

8. WATER USE EFFICIENCY

WAC 246-290-810 requires that water system plans and small water system management programs must describe the municipal water supplier's existing Water Use Efficiency (WUE) Program. The municipal water supplier must continue existing levels of water use efficiency.

8.1. METERING REQUIREMENTS

8.1.1. Source Meters

WAC 246-290-496(1) requires that systems measure the volume of water produced or purchased using a source meter or other meter installed upstream of the distribution system. The requirements of this section of the WAC do not apply to volumes of water delivered to a public water system through an emergency intertie; however, interties used as permanent or seasonal sources must have meters. Hutchinson's three emergency interties are not metered.

Hutchinson currently meters production at the District's source of supply. The District's source meters were recently replaced and recalibrated in the summer of 2020. Refer to **Appendix C** for information.

8.1.2. Consumption Meters

WAC 246-290-496(2) requires systems to measure the volume of water delivered to consumers by installing meters on all direct service connections. Systems may serve certain clustered entities through a single meter (e.g. campgrounds, RV parks, mobile home parks, buildings with multiple units, and complexes with multiple buildings served as a single connection).

Hutchinson currently meters all service connections.

As required by WAC 246-290-496(3), the District selects, installs, operates, calibrates, and maintains customer service meters according to generally accepted industry standards and information from the manufacturer. The District is currently undergoing a meter replacement program, updating to an AMI system. This is anticipated to significantly decrease water loss.

8.2. DATA COLLECTION

The Water Use Efficiency (WUE) Rule requires systems to collect production and consumption data on a regular basis and report that information in the annual performance report. Water production and consumption data has numerous uses including: calculating system leakage, forecasting demand, identifying areas for more efficient use of water, and evaluating the effectiveness of the WUE program.

8.2.1. Source and Service Meter Data

The District collects and records daily totals from all source meters; service meter data is collected and recorded twice a year—once in April and again in October. The District uses this data to calculate distribution system losses. Refer to Chapter 3 for District data.

8.3. WATER SUPPLY CHARACTERISTICS

8.3.1. Ground Water Supply

Both of Hutchinson’s wells withdraw water from the Spokane-Rathdrum Aquifer. This aquifer has proven a reliable and high-quality water resource for Hutchinson for generations. The District is not aware of any specific potential impacts to its source. See Table 2-1 for source capacities and information. Refer to Chapter 5 for a discussion regarding supply capacity and demand.

8.3.2. Depth to Water Measurements

Since 1976, Hutchinson Irrigation District has been monitoring the depth to top of the aquifer and quantity of water pumped on a weekly basis; this monitoring has provided valuable data and should be continued. The overall variation in depth has ranged sixteen feet, with the variation in any one year averaging nine feet. The aquifer was recorded fullest in 1984, 1990 and 1993 with a depth of ninety feet to water. The aquifer surface was at its lowest level in 1977 when the depth to aquifer was one-hundred six feet. The figure below graphs the District-recorded aquifer depth measurements from January 2021 through July 2025. The average depth in the main well house (Well No. 1) shows an average depth of 85.83 feet and Well No. 2 has an average depth of 86.44 feet.

