



February 10, 2025

Kerri Cope
Tamera Smith
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, OR 97301

Dear Kerri and Tamera,

GSI Water Solutions, Inc. is submitting this Water Management and Conservation Plan (WMCP) Progress Report on behalf of Water Wonderland Improvement District (WWID or District). The Final Order issued by the Department approving WWID's 2019 WMCP included a condition requiring the submittal of a Progress Report by February 10, 2025.

This report contains information that satisfies the Department's requirements for progress reports. These requirements include descriptions of: 1) progress toward implementing conservation benchmarks, 2) average rates of diversions, 3) historical water consumption by customer categories, and 4) the results of annual water audits.

Conservation Benchmarks: WWID's 2019 WMCP described conservation measures that were being implemented at that time and described future measures and associated benchmarks. Exhibit 1 includes progress on these benchmarks.

WWID continues to implement all the required conservation measures as demonstrated in Exhibit 1. For example, WWID has added a flyer insert semi-annually to its customer's monthly billing statements that provides information on efficient water use indoors and outdoors. As another example, WWID meters all customer connections including any new hookups. In addition, a district-wide meter replacement project was completed in March 2015. For this project, all customer meters were replaced with radio read mechanical meters that allows the WWID to read meters 12-months year. In March 2024, WWID began replacing those meters with new ultrasonic, radio read, Solid State Meter (SSM) which are more accurate. As soon as weather allows the remaining meters will be replaced with the SSM by the end of 2025.

Diversions by Wells: Exhibit 2 presents average monthly and daily diversions under WWID's water right from 2019 through 2023 by source (point of appropriation). The averages are based on WWID's water use reports that documented production volumes from master meter reads at the well heads conducted by WWID.

Consumption: Exhibit 3 presents annual volumes of water consumed by WWID's customers from 2019 through 2023.

Over the five-year period, total consumption ranged from a high of 99.6 million gallons (MG) in 2021 to a low of 81.1 MG in 2019, with year-to-year oscillations. Annual changes were likely due to the impacts of peak-season weather on consumption, with outdoor irrigation increasing in warmer, drier summers. In 2019, WWID observed its lowest total consumption over the five-year period, likely due to lower-than-average temperatures and above-average rainfall, which could have decreased irrigation use.

In addition, Exhibit 3 shows consumption for the preceding five years (2014 to 2018) obtained from WWID's 2019 WMCP. This additional consumption is helpful to compare the quantity of usage by customer class and identify trends over a longer period. Generally, water

use in the early part of this period was less than the latter part of this period, suggesting more customers were added to WWID's system as vacant lots in the community were developed. The extreme fire season of 2020 and the heat dome of 2021 are reflected in peak use for the 10-year period.

Water Audits: Exhibit 4 shows the results of annual water audits for 2019 through 2023. Water loss is calculated by subtracting the sum of metered customer consumption and unmetered volumes from the sum of the volume of water produced from WWID's wells. The water loss percentages were calculated by dividing water loss volumes by these demands.

Water loss decreased over the five-year period in part as a result of WWID's replacement of a leaking storage reservoir (called the Merganser Cistern) in 2020 at a cost of \$463,000. In addition, WWID replaced five leaking gate valves in 2022 as a result of hiring Cascade Water Works who evaluated the valves. There are other leaking valves scheduled to be replaced. It should be noted WWID continues to implement water loss reduction measures outlined in its WMCP in order to achieve annual water loss of at least 10 percent. For example, WWID is targeting water loss control measures at the lower end of its service area.

In October 2022, at the Merganser wellsite, a faulty iMag meter was discovered and was repaired in December 2022. This contributed to lower production numbers that year and are not included in the averages for production, water loss, and percent loss.

