73533
(725) 296-2870**

Version 5 Revisions Completed by:

Roberts, A. & Berkey, C.

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Introduction

The water supply in Nevada is a precious commodity and plays a key role in determining Nevada's future. Nevada is one of the driest states in the nation as well as one of the fastest growing ones. Nevada's future, both from an economic and a quality-of-life view, depends heavily upon the wise management of the water supply.

Groundwater, in general, provides about 40 percent of the total water supply used in Nevada. In some areas, groundwater provides the entire water supply. Groundwater usage may vary from year-to-year as it is sometimes pumped to supplement surface water sources. In Nevada, most of the groundwater exists in the form of Basin and Range basin-fill aquifers, carbonate-rock aquifers, and volcanic rock aquifers.

Classifications of Water use in Nevada are:

- Domestic (household, both indoor and outdoor) – Met by public supply or private supply (e.g., wells).
- Commercial (businesses) – Met by public supply or private supply (e.g., non-community systems).
- Industrial (manufacturing/construction) – Met by public supply or private supply (e.g., non-community systems).
- Thermoelectric (electric/fossil fuel/geothermal power generation) – Met by public supply in a minor fraction.
- Mining (mining processes) – Supply source varies widely from operation to operation and is dependent upon the mineral being recovered and the recovery process employed.
- Irrigation (land use) – Met by self-supplied or supplied by irrigation companies or districts.
- Livestock (farm needs) – Supply source varies.

While all classifications of water usage have shown an increase over the years, it has historically been irrigation water use which has accounted for most of the water use in Nevada.

It has been estimated that domestic water use accounts for less than 15 percent of the water used in Nevada, but this is expected to rise to 25 percent as the population increases (based upon existing water use patterns and conservation measures). It is expected that Nevada's population will be concentrated in its primary urban areas of Las Vegas (Clark County), Reno/Sparks (Washoe County) and Carson City, with varied spillover effects on neighboring counties.

It is vitally important that all residents understand the fundamental science of water, how it is managed in the state, and the issues affecting its management. Water education must become a priority and must include education of children as they are our future.

Because Nevada does not have a comprehensive state-wide conservation program, it is reliant upon the individual water suppliers for developing their own conservation programs. In 1991, Nevada enacted a law requiring adoption of conservation plans by water suppliers. Minimum standards for plumbing fixtures were adopted in 1991 (Assembly Bill 359) by Nevada and in 1992 minimum flow standards for plumbing fixtures were adopted by the federal government (National Energy and Policy Conservation Act).

Conservation is an essential part of ensuring access to an adequate water supply as it is no longer feasible to develop new sources. It has proven to be a cost-effective way to reduce demand and/or to extend a given water supply. It can easily be pursued by all water users regardless of the water system type. Key to evaluating the program's effectiveness is water use measurement (through meters and other measurement devices). Various conservation measures can be put into place and the achievement of the goals set with these measures is vital to combating the expected increase in water usage.

This plan is available for inspection during normal business hours at 337 Elliott Avenue, Goldfield, NV. The plan can also be inspected at the County Clerk's Office or at the library.

The original Water Conservation Plan for **Goldfield Town Water** was developed in 1992 and modified in 2016.

In accordance with NRS 540.131, this plan will be reviewed from time-to-time to reflect changes and must be updated every five (5) years to comply with NRS 540.131 and NRS 540.141. The next update of this plan is to take place on, or before, January 2031.

Statutory Requirements

This water conservation plan was prepared by **Goldfield Town Water** in accordance with Nevada Revised Statute (NRS) 540. As outlined in:

NRS 540.131 Plan of water conservation: Procedure for adoption and updating of plan.

Briefly states:

1. The plan:
 - (a) Must be available for inspection by members of the public during office hours at the offices of the supplier of water.
 - (b) May be revised from time to time to reflect the changing needs and conditions of the service area. Each such revision must be made available for inspection by members of the public; and
 - (c) Must be updated every 5 years and comply with the requirements of this section and [NRS 540.141](#).
2. Water suppliers:
 - (a) Who are required to adopt a plan of water conservation pursuant to this section; and

- (b) Whose service areas are in a common geographical area, may adopt joint plans for water conservation based on the climate and living conditions of that common geographical area. Such a plan must comply with the requirements of this section and [NRS 540.141](#).
- 3. The board of county commissioners of a county, the governing body of a city and the town board or board of county commissioners having jurisdiction of the affairs of a town shall:
 - (a) Adopt any ordinances necessary to carry out a plan of water conservation adopted pursuant to this section which applies to property within its jurisdiction.
 - (b) Establish a schedule of fines for the violation of any ordinances adopted pursuant to this subsection; and
 - (c) Hiring employees as it deems necessary to enforce the provisions of any ordinances it adopts pursuant to this subsection.

NRS 540.141 Required provisions of plan or joint plan of water conservation.

Briefly states:

- 1. A plan or joint plan of water conservation submitted to the Section for review must include provisions relating to:
 - (a) Methods of public education to:
 - (1) Increase public awareness of the limited supply of water in this State and the need to conserve water.
 - (2) Encourage reduction in the size of lawns and encourage the use of plants that are adapted to arid and semiarid climates.
 - (b) Specific conservation measures required to meet the needs of the service area, including, but not limited to, any conservation measures required by law.
 - (c) The management of water to identify and reduce water loss in water supplies, inaccuracies in water meters and high pressure in water supplies, which must include, without limitation:
 - (1) Goals for acceptable levels of water loss in water supplies. Such goals may use the following performance indicators and analyses, without limitation:
 - (I) Infrastructure water loss index.
 - (II) Water audit data validity score.
 - (III) Operational basic apparent losses.
 - (IV) Operational basic real losses; and
 - (V) Economic level of water loss.
 - (2) A plan which analyzes how the supplier of water will progress towards the goals established for the acceptable levels of water loss.
 - (d) The management of water to, where applicable, increase the reuse of effluent.
 - (e) A contingency plan for drought conditions that ensures a supply of potable water.
 - (f) A schedule for carrying out the plan or joint plan.
 - (g) A plan for how the supplier of water will progress towards the installation of meters on all connections.
 - (h) Standards for water efficiency for new development.

- (i) Tiered rate structures for the pricing of water to promote the conservation of water, including, without limitation, an estimate of the manner in which the tiered rate structure will impact the consumptive use of water.
- (j) Watering restrictions are based on the time of day and the day of the week.

NRS 540.145 Requirements for supplier of water to calculate water loss.

1. Except as otherwise provided in subsection 4, each supplier of water that is required to adopt or update a plan of water conservation in accordance with the provisions of [NRS 540.131](#) and:
 - (a) Serves 3,300 persons or more must conduct a water loss audit in accordance with the methodology and software of the American Water Works Association for water loss auditing. The results of the water loss audit must be submitted by the supplier of water to the Section with the plan of water conservation or update to the plan of water conservation, as applicable.
 - (b) Serves less than 3,300 people must calculate the amount of water delivered by the supplier of water and the amount of water that was billed to customers of the supplier of water for each year. The calculations must be submitted by the supplier of water to the Section with the plan for water conservation or update to the plan of water conservation, as applicable.
2. If the supplier of water has previously submitted the results of a water loss audit to the Section pursuant to paragraph (a) of subsection 1, and is submitting an update to the plan of water conservation, the supplier must also submit it to the Section:
 - (a) A comparison between the results of the new water loss audit and the previous water loss audit; and
 - (b) An analysis of any progress made by the supplier towards the goals for acceptable water loss established in the plan for water conservation pursuant to paragraph (c) of subsection 1 of [NRS 540.141](#).
3. If the supplier of water has previously submitted the results of the calculations conducted pursuant to paragraph (b) of subsection 1 to the Section, and is submitting an update to the plan of water conservation, the supplier must also submit it to the Section:
 - (a) A comparison between the results of the new calculations and the previous calculations; and
 - (b) An analysis of any progress made by the supplier towards the goals for acceptable water loss established in the plan for water conservation pursuant to paragraph (c) of subsection 1 of [NRS 540.141](#).
4. The provisions of this section do not apply to a transient water system as defined in [NRS 445A.848](#).

NRS 540.151 Supplier of water required to adopt plans to provide certain incentives; procedure for adoption of plan; adoption of joint plans permitted.

1. Except as otherwise provided in subsection 5, each supplier of water which supplies water for municipal, industrial or domestic purposes shall adopt a plan to provide incentives:

- (a) To encourage water conservation in its service area.
 - (b) To retrofit existing structures with plumbing fixtures designed to conserve the use of water; and
 - (c) For the installation of landscaping that uses a minimal amount of water.
- The supplier of water may request assistance from the Section to develop its plan.
- 2. As part of the procedure of adopting a plan, the supplier of water shall provide an opportunity for any interested person to submit written views and recommendations on the plan.
- 3. The supplier of water shall file a copy of the plan with the Section for informational purposes.
- 4. Water suppliers:
 - (a) Who are required to adopt a plan for incentives pursuant to this section; and
 - (b) Whose service areas are in a common geographical area, may adopt joint plans.