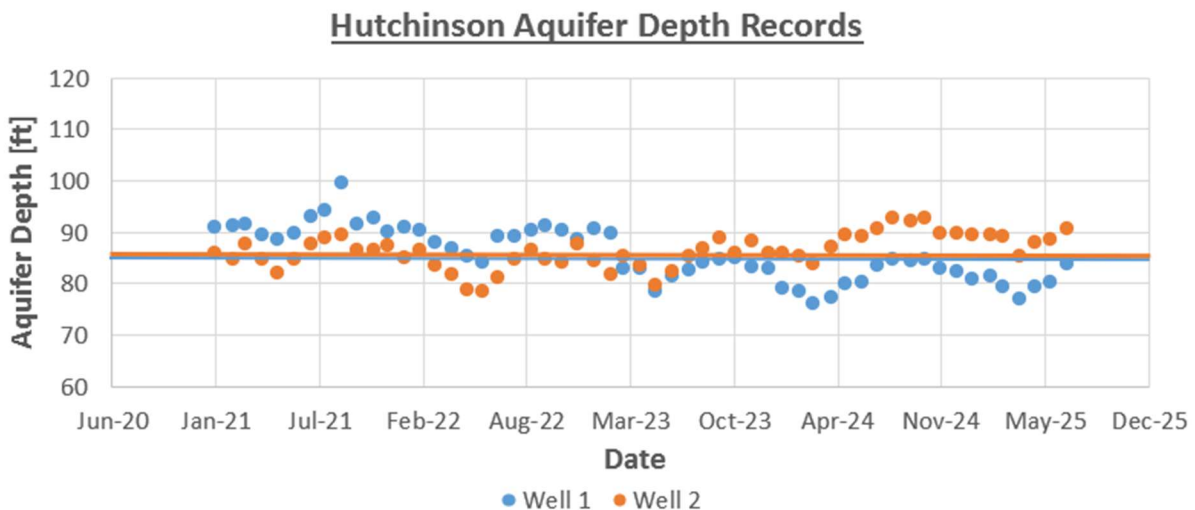


Figure 8-1: District-Recorded Aquifer Depth Measurements

8.4. CURRENT WUE PROGRAM

WUE program elements constitute a long-term voluntary reduction in customer demand through education and water rate structure. Customers are educated annually on how to use water efficiently through the use of information contained in the District’s yearly consumer confidence report.

The District actively participates in public outreach to promote water use efficiency in the normal course of their duties.

8.4.1. Estimated Conservation Savings to Date

The current WLCAP and WUE programs were originally established by staff who are no longer with the District. As a result, it has been challenging to determine exactly how the programs were implemented or how much of the observed changes in production and consumption can be attributed to them. However, analysis was done to compare water production, consumption, and loss over the last few years, particularly during the summer (irrigation) months. The data analyzed stretched from October 2020 through October 2024, and the summer months are defined as April through October. The results of this analysis are summarized in Figure 8-2 below.