Despite the significant decrease in water losses observed by WWID as a result of WWID's water loss reduction measures, WWID's water loss was above 10 percent in 2023. For water loss above 10 percent, WWID is required to implement a leak detection and repair program, a line replacement program, or a water loss control program consistent with the American Water Works Association (AWWA). Since 2021, WWID has implemented its leak detection program annually. This program consists of line leak surveys to help identify system leaks in the water system. WWID has contracted with the Oregon Association of Water Utilities and American Leak Detection to perform these surveys. The District will continue to implement its leak detection program annually, focusing on areas of the water system prone to leaks and expanding to the remainder of the system over time. Discovered leaks are repaired immediately or placed on a list for future repair, depending upon the leak size. Though not required, WWID will also utilize AWWA's Free Water Audit Software in 2025 to identify potential improvements to its water audits.

If you have questions regarding the enclosed information, feel free to call me at 971-236-2550 or send an email to thenkle@gsiws.com.

Sincerely,
GSI Water Solutions, Inc.



Tim Henkle
Water Resources Consultant

Cc: Leslie Graff, Manager
Water Wonderland Improvement District

Exhibit 1. Conservation Benchmarks

Conservation Measures	2019 Conservation Benchmark	Progress in Meeting 2019 Conservation Benchmarks
Water audit	The District compares production to consumption on an annual basis.	The District continues to perform production to consumption comparisons annually and monthly. In addition to performing a water audit, this data is used to identify system leaks and leaks on the customers' sides of the meters and assess production meter accuracy by comparing production meter readings at the wellheads to master meters downstream in the distribution system. The District replaces leaking or malfunctioning valves when discovered.
System-wide metering	Continue full metering of the water distribution system and the District installs meters at all new water connections.	WWID meters all its customer connections and continues to install meters on all new connections. The District began replacing all existing meters with Solid State Meters which are more accurate and will be completed at the end of 2025.
Meter testing and maintenance	The District investigates meters in response to unusually high or low meter readings on customer invoices and when customers contact the District with concerns of meter inaccuracy. In these cases, the District may either replace the meters in question if the District believes the meters have failed or repair the meters.	WWID's radio read meters detect leaks and a leak report is generated every month when meters are read. A report is also generated for meters that indicate low, high, and zero usage. Staff investigates these reports and replaces meters as needed. The District continues to troubleshoot and investigate meters when customers call with concerns.
	The District will establish a production meter testing and maintenance program to include production meter testing and, as warranted, maintenance, consistent with meter manufacturers' recommendations.	The District's production meters are magnetic meters that can retain accuracy levels over long periods of use. As a result, the manufacturer's recommendations do not suggest periodic testing. The District will continue to assess meter accuracy based on historical meter reads and against newly installed distribution system master meters. Meters that are suspected of failure will be tested and calibrated, repaired, or replaced, as needed.
Unit-Based Billing	The District will continue to bill customers based, in part, on the volume of water consumed.	The District continues to bill customers on a tiered structure based on volume consumed and is currently contracted with Oregon Association of Water Utilities to complete a Water Rates Study. The study will be completed by March 2025 and will be implemented in July 2025. The volume included in the base rate is expected to be reduced in order to encourage water conservation.
Water Loss Analysis	Over the next two years (by Feb 7, 2022), the District will assess the results of the replacement of the Merganser cistern and meter replacement.	Since the completion of the new Merganser steel bolted reservoir in December 2019, which replaced the leaking concrete cistern, the District saw a significant reduction in its water loss by end of year 2021--this decrease was reflected in water loss estimates for 2022 and 2023.
	The District has included evaluation of leaks in the system in its capital improvement plan described in the recently completed Water System Master Plan.	The District began evaluating leaks in the lower end of the District's service area, an area historically prone to leaks, and has continued this evaluation annually. The evaluation consists of using leak detection equipment to find suspected leaks. Detected leaks are repaired. The District also performs leak detection in this area proactively to identify new leaks. Furthermore, distribution system valves were tested as part of the valve maintenance program and several were determined to contribute to leaks. These malfunctioning valves were repaired.