System Description

Goldfield Town Water is a publicly owned residential/commercial non-transient community water system and has a current water operation permit, NV0000072. **Goldfield Town Water** serves 306 residential, 29 commercial, and 2 bulk customers in its service area in Goldfield,

Goldfield Town Water currently serves 354 metered connections within the Goldfield service area. which is in Esmeralda County, Nevada. The service area boundaries are Alpine Street and Grand Ave. to the north; Tracy Ave. and Hutchins Ave. to the south; Fourth, Fifth, Sixth, and Seventh Streets to the west; and Reed, Karns, and Donovan Streets in addition to the length of Chispa Hills Road that extends to the Florence Mine to the east. This service area covers approximately 1 square mile, and its terrain is a gentle slope. Source water is supplied from the Klondike well field (Wells 1–4), each equipped with 200 GPM pumps (installed capacity 800 GPM; 600 GPM firm with the largest source offline). Raw water is conveyed via a 10-inch transmission main to two 800 GPM booster pump stations (BPS-1 and BPS-2) and onward to the 300 GPM arsenic treatment plant (coagulation/filtration). Finished water storage consists of two welded steel tanks (200,000 gal and 366,000 gal), located adjacent to the WTP at the southwest edge of town. As of 2025, approximately 1.3 miles of 6-inch AC transmission main remain to be replaced between BPS-2 and the WTP; all other transmission segments have been upgraded. In 2022, Klondike Wells 3 & 4 were drilled to support system reliability and raw water capacity. Planned 2026 improvements include a second 10,000-gal backwash/settling tank with dedicated decanting and sludge pumps, segregated chemical storage rooms with secondary containment and leak detection, valve and piping upgrades, SCADA/electrical/HVAC improvements, and roof replacement to metal to improve resiliency. These upgrades will restore standard backwash/rinse cycles, improve treatment efficiency, and reduce water losses associated with backwash handling.

No separate water systems are close enough to form emergency supply options.

The estimated population served in 2019 was approximately 300 residents. Updated demographic projections from the Nevada Department of Taxation, used by the Nevada Division of Water Planning through its Nevada State Water Plan framework, show Esmeralda County growing from 1,067 residents in 2023 to 1,196 residents in 2029, an average annual growth rate of approximately **1.95%** rather than the previously used 0.18% rate. Applying this updated countywide growth trend to Goldfield, the community is projected to increase from roughly 364 residents in 2024 to approximately 378 residents by 2026 and 400 residents by 2029. In addition to this steady baseline growth, Goldfield has the potential to experience additional population increases associated with the development and operation of the Gemfield Resources, LLC open-pit gold mine, and additional potential mining operations e.g. expanded lithium.

Goldfield Town Water has been granted water rights in the total amount of 900 acre-feet per year for the Klondike well field, divided among the wells Klondike 1 and 2, and the currently proposed Klondike 3 and 4. The resultant permitted water rights for each well are listed in the table below (Table 1). Additional water rights for wells and springs not tied to the municipal water system are listed in Table 2. These water rights were sourced from the Permit Search section of the Waters Rights Databases section on the State of Nevada Division of Water Resources website (Nevada Division of Water Resources, 2020b).

Table 1 – Klondike Well Field Water Rights

Certificate Date	PBU Due Date	Certificate Number	Permit No.	Well Name	Rate of Diversion (max, CFS)	Annual Use (acre-feet)
1/8/1992	4/24/1988	13195	41861	Klondike #1	0.1880	136.105715
	4/25/2021		60963	Klondike #1	1.5000	150.000000
	4/15/2021		76340	Klondike #1	0.0030	2.240000
	12/31/2022		85509	Klondike #1	0.5020	150.000000
	2/3/2021		55627	Klondike #2	1.5000	150.007832
	12/31/2022		85508	Klondike #2	0.5020	150.000000
	12/31/2022		89095	Klondike #3	0.4981	148.880000
	12/31/2022		89096	Klondike #4	0.4981	148.880000

These permits are subject to the following limitation: “The total combined duty of water under Permit 41861, Certificate 13195; Permit 55627; Permit 60963; Permit 76430; Permit 85508; Permit 85509; Permit 89095; and Permit 89096 shall not exceed 900 acre-feet annually.” (Nevada State Engineer, Nevada Division of Water Resources, 2020).

Table 2 – Other Water Rights

Certificate Date	Certificate Number	Permit No.	Well Name	Rate of Diversion (max, CFS)	Annual Use (acre-feet)
7/1/1944	2795	10150	Well No. 1.	0.2500	0.5339886
4/11/1969	6982	20552	Popenberger Well	0.2500	0.5339886
3/10/1967	6216	20553	Rabbit Springs Well	2.0000	4.2657710
3/7/1967	6199	20554	Damned if I Know Spr.	0.2500	0.5339886
3/16/1967	6217	20555	Meyer Well	4.0000	8.5315420
3/13/1967	6218	21157	Childers Well	0.2500	0.5339886
3/13/1967	6219	21158	Fayhen Well	0.3500	0.7457427
3/13/1967	6220	21159	Brewery Well	0.1100	0.2363053
3/13/1967	6221	21160	Tripod Well	0.3000	0.6414001
3/13/1967	6222	21162	Clark Well	4.0000	8.5622310
3/7/1967	6200	21314	Dahlstrom Well	0.3000	0.6414001
9/20/1971	7670	22691	Slaughter House Well	0.0225	16.2850000
4/5/1976	8754	27309	Indian Springs	0.2500	181.0037220

Goldfield Town Water's water source is located in the Alkali Spring Valley Basin (142), which was designated on March 3, 2016. The basin is approximately 313 square miles and has a perennial yield of 3,000 acre-feet per year (Nevada Division of Water Resources, 2020a). The aquifer located in this basin is an unconsolidated sand and gravel basin-fill aquifer that exists on the edge of the carbonate-rock province and is adjacent to and/or inclusive of carbonate-rock conditions (Planert & Williams, 1995; Welch, et al., 2007). The water found in this aquifer contains elevated levels of arsenic, necessitating its removal through the use of an arsenic treatment plant.

The town's water is produced from two (4) groundwater wells, Klondike 1, 2, 3, and 4, located approximately 15 miles north of the town of Goldfield west of U.S. Route 95. Information regarding each well is listed on the table below (Table 3).

Table 3 – Source of Supply

Well Name	Depth (feet)	Production (gpm)
Klondike 1	412	300
Klondike 2	400	285
Klondike 3	440	300
Klondike 4	400	300

Groundwater is pumped from one of the wells to a 20,000-gallon storage tank located at Booster Station 1, and from there to a second 20,000-gallon storage tank located at Booster Station 2. The water is then pumped from this storage tank to the arsenic treatment plant located beyond the south end of Fourth Street, on the side of the malpais, above town. Here, arsenic is removed from the water through a chemical process involving the injection of Sodium Hypochlorite (NaOCl), Ferric Chloride (FeCl₃), Hydrochloric Acid (HCl), and filtration. The treated water is pumped into two (2) storage tanks located on-site at the treatment plant, with capacities of 200,000 gallons (Tank No. 1) and 366,000 gallons (Tank No. 2), enumerated in the following table (Table 4).

Table 4 – Storage Capacity

Tank No.	Volume (gal)
1	200,000
2	366,000

The treated water is then distributed to customers through water mains consisting of Asbestos Cement (Transit) pipe (ACP), C-900 pipe, and Schedule 40 PVC pipe of various sizes, ranging from two (2) inches to eight (8) inches in diameter, and service connections consisting of thermoplastic high-density polyethylene (HDPE) pipe ranging from three-quarter (3/4) inch to two (2) inches in diameter. The distribution system consists of one (1) pressure zone, pressure-isolated by pressure reducing control valves. The system design is such that water pressure is in the range of **40 to 65** pounds per square inch (psi) throughout the system.

Goldfield Town Water is currently in the process of expanding its water system with the proposed addition of one new well, Klondike 5, in the near future, , as well as continued improvements to the water supply system in order to supply Gemfield Resources, LLC with water for the construction and operation of its planned open pit gold mine. The planned pumping increase to supply this mine with water is modeled to lower the water levels of the Alkali Spring Valley Basin aquifer, such that the indicators for each stage of the drought contingency plan must be altered to account for these changes. No improvements are currently confirmed.

