

Executive Summary
Source Water Protection Plan
Red Lion Municipal Authority
PWS ID # 7670086-001-002-003



York County, Pennsylvania

APPROVED BY PA DEP: 5/12/2008

REVISED BY RLMA: 9/28/2022

Introduction

The Red Lion Municipal Authority (RLMA) has prepared this updated 2022 Source Water Protection Plan to reflect changes that have occurred in the water system and watersheds since the original plan was prepared and approved by the Pennsylvania Department of Environmental Protection (PA DEP) in 2008.

Since the preparation of the 2008 plan, RLMA has adopted the Source Water Protection Mission and Vision statements shown below.

RLMA Source Water Protection Mission Statement

It is the mission of the Red Lion Municipal Authority and its Source Water Partners to develop and implement a Source Water Protection Plan that provides multiple barriers to contamination that insure the delivery of the highest quality drinking water to all its customers.

RLMA Source Water Protection Vision Statement

Our vision is to involve our Source Water Partners in the development and implementation of an active, efficient, and robust source water protection program that delivers the cleanest raw water possible to the drinking water treatment plant at Cabin Creek. We will work cooperatively with local governments, emergency responders, educators, residents, and agricultural community in our watersheds to ensure that the Cabin and Beaver Creek Watersheds remain the primary source of clean water to the Red Lion Municipal Authority water system.

System Information

PWS SYSTEM NAME: Red Lion Municipal Authority
PWS ID: 7670086-001-002-003
SYSTEM ADDRESS: 11 East Broadway, P.O. Box 190, Red Lion, PA 17356
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The RLMA infrastructure is, as defined by US EPA, a Small Community Water System serving more than 3,300 and less than 50,000 individual drinking water consumers. RLMA serves two categories of customers:

- Direct Customers. Approximately 7,000 direct customers (connections) located in Red Lion Borough and in parts of Windsor, York, and Chanceford Townships.
- Bulk Water Customers. Two bulk water customers: Dallastown-Yoe Water Authority and the Windsor Borough Water and Sewer Authority. Both of these customers resell bulk water supplied to them by RLMA to their individual customers. The Dallastown-

Yoe Water Authority serves the entirety of both Dallastown and Yoe Boroughs and parts of York Township. The Windsor Borough Water and Sewer Authority serves primarily the residents of Windsor Borough.

System Design & Description

Watersheds

The raw untreated water supplying the drinking water treatment plant along Cabin Creek in Windsor Township comes from three watersheds.

1. The 4.2 square mile Cabin Creek watershed, including the Cabin Creek Reservoir, above the drinking water treatment plant. The reservoir is an 11-acre lake containing approximately 38 million gallons of water.
2. The 6.0 square mile Beaver Creek watershed above the small reservoir and pump station in Lower Windsor Township.
3. The Susquehanna River watershed above the confluence of Greenbranch and the Susquehanna River.

Most raw water is supplied from the Cabin Creek and Beaver Creek watersheds with supplemental flows during emergency or drought conditions supplied by the connection to the Susquehanna River at Greenbranch.

Under emergency conditions, the raw water from any one watershed can be physically isolated from the raw water from the remaining watersheds thus guaranteeing that the intentional or accidental contamination of any two of the three water sources will not disable the entire system.

Drinking Water Treatment Plant

A new drinking water treatment plant was constructed along Cabin Creek in Windsor Township in 2013 – 2016 and became operational in April 2016. The plant is of conventional design including pre-treatment, flocculation, settling, and final sand/carbon filtration. Four hundred thousand gallons of finished chlorinated water are stored onsite until pumped into the water distribution system.

Following construction of the new drinking water treatment plant, the old plant was converted to a wastewater treatment plant where flocculation and sedimentation are used to treat filter backwash water before being discharged to Cabin Creek below the water treatment plant intake. The wastewater treatment plant operates under an NPDES permit issued by PA DEP (PA0261581).

Purpose of Plan Development

The goal of this Source Water Protection plan is for the Red Lion Municipal Authority to take the necessary steps that will protect its water supply from potential contamination now and into the future as summarized in our Mission and Vision statements.

Source Water Protection plans are necessary to protect a system from contaminants that are difficult and costly to treat through normal means. This plan clearly identifies actual and potential sources of contamination to the source water. Secondly, it allows communities to effectively educate the public on the importance of their drinking water source. Third, the plan serves as the first step for long-term sustainable planning for the future of the community. Finally, it provides a comprehensive action plan in case of an emergency.