Conservation Measures	2019 Conservation Benchmark	Progress in Meeting 2019 Conservation Benchmarks
	Within the next five years, the District will provide the Department with a description of activities, audit results from 2019 through the first full year after any leaks have been resolved, and, if needed, a description and analysis of other potential factors for negative water loss estimates.	Through publication and submittal of this progress report, WWID has met this benchmark by describing the activities and associated audit results. WWID has not experienced negative water losses in the previous five years. However, as a result of the District's water loss for 2023 that exceeds 10%, the District has identified and began implementing a leak detection and repair program consistent with OWRD requirements.
	The District will also conduct additional evaluations of potential leaks in the system, particularly during the non-peak season.	The District is vigilant in watching for leaks during non-peak season by driving around and visually looking for leaks. Customers are notified of potential leaks in their system as found by the monthly meter reading leak reports.
	If the described actions do not result in reduction of water losses to 10 percent or less within five years of approval of this WMCP, the District will develop and implement a regularly scheduled and systematic program to detect and repair leaks in the transmission and distribution system or develop and implement a water loss control program consistent with AWWA standards.	As noted above, the District has contracted with Oregon Association of Water Utilities and American Leak Detection to help identify leaks in the system. The District will continue to implement its leak detection program annually. The District will also download and utilize the AWWA Free Water Audit Software in February 2025.
Public education	Continue educating customers on an as-needed basis and participating in area-wide educational events as requested.	Twice annually the District sends out a District Update mailer to its customers, which includes water conservation information. Once annually the District holds an annual meeting, at which water conservation methods are discussed and information is available. This same information is available to customers at the District office.
	The District will continue to send mailers once annually to its customers focusing on efficient outdoor water practices.	
	In addition, over the next two years, the District will include information about water-wise indoor practices in its annual Consumer Confidence Report.	Consumer Confidence Reports are mailed every year with water-wise information included.
	Over the next three years, the District will provide a brochure on water conservation at the bill pay desk in the District's administrative building.	A water conservation flyer is available at the district office.
Not required		
Additional Conservation Measures ¹	Not required	WWID continues to read meters monthly and bill customers monthly.
	Not required	Leaks discovered within the District's system are repaired immediately if the leaks are large, or, for small leaks, as soon as possible before the leaks get too large.

Exhibit 2. Average Monthly and Average Daily Diversions, 2019-2023

Water Use Report ID	Source	Application	Permit	Certificate	Transfer/ Permit Amendment	2023 WY Average Withdrawal			Five-Year (2019-2023 WYs) Average Withdrawal		
						Annual (MG)	Monthly (MG)	Daily (mgd)	Annual (MG)	Monthly (MG)	Daily (mgd)
33285	Seaborn (Seevers) (DESC 1441)	G-13627	G-12649	-	T-13633	23.13	1.93	0.06	20.56	1.71	0.06
33286	Crane (DESC 6340)					42.90	3.58	0.12	51.14	4.26	0.14
33287	Merganser (DESC 1656)					48.11	4.01	0.13	43.71	3.64	0.12

Key
 WY = Water Year
 MG = Million gallons
 Mgd = million gallons per day

Exhibit 3. Consumption by Customer Category by Year, 2014-2023

Year	Residential (MG)	Commercial (MG)	Total (MG)
2014	*	*	76.0
2015	*	*	71.4
2016	*	*	78.8
2017	*	*	82.1
2018	*	*	88.1
2019	*	*	81.1
2020	*	*	98.6
2021	*	*	99.6
2022	90.5	<0.1	90.5
2023	94.3	0.3	94.6

* Commercial and residential consumption was disaggregated for 2022 and 2023, but not for previous years.

Exhibit 4. Historical Water Loss, 2019-2023

	Total Production (MG)	Consumption (MG)			Water Loss (MG)	Water Loss %
		Residential	Commercial	Total		
2019	113.5	81.1	*	81.1	32.3	28.5%
2020	129.3	98.6	*	98.6	30.6	23.7%
2021	118.6	99.6	*	99.6	19.0	16.0%
2022**	93.2	90.5	<0.1	90.5	-	-
2023	114.9	94.0	0.3	94.3	20.6	17.9%

* Commercial and residential consumption was disaggregated for 2022 and 2023, but not for previous years.

** The Merganser well was offline October-December 2022 for repair.