Wastewater collected from the service area is discharged into the wastewater treatment plant located approximately 0.6 miles north of the northernmost service area boundary. The wastewater treatment plant consists of two lined lagoons and two rapid infiltration basins. The lagoons can be operated in series or in parallel but are normally operated in series to achieve longer retention time before discharge into the infiltration basins. Treatment relies on natural processes to consume solids and natural aeration. During the summer months, much of the water within the lagoons evaporates.

Goldfield Town Water requires, at a minimum, a **Distribution Grade 2 and Treatment Grade 2** operator. Michael Anderson is the Distribution operator (D2) and Larry Grant is the Treatment Operator (T2).

The system/treatment operator is required to perform daily, weekly, quarterly, monthly, and yearly monitoring and testing of water quality. **Goldfield Town Water** has suffered from water quality issues in the first half of 2020. Samples are regularly taken from the arsenic treatment plant and tested by Silver State Analytical Laboratories for arsenic as part of **Goldfield Town Water's** regular monthly testing to maintain compliance with the EPA's National Primary Drinking Water Regulations. The Maximum Contaminant Level (MCL) for arsenic in public water systems as of January 23, 2006, is 0.010 mg/L or Parts Per Million (ppm), or 10 µg/L or Parts Per Billion (ppb) (United States Environmental Protection Agency, 2020). The samples taken and tested in January, March, and May of 2020 contained arsenic levels that exceeded the MCL of 10 ppb: 19.1 ppb, 13.8 ppb, and 42.1 ppb, respectively. **Goldfield Town Water** believes the failure of the static mixer (used for mixing the chemicals as they're injected into the influent) accounts for these arsenic MCL exceedances. In response, **Goldfield Town Water** replaced the static mixer and the filter media used in the treatment process. Samples tested since these measures were taken have not exceeded the arsenic MCL.

The last sanitary survey performed by the Nevada Division of Environmental Protection (NDEP) was completed on June 24, 2025, and showed four (4) deficiencies within the system. These deficiencies were addressed and official documentation of their rectification was submitted to NDEP on July 9, July 15, and August 27, 2025.

Goldfield Town Water utilizes a monthly base rate and a tiered usage rate for its billing system. The current rates were established in May of 2018. Tables breaking down the customer type, number, and rate schedule are located in Appendix A.

Plan Provisions

In accordance with NRS 540.131, this plan will be reviewed from time to time to reflect changes and must be updated every five (5) years to comply with NRS 540.131, NRS 540.141, NRS 540.145, and NRS 540.151. The next update of this plan is to take place on, or before, January 2031.

Goldfield Town Water will assign a staff member to oversee the conservation efforts, and this staff member will be responsible for implementation of conservation programs, monitoring of water use, and will review and/or revise the conservation plan when needed.

In an effort to promote voluntary conservation and aid in Nevada's future, **Goldfield Town Water** will enact the voluntary conservation measures found in the **Specific Conservation Measures and Incentives** section. When more stringent measures are needed, **Goldfield Town Water** will enact the measures found in the **Contingency Plan for Drought Conditions** section.

The following plan provisions are discussed in detail, as required by NRS 540.141, NRS 540.145, and NRS 540.151.

Public Education

Public education is key for cooperation with conservation efforts, so funding for public education is crucial. **Goldfield Town Water** recognizes this and will establish a conservation education program and corresponding budget.

It is the goal of **Goldfield Town Water** to increase public awareness of its water conservation plan in order to conserve water, encourage reduction in lawn sizes, encourage the use of climate-appropriate plants, encourage the use of drip irrigation, and encourage conscious decision-making regarding water use.

The conservation education program includes educational materials such as bill inserts, pamphlets, flyers, and posters. New customers will be provided with these materials when service is established, while existing customers will receive these materials periodically through bill inserts or direct mail. Educational pamphlets will be provided to all customers upon request and should include an explanation of all costs involved in supplying drinking water and demonstrate how water conservation practices will provide water users with long-term savings. Education materials should also encourage reduction of lawn sizes, use of drip irrigation, use of climate-appropriate plants, and conservation tips and techniques (see Appendix E).

Customers should also be able to read and understand their water bills. Bills should be informative, going beyond the basic billing information. Bills should include comparisons to previous bills and tips on water conservation that can help customers make informed choices about their water usage. Bill inserts can also include this information. **Goldfield Town Water** can include additional information with bill inserts but is currently limited in terms of providing personalized information for each customer.

Goldfield Town Water can participate in public outreach opportunities such as Earth Day, provide information at a variety of school programs, participate in workshops for plumbers/suppliers/builders, and provide incentives for conservation efforts (e.g., plumbing retrofit rebates, water conservation landscaping rebates, etc.). A school presentation could include information on Goldfield's water distribution system (e.g., where our water comes from) and information on water conservation and its importance (e.g., permanent effects of depleting aquifers).

Goldfield Town Water could also establish a water conservation advisory committee that would involve the public in the conservation process and provide feedback to the system concerning its efforts, thus fostering support for conservation in the community.

Goldfield Town Water will coordinate its conservation education program with the implementation of the updated 2025 Source Water Protection Plan. As public outreach activities are conducted under the Source Water Protection Plan, including community events, school presentations, and distribution of educational materials, conservation messaging will be integrated to reinforce the connection between responsible water use and long-term source water sustainability. By combining conservation education with source protection outreach, Goldfield Town Water will provide consistent, comprehensive information to the public regarding the

importance of reducing demand, protecting aquifers, and ensuring a reliable water supply for the future.

Specific Conservation Measures and Incentives

To promote conservation and voluntarily conserve water, **Goldfield Town Water** is adopting water-use regulations to promote water conservation during non-emergency situations. These regulations promote the disuse of the following **non-essential** water use:

- 1) Use of water through any connection when **Goldfield Town Water** has notified the customer in writing to repair a broken or defective piece of plumbing, sprinkler, watering or irrigation system and the customer has failed to make such repairs within 5 days after receiving such notice.
- 2) Use of water which results in flooding or run-off in gutters, waterways, patios, driveways, or streets.
- 3) Use of water for washing aircraft, cars, buses, boats, trailers or other vehicles without a positive shut-off nozzle on the outlet end of the hose. Exceptions include washing vehicles at commercial or fleet vehicle washing facilities operated at fixed locations where equipment using water is properly maintained to avoid wasteful use.
- 4) Use of water through a hose for washing buildings, structures, sidewalks, walkways, driveways, patios, parking lots, tennis courts, or other hard-surfaced areas in a manner which results in excessive run-off or waste.
- 5) Use of water for watering streets with trucks, except for initial wash-down for construction purposes (if street sweeping is not feasible), or to protect the health and safety of the public.
- 6) Use of water for construction purposes, such as consolidation of backfill, dust control, or other uses unless no other source of water or other method can be used.
- 7) Use of water for more than minimal landscaping in connection with any new construction.
- 8) Use of water for watering outside plants and turf areas using a hand-held hose without a positive shut-off valve.
- 9) Use of water for decorative fountains or the filling or topping off of decorative lakes or ponds. Exceptions are made for those decorative fountains, lakes, or ponds which utilize recycled water.
- 10) Use of water for the filling or refilling of swimming pools.
- 11) Service of water by any restaurant except upon the request of the patron.

In the event these conservation measures are insufficient to control a water shortage, **Goldfield Town Water** may wish to implement the mandatory measures discussed in the **Contingency Plan for Drought Conditions** section.

Incentives Plan NRS 540.151

Goldfield Town Water has adopted, as part of this Conservation Plan, the following plan to provide incentives for the installation of landscaping that uses a minimal amount of water, and for retrofits to existing structures with plumbing fixtures designed to conserve the use of water in order to encourage water conservation in the service area.

Goldfield Town Water also promotes the development of water conserving principles into the planning, development, and management of new landscape projects such as public parks, building grounds, and golf courses. Customers are encouraged to consult with a local nursery or conduct an internet search on the availability of water-conservation-friendly plants and how to renovate existing landscapes. Customers are also encouraged to evaluate irrigation management systems using metering, timing, and water sensing devices.

Goldfield Town Water provides the following incentives for conservation: currently, it is not viable to offer any water conservation incentives.

Water Management & Loss Reduction

Goldfield Town Water monitors system production and distribution using SCADA-connected flow meters at the groundwater wells, booster stations, treatment plant, and storage facilities. Treated water delivered to the town is compared annually with metered customer sales to determine water losses.

The required annual water-loss calculation for systems serving fewer than 3,300 people is based on the difference between water delivered to the distribution system and billed customer consumption. Goldfield Town Water tracks this using treated-to-town totals and metered sales data.