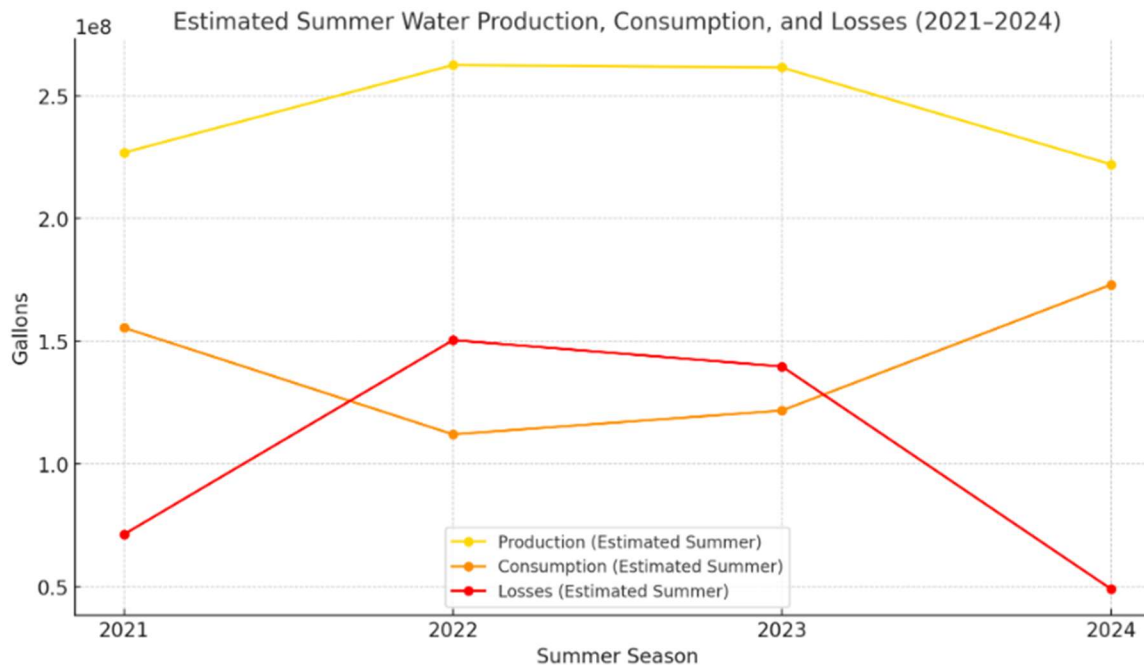


Figure 8-2: Current WUE Estimated Conservation

In terms of production, Summer 2022 had the highest volumes, but since then, has steadily declined. In 2023, it went down 0.4% and in 2024 it decreased further by

3.8%. The total decrease from 2022 to 2024 was equal to 11.2 million gallons, or a 4.3% drop. This follows the trend displayed by losses.

For this analysis, “loss” refers to the difference between metered production and does not exclude known uses such as hydrant draw or documented leaks (as a DSL report would). The winter season consistently loses 80-88% of water. The summer loss has improved; it dropped from 57.3% in 2022 to 50.7% in 2024.

In contrast to the production and loss trends, the analysis showed there was a drop for the summer consumption after 2021. Since then, consumption has slowly risen each year, though it remains approximately twenty-percent lower than the 2021 peak. The exact reason for the reduction in consumption following 2021 is impossible to determine. It is known that across the region, 2021 was an unseasonably hot year that saw high amounts of consumption. Given this information, 2022 likely saw lower use in the summer in part due to cooler temperatures and less irrigation. Population growth since then has undoubtedly contributed to the rise in consumption. From 2022 to 2024, they gained nine new connections.

When observing all three of these metrics in conjunction, it becomes clear that losses greatly affect the system’s production. Patterns in consumption seem to be influenced more by climate variability and modest system growth than by any clearly identifiable effects of the previous WLCAP or WUE efforts. The data highlights the need for the District to prioritize maintaining their distribution system and reducing loss. Moving forward, a more clearly defined conservation program, supported by consistent data tracking and documentation, will better position the District to evaluate program effectiveness and respond to both operational and seasonal demands.

8.5. GOAL SETTING AND THE PUBLIC FORUM

One of the most important steps in achieving efficient water use is setting goals that can be measured. The Water Use Efficiency Rule requires systems to set goals through a public process. Involving the public allows water users to understand the characteristics and future needs of the District’s system and to set a reasonable, attainable goal.

8.5.1. WUE Goals

The last approved WUE goal adopted by Hutchinson was to limit lawn watering to forty-five minutes per irrigation set. As discussed in previous sections, the District was unable to verify prior WUE and WLCAP implementation due to changes in personnel and incomplete documentation. Accordingly, the District is establishing a new, measurable goal as part of this updated Water System Plan.

The proposed goal is as follows:

Reduce production by 3% overall during summer months over the next 6 years.

This goal meets the criteria set forth in WAC 246-290-830(6) by addressing system demand and water loss, including a specific performance measure, and being achievable in a set timeframe. The new goal is aimed at the District's high demand irrigation season. A reduction in summer use directly targets the period when conservation provides the greatest operational benefits and supports overall resource efficiency. Additionally, irrigation season provides the best opportunity for consumer habits to affect overall consumption trends. A three-percent reduction provides a quantifiable benchmark that can be tracked annually using metered production and consumption data. The six-year horizon, beginning in 2026 and ending in 2032, provides a reasonable timeline consistent with DOH's expectation for achievable planning-period goals. Implementation schedules are discussed in **Section 8.6** for each individual measure.

