COMPREHENSIVE CORRECTIVE ACTION PLAN

SOUTH HOPKINS WATER DISTRICT

JUNE 2023

Updated October 2024

EXECUTIVE SUMMARY

This report is in response to Kentucky Public Service Commission Order Case No. 2023-00018 which directed the South Hopkins Water District to develop a comprehensive corrective action plan to reduce unaccounted for water loss (UW) to 15%. The deadline for filing is June 12, 2023. The updated version is due October 11, 2024.

In 2017, South Hopkins Water operated with an annual UW of 17.68%. UW has been steadily on the rise since 2018 as a result of aging infrastructure and storage facilities. This plan will list specific corrective actions focused on improving and replacing infrastructure and increasing the operational loss reduction capacity of South Hopkins Water District. Major items of work will include replacement of the oldest service lines, replacement of meters with new radio-read meters, hiring of staff or contractors for leak detection, purchase of listening devices, and purchase of equipment needed to maintain daily operations and reduce repair times.

The goal is to reduce UW to 15% by 2027. In doing so, South Hopkins Water District hopes to achieve regulatory compliance, develop a sustainable operation, and provide the citizens of Hopkins County with a reliable source of water for decades to come.

INTRODUCTION

In February 2023, the Public Service Commission ordered South Hopkins Water District (SHWD) to prepare a comprehensive corrective action plan to reduce water loss.

For the calendar year 2022, the SHWD reported 36.5382% unaccounted water loss. The PSC has encouraged SHWD to reduce its unaccounted water loss (UW) to

15% annually. The goal of this corrective action plan is to reduce UW to 15% over the next three years.

SYSTEM INFORMATION

SHWD was established in 1965 and is located at 129 South Main Street, Dawson Springs, Kentucky 42408. SHWD provides potable water service to approximately 7,919 customers in Hopkins County. SHWD is regulated by the Public Service Commission and Division of Water. SHWD is a distribution system and purchases all of its water for resale from the City of Dawson Springs Water System and City of Madisonville.

The sections below discuss SHWD existing lines, meters, staff, master meters, materials on hand, and shut-off valves. The objective is to provide an overview of the system and identify potential sources of UW in the system.

Lines

Summary – SHWD is composed of approximately 285 miles of transmission, distribution, and service line. The lines were installed from 1967 to 1995 and range in size from 16-inch diameter to 2-inch diameter. The types of lines include polyethylene (PE), polyvinyl chloride (PVC), cast iron (CI), asbestos cement (AC), and ductile iron (DI). The majority of the lines are composed of 6-inch and 8-inch AC.

Potential Source of UW – Improper installation, improper application, and environmental influence can shorten a water line's useful life. When lines were installed corp stops were drilled into AC lines with no saddles. Corp stops do not have gaskets; this causes leaks to occur much sooner in the life of a water line.

Meters

Summary – The SHWD system contains approximately 2944 meters including residential meters, commercial meters, and master meters. The types of meters vary as do the dates of installation. The following is a breakdown of the meters in the system based on application as of April 2023.

Meter Count	Application
2814	Residential
109	Commercial
19	Public

2	Industrial

Potential Sources of UW – Meters can be a source of water loss due to aging and other factors. Sometimes a meter can lack accuracy even if it is still within its "lifespan". For some meters, the older they get, the slower they are, causing inaccurate readings for the bills. If all the water is not counted for, this creates a water loss.

Staffing

Summary – SHWD currently employs one (1) Superintendent and four (4) maintenance/labor staff. Maintenance of lines, meters, pump stations, vehicles, and equipment are currently done in house.

Potential Source of UW – Time spent operating SHWD daily consumes the majority of staff hours. This reduces time to locate leaks that are not immediately apparent.

Master Meters

Summary - There are only two "main" master meters that record the water passage out of Dawson Springs (where the water is purchased). Both of these "main" master meters cover a very large area.

Potential Source of UW- Being as there are only two master meters in a huge area, it's harder to track possible leaks. Monitoring with 2 master meters limits ability to quickly detect leaks to geographical span.

Materials on-hand

Summary- Leaks can happen at any point. It's important to have all the necessary materials to repair line breaks.

Potential Source of UW- As previously stated, leaks can happen at any given time and is obviously the main source of water loss.

Replacing shut-off valves

Summary- There are many shut off valves on main lines throughout the district that need to be replaced. These are used when repairing breaks and leaks.

Potential Source of UW- When repairing a line break, especially a main line, there are valves that need to be turned off to prevent more water from gushing through. If the valves can't be turned off, more water will be lost while trying to repair the leak.

1. Line Replacement – SHWD will continue to replace lines when leaks are found. One way of finding the leaks is to use the leak detectors that the District recently purchased. These will be key in finding service line leaks that are harder to detect otherwise. Another way to find leaks that are in very rural or hard to reach places would be the use of drones. Other Districts are already using drones to find leaks in these places.

2. Radio Read Meters – Replacing the older, manual meters with radio reads would drastically help in numerous ways. First, they would be more accurate in accounting for all the water that goes through the meter for customer consumption. Second, there will be less error in recording the readings for billing, having more accurate bills and third, reading meters takes two full work weeks to do, while radio reading can be achieved in two days giving the employees more time to focus on repairing leaks and maintaining the system.

3. Staffing – As mentioned before, there is not enough staff to have someone search for leaks and other forms of water loss on a regular basis. Hiring a part time staff member whose only job is to search for leaks would greatly benefit the water loss issue.

4. Master Meters- Placing more master meters at different spots throughout the district could help determine where leaks are. Further dividing the already sectioned off areas into smaller sub-categories could help define areas of leaks based on daily usage therefore making leaks easier to detect.

5. Materials on-hand- Using the money from the surcharge account to purchase necessary items needed to fix leaks would help the district greatly financially as well as putting the money back into the district on things that need to be repaired. Having items and materials on-hand makes for a smoother and faster repair time which saves on water loss.

6. Replacing shut-off valves- Installing more shut off valves or replacing existing ones that have outlived their life, would help in water reduction by turning off certain areas of water while fixing leaks.

ATTACHMENT
PSC Order For
CASE NO. 2023-00018