This calculation satisfies the NRS 540.145 requirement for water systems serving fewer than 3,300 persons.

A three-year review of non-revenue water (NRW) from 2022–2024 shows an average NRW of 9.65%, with annual values of 7.83% (2022), 15.16% (2023), and 5.96% (2024). These variations primarily reflect improvements in metering accuracy and operational conditions. The Town has replaced older meters and improved meter-reading practices, and continued data verification is recommended.

Planned improvements at the water treatment plant, including an additional settling tank and restored backwash/rinse cycles, are expected to further reduce process losses and help maintain NRW near or below 10%.

Table 5 – NON-REVENUE WATER CALCULATION NRS 540.145**NRW Summary (2022–2024):**

Year	Water Treated (MG)	Backwash (MG)	Treated to Town (MG)	Water Sold (MG)	NRW (MG)	NRW (%)
2022	27.87	0.55	27.32	25.18	2.14	7.83%
2023	18.98	0.38	18.60	15.78	2.82	15.16%
2024	13.87	0.28	13.59	12.78	0.81	5.96%

Goals for Acceptable Levels of Water Loss in Water Supplies

Before accurate loss control target-setting and benchmarking can be established, many of the following goals must be met:

- Analyze the business process for customer metering, billing functions, and water supply operations.
 - The current metering and billing process leaves too much room for human error. The manual recording of meter readings, manual entering of these readings into the billing system, manual rate adjustment based on usage tiers for commercial and hydrant meter accounts, manual adjustment of usage multipliers, physical separation of billing department and utilities department, and disuse of the semi-automatic billing system enable data handling errors that may be difficult to catch if a regular and thorough review of each month's billing cycle is not completed. The current goal is to conduct the review each month.
- Identify and resolve data gaps.
 - Begin daily logging of System Treated Flow Totalizer and storage tank levels from office.
 - Begin metering of fire hydrants when using for dust control and street cleaning.
 - Use fire hydrant flow test calculations and log flushing time to accurately estimate volume used when flushing hydrants.
 - Log time, date, and duration when storage tanks are flushed and use tank height data from SCADA to calculate volume used when flushing tanks.
 - Log time, date, and duration when backwash and/or storage tank overflow occurs to estimate volume lost.
 - Conduct measurement of water distribution mains and break down length by each pipe diameter size.
 - Conduct field count of existing water service connections and break down by connection size, noting meter serial number and/or Customer ID and/or Factory ID if applicable and service location based on town block and lot map and/or through GPS.
 - Average Operating Pressure: A hydraulic model of the water system is currently being developed by Shaw Engineering to determine if the system can provide the necessary fire flow for a truck stop currently in construction. Until the model is

complete, existing pressure data may be utilized to calculate a weighted average instead of the current simple average. There are currently no plans to collect continuous pressure data, although this is subject to change.

- Calculate the Variable Production Cost in \$ per Million gallons.
 - Short-run marginal costs include:
 - Chemicals and power for treatment
 - Power for distribution
 - Long-run marginal costs include:
 - Water treatment residuals management (sludge)
 - Accelerated wear and tear on dynamic equipment (pumps, filter media, chemical dosing pumps, static mixer, sump pumps, etc.)
 - Payouts for damage claims from main and service line breaks
 - Full cost pricing that includes all lifecycle costs and externalities
- Improve supply metering.
 - Begin regular (annually or semi-annually) electronic calibration of treatment plant influent flowmeter. Electronic calibration is defined as a process that checks for error in the metering secondary device(s) and/or the tertiary device(s). Secondary devices can include conversion to mA, meter transmitters, or similar instrumentation. Tertiary devices can include SCADA, historian, or other computerized archival systems.
 - Begin regular (annually or semi-annually) in-situ flow accuracy testing of treatment plant influent flowmeter. In-situ flow accuracy testing is defined as a test process that confirms the flow measuring accuracy of the primary device (the flowmeter), in its installed location, using an independent reference volume.
 - Increase frequency of data review for anomalies/errors.
- Conduct loss assessment investigations on a sample portion of the system.
 - Perform customer meter tests, if possible, to determine accuracy percentage for each meter subset
 - Conduct a leak survey using listening equipment to detect water main, hydrant, and service connection leaks.
 - Assess distribution system for signs of unauthorized consumption.
- Begin to assess long-term needs requiring large expenditure.
 - Customer meter replacement currently occurs on an as-needed basis, with non-functioning and active manual meters taking priority.
 - **Goldfield Town Water** is currently in the process of applying for a loan from the NDEP State Revolving Fund in order to implement a new Automatic Meter Reading (AMR) system and billing system to reduce the time spent reading meters, reduce the human error within the metering and billing system, increase the accuracy of meter readings, and provide a more accurate comparison between water supplied and billed metered consumption, and, therefore, NRW. As a part of this project, all customer meters that cannot be retrofitted with radio reading devices will be replaced.
 - The last water-main replacement project occurred in 2001. Water main replacement currently occurs on an as-needed basis, and any future replacement projects will occur based on the expected life of each water main. Any water

mains that have no expected life due to a lack of documentation will be replaced on an as-needed basis. Water main replacement is budgeted for each year.

Once the above goals have been met (a plurality of which involves resolving data gaps), **Goldfield Town Water** will begin target-setting and benchmarking to establish apparent and real loss reduction goals and utilize KPIs to compare real loss standing. Current rough targets for real and apparent loss reduction can be found in the following table (Table 6). Please note that the current and estimated values are estimates and only serve as general goals until data gaps can be resolved and more accurate KPIs calculated.

Table 6 – Apparent & Real Water Loss Reduction Goals Expressed in KPI Values

Key Performance Indicators	FY 2019	FY 2020	Goals
Unavoidable Annual Real Loss (UARL)	2.2 MG/Yr 15.2 gal/conn/day	2.2 MG/Yr 15.2 gal/conn/day	N/A
Unit Apparent Losses (vol/conn/day)	2.5 gal/conn/day	2.9 gal/conn/day	2.0 gal/conn/day
Unit Real Losses ^A (vol/conn/day)	10.6 gal/conn/day	24.1 gal/conn/day	10 gal/conn/day
Unit Total Losses (gal/conn/day)	13.1 gal/conn/day	27.0 gal/conn/day	12.0 gal/conn/day
Unit Real Losses ^B (vol/pipeline length/day)	411 gal/mile/day	940 gal/mile/day	400 gal/mile/day
Infrastructure Leakage Index (ILI)	0.7	1.6	1.0
Apparent Loss Cost Rate (value/conn/year)	2.35 \$/conn/year	2.73 \$/conn/year	2.20 \$/conn/year
Real Loss Cost Rate (value/conn/year)	9.99 \$/conn/year	22.79 \$/conn/year	9.80 \$/conn/year
Total Loss Cost rate (value/conn/year)	12.34 \$/conn/year	25.52 \$/conn/year	12.00 \$/conn/year

Water Loss Reduction Plan

As mentioned above, the plan to progress towards the goals established for acceptable levels of water loss begins with reviewing each month's billing process, resolving the identified data gaps (listed above), improving supply metering, conducting a loss assessment on a sample portion of the distribution system, and moving forward with the possible AMR metering and billing system implementation.

The monthly billing review will be conducted by the Public Works department's secretary and/or other department employees as deemed necessary. Due to the small number of

customers, a spreadsheet will be set up to verify customers are being billed correctly, while also allowing high or low usage to be easily noticeable and investigated.

The identified data gaps will be split into two categories: those that are easily resolved with effort (Category 1), and those that require a more substantial amount of work and/or time to resolve (Category 2).

Category 1 data gaps include the following:

- Begin daily logging of System Treated Flow Totalizer and storage tank levels from office.
- Begin metering of fire hydrants when used for dust control.
- Log time, date, and duration when storage tanks are flushed and use tank height data from SCADA to calculate volume used when flushing tanks.
- Log time, date, and duration when backwash and/or storage tank overflow occurs to estimate volume lost.

Near daily logging of the System Treated Flow Totalizer and storage tank levels has already begun, and the data will be maintained in a spreadsheet.

Fire hydrants are primarily used for street cleaning and dust control when working on new water and sewer installs, as well as repairing existing ones. The Public Works department has access to surplus hydrant meters that can be used to determine the volume of water used when hydrants are used for this purpose. It will become policy of **Goldfield Town Water** to use hydrant meters, when possible, to help accurately determine unbilled authorized consumption.

Future tank flushing will require the logging of the time, date, and duration of each flush to help accurately determine unbilled authorized consumption.

If backwash and/or storage tank overflow occurs, all efforts will be made to estimate the volume lost during such an event. This volume would be classified as part of real loss and will help narrow down real loss to volumes that the utility cannot account for.