The District views this as a reasonable goal given the observations described in the previous section. District Staff will present the proposed goal to the Board at the upcoming monthly meeting. The District will hold a public forum to allow the public to comment and revise the goal if necessary.

8.5.2. Public Forum for Establishing WUE Goal

The Water Use Efficiency Rule requires that systems allow customers and interested members of the public to participate in the goal setting process through a public forum. This allows the public an opportunity to provide input on the decisions and it helps customers to understand the need to use water more efficiently and how they can help achieve the WUE goal.

The District conducts public forums when establishing or revising the WUE goals in accordance with the requirements of WAC 246-290-830(4). The District intends to hold a public forum regarding the new goal prior to the beginning of 2026, after DOH's review period has concluded. See **Appendix I** for WUE related items.

8.6. EVALUATION OF WUE MEASURES

8.6.1. Required Number of WUE Measures

The District serves approximately 881 connections. The following table contains the number of measures systems must either implement or evaluate for cost-effectiveness based on the number of connections served.

Table 8-1: Required Number of WUE Measures

Number of Connections	Less than 500	500 –999	1,000 – 2,499	2,500 – 9,999	10,000 – 49,999	50,000 or more
Number of WUE Measures Required	1	4	5	6	9	12

The District must implement at least four measures. It is important to note that supply-side measures—such as meter upgrades, leak detection surveys, and water audits—focus on identifying and controlling leakage, but they do not count toward the minimum number of elective measures required under WAC 246-290-810(4)(d)(i). Certain efficiency measures are mandatory and similarly excluded from the elective count.

8.6.2. WUE Measures Evaluated and Implemented

The following Sections summary of the WUE measures--both the base requirements and the additional requirements--approved by the District.

8.6.3. Measure #1: Install Production (Source) Meters

The District has already completed this base requirement and performs regular upkeep of the meters to ensure proper operation. It is difficult to estimate water saving from this measure however it will contribute to achieving the District’s WUE goal.

8.6.4. Measure #2: Install Consumption (Service) Meters

The District is currently in the process of replacing the existing meter system with a new AMI reading system. This upgrade will allow for more reliable data access and leak detection. It is difficult to estimate water saving from this measure however it will contribute to achieving the District’s WUE goal.

8.6.5. Measure #3: Perform Meter Calibration

The source meters experienced significant damage and required both recalibration and replacement in 2020. The District maintains upkeep of the system to ensure proper operation. It is difficult to estimate water saving from this measurement, however it will contribute to achieving the District’s WUE goal.

8.6.6. Measure #4: Implement a WLCAP to Control Leakage

The District has updated its WLCAP to promote water conservation. The details of the Plan are discussed in a later section. It is difficult to estimate water saving from this measure however it will contribute to achieving the District’s WUE goal.

8.6.6.1. Measure #5: Customer Education

Annual customer education to inform users about the need and the methods for water conservation is a required element of all WUE programs. The District's primary method of educating customers is done through its Consumer Confidence Report (CCR), which is mailed to customers each year.

In addition to the CCR, the District may evaluate and implement other forms of education. Currently, the District is in the process of developing a website that will serve as a platform for sharing water conservation tips, recommended practices, and information on water-saving devices and techniques. The District also mailed customers a postcard with information about individual water use efficiency ahead of their WUE goal setting public meeting. It is difficult to estimate water saving from this measure, however, it will contribute to achieving the District's WUE goal.

8.6.6.2. Measure #6: Implement Water Phases By Address

The District plans to implement a voluntary lawn watering schedule to reduce irrigation consumption. During the months of July and August, all outdoor watering should be completed before 10:00 a.m. Properties with even-numbered addresses should water on Monday, Wednesday, and Friday, while odd-numbered addresses should water on Tuesday, Thursday, and Saturday. Using this system, no one will be watering their lawns on Sunday. By encouraging customers to irrigate only every other day in the morning, the schedule reduces evaporation, decreases peak hour demand, and lowers the overall volume of water used outdoors. Please note this measure is strictly voluntary and the District still meets the required number of additional measures without this measure being implemented. Because of the voluntary nature, it is difficult to estimate water saving from this measure. However, it will contribute to achieving the District's WUE goal by reducing consumption during the irrigation season.