The Local Steering Committee

The Steering Committee is responsible for the forward progress of the SWP Plan, as well as leading projects that will ultimately help to protect the source waters of the Red Lion Municipal Authority water supply.

The Steering Committee is chaired by a member of the committee approved by the Red Lion Municipal Authority.

The Steering Committee is comprised of one or more elected, appointed, and/or staff representatives from the following Source Water Protection Partners:

- Red Lion Municipal Authority
- Dallastown-Yoe Water Authority
- Windsor Borough Water & Sewer Authority
- Red Lion Borough
- Dallastown Borough
- Yoe Borough
- York Township
- Windsor Township
- Lower Windsor Township
- Chanceford Township
- Red Lion Business Association
- York County Conservation District
- Watershed Alliance of York
- York County Planning Commission
- Area Emergency Management Personnel
- Local state representatives' offices
- PA Rural Water Association

In addition, any interested citizen can be a member of the steering committee simply by attending meetings.

All meetings of the Steering Committee are open to the general public. Agendas and minutes for each meeting are prepared and archived by RLMA.

Overview of Source Water Assessment and Protection Program

Pennsylvania's assessment program will:

- (1) Delineate the boundaries of the areas providing source waters for all public water systems; and
- (2) Identify (to the extent practicable) the origins of regulated and certain unregulated contaminants in the delineated area to determine the susceptibility of public water systems to such contaminants.

These assessments are of the raw water quality, not the finished water compliance. DEP will conduct assessments for community water systems supplied primarily by groundwater and serving a population of 3,300 or more. The groundwater sources of public water systems serving less than 3,300 will be initially assessed using readily available data from the program's geographic information system (GIS). Assessments for the larger community water systems supplied primarily by surface water sources will be conducted through contracted services. DEP staff will conduct assessments for community water systems supplied by surface water in basins less than 100 square miles and 90 percent forested.

Why Source Water Protection Planning (SWPP)?

For a water supplier with a surface intake, SWPP is the most important first step that can be taken to ensure higher quality drinking water. The concept of SWPP revolves around the methods used more commonly in watershed management, with a watershed mouth at the intake versus the confluence with another stream.

By performing proper SWPP, a water supplier can explore ways to improve the quality of the water *before* it gets to their plant, increase their involvement in the local community, and allow themselves to be better prepared during times of emergency. The SWPP process has two main components:

- **Assessment** – The first step to proper planning is knowing what you have. By completing visual assessments, watershed tours, and research through various local and state agencies, a complete understanding of what the watershed holds will be achieved.
- **Recommendations and Action** – Once the assessment has been performed, challenges and more obvious next steps will appear. Consolidating all of this information into succinct, clear goals and a realistic timetable will lead to proper watershed management and allow the water system to work efficiently.

Another important step in SWPP is local coordination. After identifying the watershed area for your intake, forming a local steering committee is the next step for success. By holding regular meetings involving other local governments, non-profits, schools, and concerned citizens, implementing projects and addressing watershed challenges will be an easier task over time.

This document is meant to serve as a Source Water Protection Plan which will seek to achieve the two components of Assessment and Recommendations, as they were described earlier. With this completed plan, the water system will have a clear direction for the future with a reference document, while also opening avenues for potential project funding.

Watershed Delineation

A watershed is derived from the local topography and denotes surface water flow in a particular area. Determining the watershed boundary allows the water system to understand what can influence the quality and quantity of the raw water that they treat in their plant. As was previously noted, the Red Lion Municipal Authority uses three surface intakes for their water supply.

Potential Contaminant Source Inventory

Disclaimer

The information contained in this plan is limited to that available from public records. Other “potential contamination sites” or threats to the water supply may exist in the Source Water Protection areas that are not identified in this plan.

Identified Potential Sources of Contamination (PSOC)

Identification of a site as a “potential contamination site” should not be interpreted to mean that this site has or will cause contamination of the water supply.

Within the Cabin Creek and Beaver Creek SWP areas, there were very few traditional PSOCs such as gas stations. Nevertheless, both the Cabin and Beaver Creek watersheds were reassessed for Potential Sources of Contamination as recently as 2018. In total, 18 points were identified, photographed, and mapped.