Category 2 data gaps include the following:

- Use fire hydrant flow test calculations and log flushing time to accurately estimate volume used when flushing hydrants.
- Conduct measurement of water distribution mains and break down length by each pipe diameter size.
- Conduct field count of existing water service connections and break down by connection size, notating meter serial number and/or Customer ID and/or Factory ID if applicable and service location based on town block and lot map and/or through GPS.
- Average Operating Pressure: A hydraulic model of the water system is currently being developed by Shaw Engineering in order to determine if the system can provide the necessary fire flow for a truck stop currently in construction. Until the model is complete,

existing pressure data may be utilized to calculate a weighted average instead of the current simple average if the data can be located. There are currently no plans to collect continuous pressure data, although this is subject to change.

- Calculate the Variable Production Cost in \$ per Million gallons.
 - Short-run marginal costs include:
 - Chemicals and power for treatment
 - Power for distribution
 - Long-run marginal costs include:
 - Water treatment residuals management (sludge)
 - Accelerated wear and tear on dynamic equipment (pumps, filter media, chemical dosing pumps, static mixer, sump pumps, etc.)
 - Payouts for damage claims from main and service line breaks
 - Full cost pricing that includes all lifecycle costs and externalities

Hydrant flushing cannot utilize hydrant meters to determine the volume used, as any flow restriction will negatively impact the goals of flushing, and **Goldfield Town Water** does not own any hydrant meters that fit the larger 4-inch nozzles used when flushing. Hydrant flow tests have been conducted in the past, but this data is currently unavailable, and new tests may need to be conducted. This may be done as part of the development of the new hydraulic model. Once flows have been established for each hydrant, determining the volume used when flushing will be calculated based on the duration of each hydrant flush. This volume would be classified as unbilled unmetered authorized consumption.

The length of each water main has been calculated in the past, but this data is currently unavailable, and new measurements may need to be conducted. The measuring process would utilize existing engineering drawings as a reference and a rangefinder for the actual measuring. This data point, along with the material and diameter size of each main, will be documented, both in writing and in the hydraulic model. Expected life will also be associated with each main. This data is important in determining an accurate calculation of UARL and ILI.

The current billing database does not include a number of inactive accounts/service connections that exist in the field. It is estimated that approximately 50 unaccounted for service connections exist. These connections will be field located and verified by identifying existing meter boxes and meters, if possible. This process will need to be completed with the Public Works supervisor, who possesses sole knowledge of many service connection locations. All service connections will be plotted on a map of the town as accurately as possible. They will also be documented in a spreadsheet with each connection's associated meter information, if applicable, and the property owner's information. Digital copies of the map and spreadsheet will be backed up in order to preserve this information. In establishing an accurate number of service connections, the calculated water loss KPIs will be more accurate.

The operating pressure of the distribution system has been calculated at multiple locations in the past, using fire hydrants. This data is currently unavailable, and, as such, the current calculated average operating pressure consists of a simple average, rather than a weighted one. As the hydraulic model of the distribution system is developed, it is likely that new hydrant

flow rates and pressure data will be obtained soon. This data will be used to calculate a more accurate average operating pressure.

The current Variable Production Cost (VPC) in \$/Million gallons is unknown. As such, the Customer Retail Unit Charge (CRUC), calculated as a weighted average and taking into account usage-based sewer charges, is used in its place to calculate the value of apparent and real losses, unbilled authorized consumption, and NRW. The VPC will be calculated using the short-run and long-run marginal costs listed above. These costs will be adjusted on a yearly basis, and, in turn, the VPC will be adjusted yearly. This calculation will be performed by the Public Works secretary and/or other department employees as deemed necessary.

Each of the above data gap resolution procedures will be completed as soon as possible, beginning with Category 1, and completing Category 2 in an order based on ease of completion or as otherwise directed to by the Public Works supervisor.

The task of improving supply metering consists of three parts: conducting regular electronic calibration and in-situ flow accuracy testing of the treatment plant influent flowmeter and increasing the frequency of data review for errors and anomalies. Data review has currently increased to a near daily frequency, along with logging of the System Treated Flow Totalizer and storage tank levels. The frequency and necessity of electronic calibration and in-situ flow accuracy testing will be determined by the Public Works supervisor.

The completion of a loss assessment on a sample portion of the distribution system will consist of customer meter testing, a leak survey, and assessing unauthorized consumption. **Goldfield Town Water** does not possess the capability to accurately test customer meters in-house, and any tests done will likely only reveal meters with a high percentage of inaccuracy. A leak survey would likely be performed in-tandem with the measuring of water mains. The conduction of a leak survey will be at the discretion of the Public Works supervisor. Due to the small size of the distribution system, unauthorized consumption can easily be identified, if all of the previous steps are completed. Even without the completion of these steps, unauthorized consumption can be narrowed down to theft from hydrants, the use of inactive service connections, and unknown service connections without meters. Once each service connection is identified, tracking of inactive service accounts will allow for close monitoring of unauthorized consumption.

The majority of this plan's provisions are estimated to be completed within one year of the Conservation Plan's approved update as of January 2021.

Effluent Reuse

Goldfield Town Water does not have a system for reusing effluent, and it is currently not viable to implement an effluent reuse plan based on the setup of the sewer treatment plant and average construction/haul water demand.

Contingency Plan for Drought Conditions

The objective of the contingency plan is to manage the usage of available water resources to ensure a continued reliable supply of potable water during periods of drought or extended drought.

It is envisioned that voluntary conservation will be sufficient to ensure access to an adequate supply of water and reduce water usage. However, if a sustained drought is encountered, it may be necessary to implement mandatory restrictions in order to ensure access to an adequate supply of water to meet essential needs.

Goldfield Town Water's plans for drought response are designated into three (3) stages of drought response: (1) warning stage, (2) alert stage, and (3) emergency stage.

These drought stages are based on the static water level (water level under non-pumping conditions) of the system wells, Klondike 1 and 2. The static water level of Klondike 1 is 200 ft (distance below surface) as of November 2020. Its recovery time (time it takes for water level to return to static level after pumping stops) ranges from two to two-and-a-half hours. The static water level of Klondike 2 is approximately 202 ft as of November 2020. Its recovery time is approximately 32 hours. Given enough recovery time, Klondike 2's static water level will recover to match Klondike 1's static water level of 200 ft. The wells penetrate a saturated thickness of approximately 200 feet. The pump setting in Klondike No. 1 is 235 feet and the top of the well screen is 250 feet. The pump setting in Klondike No. 2 is 330 feet and the top of the well screen is 250 feet.

Stage 1: Declared if the static water level drops to 260-feet (60 ft decline, 30.0% of aquifer saturated thickness).

Stage 2: Declared if the static water level drops to 275-feet (75 ft decline, 37.5% of aquifer thickness)

Stage 3: Declared if the static water level drops to 290-feet (90 ft decline, 45.0% of aquifer saturated thickness).

The stages are described as follows:

Stage 1 – Warning Stage

1. **Goldfield Town Water** will increase monitoring of water supplies.
2. **Goldfield Town Water** will begin creating public awareness of the water supply situation and the need to conserve.
3. **Goldfield Town Water** will inform customers of **voluntary** conservation measures (dis-use of non-essential water uses, listed on the following page).
4. **Goldfield Town Water** will inform industrial water users of a **voluntary** 75% of normal water usage goal and initiate a review of alternative industrial water sources.

5. **Goldfield Town Water** will provide retrofit kits (low-flow faucet aerators, low-flow showerheads, leak detection tables, and replacement flapper valves) at cost, and they can be actively distributed, if needed.

In **Stage 1**, the warning stage, **Goldfield Town Water** will increase the monitoring of its water supplies, including increasing the review frequency of static and pumping water levels, drawdown, and recovery time, and will begin creating public awareness of the water supply situation and the need to conserve. Public awareness will include flyers sent to each customer and regular updates to the county website. The county commissioners will be notified if the static water level begins to drop before Stage 1 is reached. Conservation measures at this stage will be **voluntary** for residential and commercial users. Discussions will begin with industrial water users to identify possible areas of reduction in normal usage, with a **voluntary** goal to achieve a reduction to 75% of normal usage. Alternatives for industrial water supply will be identified and reviewed to preserve municipal water. Retrofit kits (low-flow faucet aerators, low-flow showerheads, leak detection tables, and replacement flapper valves) can be made available at cost, and can be actively distributed, if needed.