8.6.6.3. Measure #7: Incorporate Conservation-Based Rate Structure

The District recently reassessed and adopted a revised rate structure with the primary objective of generating sufficient revenue to fund critical capital improvement projects. A detailed description of this structure is provided in **Section 7.4**. Under the new framework, all water consumption is subject to a volumetric (per-gallon) charge. Unlike the previous structure, which included an allocation of consumption within the base rate, the updated design ensures that every gallon used carries a direct, measurable cost.

This approach supports the District's Water Use Efficiency goals by encouraging customers to more closely monitor and manage their water use. When consumption is no longer included in the base rate, customers are less likely to view a portion of their usage as "free," and are more motivated to eliminate wasteful practices, repair leaks promptly, and adopt efficient irrigation habits.

In addition, the long-term capital improvement projects funded by this rate change will further reduce water loss by addressing infrastructure that is nearing or at the end of its useful life. Reducing real losses within the system complements the conservation achieved on the customer side, improving overall system efficiency.

This rate structure counts as three separate WUE measures because it is applied across five different customer classes: single family, multifamily, duplexes, commercial, and irrigation. These classes are categorized based on their land use and the number or type of dwelling units, as shown in the table below.

Table 8-2: Customer Class Descriptions

Customer Class	Description
Single Family	Individually metered residential homes served by one dwelling unit per lot.
Multifamily	Residential properties containing three or more dwelling units served by a shared meter or multiple meters.
Duplex	Two attached dwelling units located on a single parcel, typically served by one or two meters.
Commercial	Non-residential customers such as businesses, offices, schools, or other institutional facilities.
Irrigation	Accounts dedicated solely to outdoor water use, typically for lawns, landscaping, parks, or common areas.

Although the gallon charge and annual meter replacement charge are applied consistently across all accounts, the measure is implemented differently for each customer class based on how water is typically used:

- Multifamily** customers are billed differently depending on the number of units. Accounts with fewer than five units are billed a single base rate, while accounts with five or more units are billed one base rate plus a quarter of a base rate per unit. Although individual tenants may not receive water bills directly, this structure encourages property owners and managers to implement water-efficient fixtures, appliances, and landscaping, as higher overall consumption increases operating costs for the property. By linking costs to total water use and unit count, the rate design promotes conservation at the property level.
- Irrigation** accounts experience seasonal variations in consumption, so the gallon charge provides a direct incentive to reduce outdoor water use during high-demand months.

- **Commercial** accounts vary widely in size and usage patterns, and the universal gallon charge ensures that higher-use customers pay proportionally more, encouraging efficiency.
- **Single family and duplex** customers are billed the standard base rate and gallon charge, which promotes conservation at the individual household level.

While it is difficult to quantify the specific water savings attributable solely to this measure due to overlapping factors such as weather, irrigation demand, and ongoing leak detection efforts, the rate structure is expected to contribute meaningfully to the District's progress toward meeting its established WUE goals.

8.6.6.4. Measure #8: Notifying Customers About Leaks on Their Property

As part of the updated rate structure and ongoing system management, District staff proactively monitor customer billing data to identify accounts with unusually high consumption patterns. Staff contact the customer directly to notify them of the potential for a leak on their property. This measure supports the District's Water Use Efficiency goals by reducing avoidable water loss on the customer side of the meter. By alerting customers early, the District helps minimize prolonged leakage, encourages timely repairs, and fosters greater customer awareness of responsible water use. This counts as one additional measure and will contribute to achieving the District's WUE goal

8.6.6.5. Budget for WUE Measures

The District estimates the selected WUE measures will cost approximately \$6,000 annually. This includes \$2,000 per year to implement the WLCAP, \$2,000 per year to educate customers, and \$2,000 per year for water phasing efforts. The measures will be implemented after the public forum.

8.7. EVALUATING EFFICACY OF WUE MEASURES

The District will monitor total system annual water use and average customer water use to determine whether WUE measures reduce actual water use.

8.8. DEMAND FORECASTING – PROJECTED CONSERVATION

The Demand projections developed in Section 3 do not take into account WUE efforts that might reduce future demand. However, with planned WUE measures the District believes it possible to save three percent overall during the summer season over the next six years. If the current trends continue, the gradual decrease in water loss is expected to persist well into the future, contributing to improved system efficiency and long-term resource sustainability.

A three-percent reduction would mean reducing ADD per EDU by three percent. Referring to Table 3-11, approximately 18,426,000 gallons over the 2032 irrigation season would be saved by reaching this goal. A successful reduction in consumption by 2032 would result in the following demands during the irrigation season.

Table 8-3: WUE Demand Projections

	ERUs	Connections	Population	ADD (gpm)	ADD (gpm/EDU)	MDD (gpm)	MDD (gpm/EDU)
Current 2025	1,627	881	2158	1,145	0.704	2,015	1.238
WUE Goal 2032	1,732	938	2298	1,182	0.683	2,081	1.201
10-Year 2035	1,779	964	2361	1,215	0.683	2,138	1.201

The District plans to review water consumption annually to determine success of WUE efforts. The District also plans to review its WUE program annually to evaluate future water saving targets and assess program benefits versus costs.

8.9. DISTRIBUTION SYSTEM LEAKAGE STANDARD

The District uses two separate metrics to quantify leaks in their system. The first metric, as discussed in Section 8.4.1, is loss. Loss is strictly the difference between metered production and metered consumption. Table 3-4 quantifies loss in gallons per minute per season. Loss is further discussed in Section 8.4.1.

The second metric is distribution system leakage (DSL). The Water Use Efficiency Rule divides system water use into two categories: authorized consumption and DSL. DOH defines authorized consumption as the volume of water authorized for use by the water system. In addition to normal water sales metering records, systems can track and estimate other types of authorized water uses such as:

- Maintenance flushing of the water system
- Firefighting and hydrant testing
- Cleaning of water tanks or reservoirs
- Street cleaning

DOH considers DSL all water use not authorized by a water system; this includes both apparent losses and real losses such as:

- Leakage
- Theft
- Meter inaccuracies
- Meter reading errors
- Data collection errors
- Calculation errors

- Water main breaks

The District calculates DSL by comparing source production meters with water sales from customer meters *while accounting for authorized water use*. This is the key difference between loss and DSL. **Table 3-5** contains the District's current calculated DSL. As shown, the three-year average for DSL is approximately twenty-nine percent.

For example, in 2024, the District's loss was equal to sixty-two percent, or 247 million gallons. The District was able to account for 167 million gallons through the authorized use categories described above, which left eighty million gallons unaccounted for; this gave a DSL estimate of twenty-two percent, which comes out to one-hundred fifty-two gallons per minute.

There are several factors contributing to DSL numbers including such as leaks, meter inaccuracies, unmetered usage, and/or personnel error. As discussed in **Section 5.6.5**, the distribution system contains approximately 2 miles of asbestos cement mains that frequently experience leaks. In addition to an aging distribution system, in the Summer of 2020, damage to the source meters occurred. It is unknown how long they were unable to be read, but this is considered to be a major source of inaccuracy in data collection. Personal errors in spreadsheets have also undoubtedly contributed to DSL numbers in the past. With new personnel on board, steps are being taken to correct persisting data collection and calculation errors, but it is impossible to go back through years worth of excel sheets and catch every wrong formula.