Non-essential water uses include:

- 1) Use of water through any connection when **Goldfield Town Water** has notified the customer in writing to repair a broken or defective piece of plumbing, sprinkler, watering or irrigation system and the customer has failed to make such repairs within 5 days after receiving such notice.
- 2) Use of water which results in flooding or run-off in gutters, waterways, patios, driveways, or streets.
- 3) Use of water for washing aircraft, cars, buses, boats, trailers, or other vehicles without a positive shut-off nozzle on the outlet end of the hose. Exceptions include washing vehicles at commercial or fleet vehicle washing facilities operated at fixed locations where equipment using water is properly maintained to avoid wasteful use.
- 4) Use of water through a hose for washing buildings, structures, sidewalks, walkways, driveways, patios, parking lots, tennis courts, or other hard-surfaced areas in a manner which results in excessive run-off or waste.
- 5) Use of water for watering streets with trucks, except for initial wash-down for construction purposes (if street sweeping is not feasible), or to protect the health and safety of the public.
- 6) Use of water for construction purposes, such as consolidation of backfill, dust control, or other uses unless no other source of water or other method can be used.
- 7) Use of water for more than minimal landscaping in connection with any new construction.
- 8) Use of water for watering outside plants and turf areas using a hand-held hose without a positive shut-off valve.
- 9) Use of water for decorative fountains or the filling or topping off of decorative lakes or ponds. Exceptions are made for those decorative fountains, lakes, or ponds which utilize recycled water.
- 10) Use of water for the filling or refilling of swimming pools.
- 11) Service of water by any restaurant except upon the request of the patron.

Stage 2 – Alert Stage

1. **Goldfield Town Water** will set conservation goals and call for wide-based community support to achieve those goals.
2. **Goldfield Town Water** will inform customers of **mandatory** conservation measures (dis-use of non-essential water uses, listed in Stage 1, is now **mandatory**).
3. **Goldfield Town Water** will inform customers of penalties if **mandatory** conservation measures are not observed (penalties are listed below).
4. Use of water for outside plants, lawns, landscapes, and turf areas will only be permitted two days a week, and mandatory water conservation fees will apply for any violations.
5. **Goldfield Town Water** will limit the use of fire hydrants to fire protection uses only.
6. **Goldfield Town Water** will reduce water volume to industrial users to 50% of normal usage.
7. **Goldfield Town Water** will provide customers with retrofit kits at cost.
8. **Goldfield Town Water** will consider increasing water usage rates by up to 1.5 times the existing rates as deemed necessary.

In **Stage 2**, the alert stage, **Goldfield Town Water** will establish a water usage reduction goal and call for wide-based community support to achieve conservation. Conservation measures at this stage will be **mandatory** and violations will incur penalties. Watering restrictions will be implemented (see provision number five above), and penalties imposed for ignoring these restrictions. The use of fire hydrants will be limited to fire protection uses (by requiring effluent or imported water from Silver Peak for construction and dust control purposes). Industrial users will be reduced to 50% of normal usage. Retrofit kits will continue to remain available as in **Stage 1**. Water rates may be increased by up to 1.5 times the normal usage rate as deemed necessary.

Penalties for violation of **mandatory** conservation measures and outdoor watering restrictions are:

- 1st violation – written warning.
- 2nd violation – \$50.00
- 3rd violation – turn-off of water services.

Offenses for separate water use restriction violations will each start at the warning stage (1st violation) and the penalties for the offenses will be billed in addition to the regular rate schedule charges.

A flow restrictor may be installed if the customer is non-responsive after the 1st violation. The flow restrictor shall not restrict water delivery by greater than 50% of normal flow. The flow restrictor may be removed only by **Goldfield Town Water**, and only after a 30-day period has elapsed and only upon payment of the \$100.00 removal charge.

If, after the removal of the flow restrictor, any non-essential or unauthorized use of water shall continue, another flow restrictor may be installed and shall remain in place until water supply conditions warrant its removal and the appropriate charge for removal has been paid.

Stage 3 – Emergency Stage

1. **Goldfield Town Water** will declare a drought and water shortage emergency and use media relations to supplement efforts to keep customers informed.
2. **Goldfield Town Water** will set rationing benchmarks for each customer class.
3. **Goldfield Town Water** will inform customers of water rationing violation fees.
4. **Mandatory** conservation measures will remain in place through **Stage 3**.
5. **Goldfield Town Water** will inform customers of increased penalties if **mandatory** conservation measures are not observed (penalties are listed below).
6. **Goldfield Town Water** will prohibit outdoor watering.
7. **Goldfield Town Water** will limit the use of fire hydrants to fire protection uses only.
8. **Goldfield Town Water** will stop supplying water to industrial users for production needs.
9. **Goldfield Town Water** will provide customers with retrofit kits either at cost or free of charge.
10. **Goldfield Town Water** will consider increasing water usage rates by up to two times the normal usage rate as deemed necessary.
11. **Goldfield Town Water** will seek monetary assistance in an effort to mitigate the drought (e.g., federal funding).

In **Stage 3**, the emergency stage, **Goldfield Town Water** will declare a drought and water shortage emergency. Media relations will be activated in order to inform customers. Water rationing benchmarks and violation penalties will be established for each customer class, and customers will be informed. **Mandatory** conservation measures will remain in place and continue to be enforced, with customers being informed of the increased penalties. Outdoor watering will now be prohibited, and **mandatory** conservation penalties will apply to any violations. The use of fire hydrants will continue to be limited to fire protection uses. Industrial users will no longer be supplied with water for production needs. Water rates may be increased by up to two times the normal usage rate as deemed necessary. Monetary assistance may need to be secured to mitigate the effects of the drought (e.g., federal funding assistance).

When a drought is declared over, **voluntary** conservation measures will be reinstated, and water supplies will continue to be monitored.

Penalties for violation of **mandatory** conservation measures and outdoor watering restrictions are:

- 1st violation – written warning.
- 2nd violation – \$100.00
- 3rd violation – turn-off of water services.

Offenses for separate water use restriction violations will each start at the warning stage (1st violation) and the penalties for the offenses will be billed in addition to the regular rate schedule charges.

A flow restrictor can be installed if the customer is non-responsive after the 1st violation. The flow restrictor shall not restrict water delivery by greater than 50% of normal flow. The flow restrictor may be removed only by **Goldfield Town Water**, and only after a 30-day period has elapsed and only upon payment of the \$200.00 removal charge.

If, after the removal of the flow restrictor, any non-essential or unauthorized use of water shall continue, another flow restrictor may be installed and shall remain in place until water supply conditions warrant its removal and the appropriate charge for removal has been paid.

Water rationing violation penalties will be applied as:

Every 1000 gallons used above the customer class-specific rationing benchmark will be billed at twice the normal usage rate.

If any customer seeks a variance from the provisions of Stage 3, then that customer shall notify **Goldfield Town Water** in writing, explaining in detail the reason for such a variation. **Goldfield Town Water** shall respond to each request.

Schedule for Carrying Out the Plan

Most of the provisions listed in this water conservation plan are currently in place and are actively working to achieve results. As outlined prior in the **Water Loss Reduction Plan**, the establishment of an ongoing review of each month's billing calculations, the resolution of data gaps, and improvement of supply metering are estimated to be completed within one year of the approval of this updated plan. Once these goals have been met, accurate water loss target-setting and benchmarking will begin.

Once approved, the updated plan will be made available on the county website for easy access and review, and a copy will be sent to each customer.

Meter Installation

The water system is currently metered. The only known exception is the service connection at the road shop, but its estimated usage is not high enough to make metering the connection a high priority.

Standards for Water Efficiency for New Development

Goldfield Town Water adopts the most current version of the Uniform Plumbing Code (UPC), recognized by the Nevada State Public Works Division as the guiding standard for all

new construction and renovation projects connected to the water system. The applicable standard at the time of this plan's update is the 2018 Uniform Plumbing Code.

Although the Town of Goldfield has not formally enacted an ordinance adopting the UPC, Goldfield Town Water applies these requirements as a utility policy to promote water-efficient development. All applicants for new service connections are expected to follow the latest State-adopted UPC provisions relating to water efficiency, including the use of WaterSense-labeled fixtures and climate-appropriate, low-water-use landscaping where feasible. Compliance is not mandatory under municipal code but is strongly encouraged to support long-term resource sustainability.

Tiered Rate Structures

The charging of variable rates for the use of water has sometimes been shown to encourage conservation of water, but not in all systems. Oftentimes the end-user will continue to pay increasing block rates out of necessity for the water used. The use of variable water rates needs to be evaluated on a case-by-case basis.

Goldfield Town Water utilizes variable rates in order to discourage excessive water use and cover the cost of increased pumping frequency and duration, as well as increased use of the arsenic treatment plant.