Despite the known issues the District is facing, there has been some improvement in recent years, with the DSL three-year average decreasing from approximately forty percent in 2022 to twenty-nine percent in 2024. The decreasing trend is presumably due in part to the District's efforts in water main replacement and other methods aimed at increasing the system's overall efficiency. Overall, the District's loss and DSL remain well above the industry standard. This points to the need for continued improvement and emphasis on maintaining system infrastructure.

8.10. WATER LOSS CONTROL ACTION PLAN

The District is currently improving data accuracy and collection methods to better identify and correct reporting errors, as that is where the District believe most of the "loss" is coming from. A revised record-keeping spreadsheet has been developed to support this effort, alongside continued progress on the service meter replacement program. The upgraded metering system will allow for more accurate and frequent readings, enabling quicker detection and response to leaks. The District is also planning on replacing aging and distribution lines that frequently break. These efforts are part of the District's long-term strategy to reduce system loss to the recommended level of ten percent.

Table 8-4: WLCAP Implementation Schedule

Control Measure	Estimated Completion Date ¹	Estimated Cost ²
Revised record-keeping spreadsheet	2025	
Upgrading customer meters	2026	\$300,00 - \$400,000
Broadway Ave pipe replacement (4,000 LF)	2030	\$1,600,000
Bessie Rd pipe replacement (1,820 LF)	2033	\$728,000
Valleyway Ave pipe replacement	2036	\$800,000
Vista Rd pipe replacement	2039	\$920,000

¹Represents preliminary schedule. Projects will be completed when budget allows.

²Estimated Costs are shown in 2025 dollars and do not account for future inflation

The estimated cost for implementing these measures is approximately \$4.48 million, with full completion anticipated over the next ten to twenty years, depending on the District’s financial opportunities.

8.11. EVALUATION OF CONSERVATION ORIENTED RATE STRUCTURE

In Fall of 2024, Hutchinson Irrigation District engaged Welch Comer to evaluate its existing rate structure. The primary objective was to determine whether current revenues sufficiently cover operating expenses, support the District’s capital improvement plan, and meet reserve goals. An additional goal was to encourage water conservation through a more efficient and equitable rate structure.

The Board and District staff reviewed several rate options to address rising costs and fund infrastructure upgrades, while also simplifying the structure. The revised rate maintains the monthly base rate of \$34 but eliminates the annual volume allotment. All water use is now charged at \$1.10 per 1,000 gallons, encouraging conservation by directly linking cost to consumption. The separate irrigation charge and associated allotment have been removed.

Starting in 2026, a six-dollar monthly capital improvement charge will be added to support priority projects. The District will continue monitoring financial performance and adjust as necessary to meet long-term fiscal and sustainability goals.

8.12. RECLAIMED WATER OPPORTUNITIES

At this time, the District does not have the ability to implement a reclaimed water system because it does not own or operate the sewer utility. Reclaimed water is typically produced from treated wastewater and requires direct access to, and control over,

wastewater collection and treatment infrastructure. In this case, Spokane County owns and operates the sewer utility and all associated treatment facilities. Any reclaimed water program would therefore require a formal partnership with Spokane County, including interagency agreements addressing wastewater access, treatment standards, permitting, conveyance, operational responsibilities, cost sharing, and long-term ownership and liability. At present, no such partnership exists, and the infrastructure needed to deliver reclaimed water to potential users is not in place.

Water currently categorized as system loss, such as hydrant flushing, is not a practical source for non-potable reuse under current District conditions. Hydrant flushing is performed intermittently for water quality and maintenance purposes and occurs at varying locations throughout the distribution system. Capturing, storing, and redistributing this water would require significant additional infrastructure and operational coordination. As a result, hydrant flushing does not represent a feasible or reliable source for meeting ongoing non-potable water demand at this time.

If future conditions indicate declining aquifer levels or source capacity limitations, the District may reevaluate reclaimed or alternative non-potable water opportunities in coordination with Spokane County and other agencies, as part of a broader, long-term water supply planning effort.