As of the most recent update to this plan, the current tiered rate structure primarily impacts hydrant meter users. With the singular tier threshold for this customer class being so high (500,010 gallons and over per billing period), it does not act as a deterrent. Those customers who do cross the threshold are unlikely to seek water elsewhere, and their water needs will remain the same, regardless of conservation efforts, due to the nature of its use (mainly road construction).

See Appendix A for current rate structure.

A new tiered rate structure would need to be implemented in order to better evaluate its usefulness in discouraging excessive water use while maintaining funding for **Goldfield Town Water**.

Watering Restrictions

Watering of outdoor plants, lawns, landscapes, and turf areas are prohibited from the hours of 12pm – 6pm due to heavy evaporation during this time frame. These watering restrictions are enacted on a voluntary basis.

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Appendices

APPENDIX A – RATE STRUCTURE

Goldfield Town Water Conservation Plan

Version 5; January 2026

Goldfield Utilities Water & Sewer Rates

WATER	Not in Use (NIU): 60 NIU Inactive (I): 18 H2: 2 \$43.00 base rate, includes first 1000 gal. \$3.00 per 1000 gal/\$0.003 per 1 gal usage rate.
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RESIDENTIAL		Number of Customers as of November 2020		Billing Period: 223	Active: 221	Inactive: 2
Meter Size (inches)	Monthly Service Charge	Tier	Threshold X 1000 gallons	Rate per 1000 gallons	Notes	
Up to 1"	\$ 26.00	1	0 - 2	\$ -	First 2000 gallons included in monthly service charge.	
Up to 1"	\$ 26.00	2	2.01 and over	\$ 2.50		

New Service Fees			Additional Fees	
Tapping Fee	TBD (Actual Cost)	One-Time Water Privilege Connection Fee (Impact to System)	\$ 1,000.00	Deposit (For Non-Landowners; Non-Transferrable & Non-Refundable) \$ 50.00

COMMERCIAL A AND B		Number of Customers as of November 2020 Billing Period: 32			
Meter Size (inches)	Monthly Service Charge	Tier	Threshold X 1000 gallons	Rate per 1000 gallons	Notes
Up to 2" (Commercial A)	\$ 36.00	1	0 - 1	\$ -	First 1000 gallons included in monthly service charge.
Up to 2" (Commercial A)	\$ 36.00	2	1.01 - 500	\$ 3.00	
Up to 2" (Commercial A)	\$ 36.00	3	500.01 and over	\$ 4.00	
2" - 3" (Commercial B)	\$ 46.00	1	0 - 1	\$ -	
2" - 3" (Commercial B)	\$ 46.00	2	1.01 - 500	\$ 3.50	
2" - 3" (Commercial B)	\$ 46.00	3	500.01 and over	\$ 4.00	

New Service Fees			Additional Fees	
Tapping Fee	TBD (Actual Cost)	One-Time Water Privilege Connection Fee (Impact to System)	\$ 1,000.00	Deposit \$200.00

INDUSTRIAL		Number of Customers as of November 2020 Billing Period: 0			
Meter Size (inches)	Monthly Service Charge	Tier	Threshold X 1000 gallons	Rate per 1000 gallons	Notes
3" and larger	\$ 200.00	1	0 - 1	\$ -	First 1000 gallons included in monthly service charge.
3" and larger	\$ 200.00	2	1.01 - 500	\$ 3.50	
3" and larger	\$ 200.00	3	500.01 and over	\$ 4.00	

New Service Fees			Additional Fees	
Tapping Fee	TBD (Actual Cost)	One-Time Water Privilege Connection Fee (Impact to System)	3" \$ 2,000.00 4" and larger \$ 6,000.00	Deposit \$200.00

HYDRANT METER		Number of Customers as of November 2020		Billing Period: 10	Active: 7	NIU: 3
Meter Size (inches)	Monthly Service Charge	Tier	Threshold X 1000 gallons	Rate per 1000 gallons	Notes	
3" (Hydrant Meter)	\$ 46.00	1	0 - 1	\$ -	First 1000 gallons included in monthly service charge.	
3" (Hydrant Meter)	\$ 46.00	2	1.01 - 500	\$ 3.50		
3" (Hydrant Meter)	\$ 46.00	3	500.01 and over	\$ 4.00		

New Service Fees	
Refundable Hydrant Meter	\$ 200.00
Damage Deposit	

Goldfield Utilities Water & Sewer Rates

SEWER

RESIDENTIAL

Meter Size (inches)	Monthly Service Charge
Up to 1"	\$ 16.00

New Service Fees			
Tapping Fee	TBD (Actual Cost)	One-Time Water Privilege Connection Fee (Impact to System)	\$ 1,000.00

COMMERCIAL A AND B

Meter Size (inches)	Monthly Service Charge	Tier	Threshold X # of Units	Rate per 1000 gallons
Up to 2" (Commercial A)	\$ 19.00	-	-	\$ -
2" - 3" (Commercial B)	\$ 19.00	1	1 - 4	\$ -
2" - 3" (Commercial B)	\$ 19.00	2	5 and over	\$ 0.50

New Service Fees			
Tapping Fee	TBD (Actual Cost)	One-Time Sewer Privilege Connection Fee (Impact to System)	\$ 1,000.00

INDUSTRIAL

Meter Size (inches)	Monthly Service Charge	Tier	Threshold X # of Units	Rate per 1000 gallons
3" and larger	\$ 208.50	1	1 - 4	\$ -
3" and larger	\$ 208.50	2	5 and over	\$ 1.00

New Service Fees			
Tapping Fee	TBD (Actual Cost)	One-Time Sewer Privilege Connection Fee (Impact to System)	\$ 6,000.00

ADDITIONAL FEES

Yearly System Obligation Fee (Per Parcel on Improved Parcels)	\$ 100.00 Water	Charged to tax bills.
	\$ 15.00 Sewer	
Estimate Fee	\$ 50.00	Credited to bill after service installed.
Application Processing Fee	\$ 10.00	
Disconnect Fee	\$ 25.00	
Reconnect Fee	\$ 25.00	
Reconnect Fee (Outside Regular Work Hours)	\$ 30.00	
Inactive Fee	\$ 5.00 /month	Service requested to be inactive, but not disconnected. (Replaces normal Monthly Service Charge.)
Returned Check Fee	\$ 25.00	
24 Hour Disconnect Notice	\$ 10.00	
Penalties/Late Fees	10% of arrears	Additional 2% each month after one month w/o payment.

APPENDIX B – PUBLIC EDUCATION MATERIALS

There are several publications available for use at the U.S. EPA website for general distribution (currently located at <http://epa.gov/watersense/pubs/index.htm#ideas>). These publications include such topics as:

- Simple Steps to Save Water,
- Ideas for Residences,
- Ideas for Commercial,
- Using Water Wisely in the Home,
- Outdoor Water Use in the US,
- Toilet Flush Facts,
- Watering Can Be Efficient,
- Irrigation Timers for the Homeowner, and
- Water Efficient Landscaping,

These publications can be utilized until **Goldfield Town Water** develops system-specific publications.

There are also numerous websites that provide tips for conserving water. One of these is: <http://www.wateruseitwisely.com/100-ways-to-conserve/index.php>. Customers can be directed to this website for tips to conserve water.

Specific tips for landscaping that can be provided to the customers are listed below. During drought conditions outdoor watering restrictions may be imposed, and therefore some of the following tips will not apply.

Tips for Landscaping

Watering:

- Detect and repair all leaks in irrigation systems.
- Use properly treated wastewater for irrigation where available.
- Water the lawn or garden during the coolest part of the day (early morning is best). Do not water on windy days.
- Water trees and shrubs, which have deep root systems, longer and less frequently than shallow-rooted plants which require smaller amounts of water more often. Check with the local nursery for advice on the amount and frequency of watering needed in your area.
- Set sprinklers to water the lawn or garden, not the street or sidewalk.
- Use soaker hoses and trickle irrigation systems.
- Install moisture sensors on sprinkler systems.

Planting:

- Have your soil evaluated for nutrient content and add organic matter if needed. Good soil absorbs and retains water better.

- Minimize turf areas and use native grass.
- Use native plants in your landscape which require less care and water than ornamental varieties.
- Add compost or peat moss to soil to improve its water-holding capacity.

Maintaining:

- Use mulch around shrubs and garden plants to reduce evaporation from the soil surface and cut down on weed growth.
- Remove thatch and aerate turf to encourage movement of water to the root zone.
- Raise your lawn mower cutting height to cut grass no shorter than three inches—longer grass blades encourages deeper roots, help shade soil, cut down on evaporation, and inhibit weed growth.
- Minimize or eliminate fertilizing which requires additional watering and promotes new growth which will also need additional watering.

Ornamental Water Features:

- Do not install or use ornamental water features unless they recycle the water. Use signs to indicate that water is recycled. Do not operate during a drought.

APPENDIX C – END-USER WATER SAVINGS

Here are just a few of the end-user water savings that could be realized:

Leaky Faucets

Issue: Leaky faucets that drip at the rate of one drip per second can waste more than 3,000 gallons of water each year.

Fix: If you're unsure whether you have a leak, read your water meter before and after a two-hour period when no water is being used. If the meter does not read exactly the same, you probably have a leak.

Leaky Toilets

Issue: A leaky toilet can waste about 200 gallons of water every day.

Fix: To tell if your toilet has a leak, place a drop of food coloring in the tank; if the color shows in the bowl without flushing, you have a leak.

Showering

Issue: A full bathtub requires about 70 gallons of water, while taking a five-minute shower uses 10 to 25 gallons.

Fix: If you take a bath, stop the drain immediately and adjust the temperature as you fill the tub.

Brushing Teeth Wisely

Issue: The average bathroom faucet flows at a rate of two gallons per minute.

Fix: Turning off the tap while brushing your teeth in the morning and at bedtime can save up to 8 gallons of water per day, which equals 240 gallons a month!

Watering Wisely

Issue: The typical single-family suburban household uses at least 30 percent of their water outdoors for irrigation. Some experts estimate that more than 50 percent of landscape water use goes to waste due to evaporation or runoff caused by overwatering.

Fix: Drip irrigation systems use between 20 to 50 percent less water than conventional in-ground sprinkler systems. They are also much more efficient than conventional sprinklers because no water is lost to wind, runoff, and evaporation. If the in-ground system uses 100,000 gallons annually, you could potentially save more than 200,000 gallons over the lifetime of a drip irrigation system should you choose to install it. That adds up to savings of at least \$1,150!

Washing Wisely

Issue: The average washing machine uses about 41 gallons of water per load.

Fix: High efficiency washing machines use less than 28 gallons of water per load. To achieve even greater savings, wash only full loads of laundry or use the appropriate load size selection on the washing machine.

Flushing Wisely

Issue: If your toilet is from 1992 or earlier, you probably have an inefficient model that uses at least 3.5 gallons per flush.

Fix: New and improved high-efficiency models use less than 1.3 gallons per flush—that's at least 60 percent less than their older, less efficient counterparts. Compared to a 3.5 gallon per flush toilet, a WaterSense labeled toilet could save a family of four more than \$90 annually on their water bill, and \$2,000 over the lifetime of the toilet.

Dish Washing Wisely

Issue: Running dishwasher partially full and pre-rinsing dishes before loading the dishwasher.

Fix: Run the dishwasher only when it's full and use the rinse-and-hold dishwasher feature until you're ready to run a full load. Pre-rinsing dishes does not improve cleaning and skipping this step can save you as much as 20 gallons per load, or 6,500 gallons per year. New water-saver dishwashers use only about 4 gallons per wash.

Estimated water savings from EPA Water Conservation Guidelines 1998 (Appendix B, Table B-1):

Type	Estimated Usage (gpcpd)	Conservation Usage (gpcpd)	Savings (gpcpd)	Savings (%)
Toilet	18.3	10.4	7.9	43 %
Clothes Washers	14.9	10.5	4.4	30 %
Showers	12.2	10.0	2.2	18 %
Faucets	10.3	10.0	.3	3 %
Leaks	6.6	1.5	5.1	77 %

Benchmarks from selected conservation measures from EPA Water Conservation Guidelines 1998 (Appendix B, Table B-4):

Category	Measure	Reduction of End Use (% or gpcpd)
Universal metering	Connection metering	20 %
	Sub metering	20 – 40 %
Costing and pricing	10% increase in residential prices	2 – 4 %
	10% increase in non-residential prices	5 – 8 %
	Increasing-block rate	5 %
Information and education	Public education and behavior changes	2 – 5 %
End-use audits	General industrial water conservation	10 – 20 %
	Outdoor residential use	5 – 10 %
	Large landscape water audit	10 – 20 %
Retrofits	Toilet tank displacement devices (for toilets using > 3.5 gallons/flush)	2 – 3 gpcpd
	Toilet retrofit	8 – 14 gpcpd
	Showerhead retrofit (aerator)	4 gpcpd
	Faucet retrofit (aerator)	5 gpcpd
	Fixture leak repair	0.5 gpcpd
	Governmental building (indoors)	5 %
Pressure management	Pressure reduction, system	3 – 6 % of total production
	Pressure-reducing valves, residential	5 – 30%
Outdoor water use efficiency	Low water-use plants	7.5 %
	Lawn watering guides	15 – 20 %
	Large landscape management	10 – 25%
	Irrigation timer	10 gpcpd
Replacements and promotions	Toilet replacement, residential	16 – 20 gpcpd
	Toilet replacement, commercial	16 – 20 gpcpd
	Showerhead replacement	8.1 gpcpd
	Faucet replacement	6.4 gpcpd
	Clothes washers, residential	4 – 12 gpcpd
	Dishwashers, residential	1 gpcpd
Water-use regulation	Hot water demand units	10 gpcpd
	Landscape requirements for new developments	10 – 20 % in sector
	Greywater reuse, residential	20 – 30 gpcpd

APPENDIX D – PUBLIC COMMENT PROCESS & RECORD

1. Overview

In accordance with **NRS 540.131**, Esmeraldo County conducted a formal public participation process to ensure transparency and provide all interested persons an opportunity to offer written or verbal recommendations prior to adoption of the updated Water Conservation Plan. The public comment process documented herein reflects the system's commitment to open governance and compliance with State requirements for conservation plan adoption and review.

Following the close of the public comment period and local approval, the plan was submitted to the **Nevada Division of Water Resources (NDWR)** for statutory review and confirmation of compliance, as required under NRS 540.131.

2. Public Notice and Availability of Draft Plan

2.1 Notice of Intent to Update the Conservation Plan

Goldfield Town Water issued a Notice of Intent to Update the Water Conservation Plan, which was posted for public awareness at the following locations:

- Goldfield Town Water Office (337 Elliott Ave.)
- Goldfield Post Office
- Esmeralda County Courthouse
- Esmeralda County Website (Public Notices)

These postings ensured public availability during normal business hours, consistent with NRS expectations for plan accessibility.

2.2 Public Access to Draft Plan

A complete draft of the updated Water Conservation Plan was made available for a minimum of **30 days** at:

- Goldfield Town Water Office
- Esmeralda County Clerk's Office
- Goldfield Public Library
- Esmeralda County website (digital copy)

Members of the public were allowed to request printed copies at no cost.

3. Public Comment Submission Methods

Goldfield Town Water provided the following submission pathways:

- **Written comments:** Accepted by mail or hand-delivery to the Public Works Department.
- **Email submissions:** Directed to the Public Works Department address.
- **Online submissions:** Public comment form available on the Esmeralda County website.
- **In-person comments:** Accepted during a publicly noticed advisory board meeting (see Section 4).

All submitted comments were logged by staff, including date, contact information (if provided), and nature of the comment.

4. Public Meeting and Oral Comment Opportunity

A publicly noticed meeting of the **Esmeralda Board of Commissioners** was held to:

1. Present the draft Water Conservation Plan,
2. Summarize major updates since the previous plan, and
3. Receive oral feedback from residents, businesses, and other stakeholders.

The meeting was conducted in compliance with Nevada Open Meeting Law, and attendance was open to all members of the public.

5. Summary of Public Comments Received

Goldfield Town Water compiled all written and oral comments received during the comment period. Comments generally fell into the following categories:

- Clarification requests on drought triggers and conservation stages
- Requests for more outreach on water waste penalties

A full table of comments and responses can be included as desired.

6. Responses and Revisions

Goldfield Town Water reviewed all comments and incorporated revisions where appropriate.

The following actions resulted from the public review process:

- Expanded clarification in the Drought Contingency section regarding voluntary vs. mandatory restrictions
- Improved explanation of planned AMR (Automatic Meter Reading) deployment
- Additional language added to the Public Education section to strengthen outreach commitments
- Clarified language regarding hydrant meter usage and dust-control protocols
- Updated population projections and references for accuracy

Where comments did not warrant changes (e.g., suggestions beyond current financial or operational capacity), explanations were provided in the administrative record.

7. Finalization and Submission to the State

Following incorporation of relevant changes, the updated Water Conservation Plan was formally approved by Esmeralda County Board of Commissioners on (Insert Date). In compliance with **NRS 540.131**, the final plan was **submitted to the Nevada Division of Water Resources (NDWR)** for review and confirmation of statutory compliance.

The plan will remain available for public inspection at the Town Water Office, the County Clerk's Office, and on the County website.