Identified Challenges

The original Source Water Protection Plan contained a list of identified challenges. Over the first ten years of the plan, many of those challenges were addressed and no longer require attention. For example, many local municipalities strengthened and rewrote their storm water regulations. Likewise, several municipalities rewrote their zoning ordinances and maps. The Source Water Protection Committee has identified the following interrelated challenges as its focus moving forward:

- Education – Perhaps the most important element to the successful implementation of a Source Water Protection Plan is the education of key constituencies . For RLMA those constituencies include: 1) our customers, 2) the residents and businesses located within our source watersheds, 3) agricultural interests within our source watersheds, 4) local and state government officials, and 5) school-aged children. Some of these constituencies overlap, while others do not. The Source Water Protection Committee will develop a strategy and plans for educating each of these communities.
- Emergency Response – Transportation and storage of potentially hazardous substances such as hydrocarbon-based fuels and agricultural and industrial chemicals pose a major threat to source waters. Over the last several years, actions have been taken to address these threats. For example, PennDOT approved signs have been installed along each major route through the Cabin Creek and Beaver Creek watersheds to alert everyone that they are entering a drinking water source area and to call 911 in the event of a spill. RLMA has hosted educational events for emergency responders to educate them about our Source Water Protection Plan and potential emergencies at the water treatment plant. Most importantly, RLMA has emergency response plans for addressing a spill that could contaminate source water. These efforts and relationships need to be continually maintained and strengthened.
- Chesapeake Bay TMDL Support – All three of the watersheds that provide source water to RLMA are within the larger Chesapeake Bay watershed that is subject to a Total Maximum Daily Load program mandated by US EPA and implemented by Pennsylvania’s environmental agencies. The TMDL requires reductions in nutrients and sediments from all watersheds entering the Chesapeake Bay. In Pennsylvania this program is administered by PA DEP and at the local level is implemented by York County and local municipalities. RLMA has no authority for TMDL implementation or compliance. However, many of the actions that will be implemented by local municipalities to comply with the TMDL will also result in improved source water for RLMA. Conversely, actions taken by RLMA to reduce sediments and nutrients will assist York County and Pennsylvania comply with the TMDL. Specifically, implementation of effective municipal and agricultural storm water mitigation programs will reduce nutrients and sediments in RLMA’s source water, lower treatment costs, and improve water quality. Accordingly, RLMA will work cooperatively with York County and local municipalities to implement programs that assist with TMDL compliance and improve source water quality.
- Farmland Preservation – The primary land use within all three RLMA watersheds is agriculture and ranges between simple pasture-land and highly intensive row-crop farming. It is within the interests of the agricultural community, local municipalities, and RLMA to maintain a strong agricultural community and discourage the conversion of agricultural land to other uses. RLMA will work with local municipalities and non-profit organizations to promote farmland preservation and good agricultural practices.

Recommended Actions

The main goals of creating a Source Water Protection Plan are for the water system to implement on-the-ground solutions for the benefit of the drinking water system and its watersheds and to act as an educational tool for the system and the community it serves.

Based on the challenges identified in the previous section, there are a number of specific actions that RLMA can take to protect its source water and improve water quality. Below is a list of those actions and a table with more detail.

Recommended Actions for Implementation

- Maintain/Expand the Local Steering Committee
- Education/Outreach Plan(s)
- Identify projects and actions that assist York County and local municipalities with TMDL compliance and implementation
- Encourage Farmland Preservation
- Update Contaminant Source Inventory

Recommended Actions Summary Table

Recommended Actions	Time Period/Priority	Participating Organization(s)	Brief Description
Maintain/Expand the Local Steering Committee	Ongoing/ Medium	SWP Steering Committee	Expansion of the Steering Committee to include more municipal government and community members.
Education/Outreach Plan(s)	Ongoing/High	SWP Steering Committee Local school districts Local municipalities Local agriculture Local businesses	SWP education must be directed at a number of important communities. A separate plan for each community may be appropriate.
Identify projects and actions that assist York County and local municipalities with TMDL compliance and implementation	Ongoing/ Medium	RLMA York County Local Municipalities Watershed Alliance of York York County Conservation District	There is a natural alignment between the goals associated with source water protection and TMDL compliance. This task seeks to identify actions and projects that benefit both.
Emergency Responder Outreach	Ongoing/High	RLMA Staff Local EMS York County EMS	Expand the existing working relationships between RLMA and local emergency responders. Conduct periodic table-top drills.
Encourage Farmland Preservation	Ongoing/ Medium	SWP Steering Committee York County York County Farm and Natural Lands Trust	Preserving farmland from development protects water quality and benefits everyone.
Update Contaminant Source Inventory	Every Ten Years/Low	RLMA Staff	Having knowledge of the potential contaminant sources in a watershed makes it easier to protect your supply. This task was last completed in 2018.

Conclusions

RLMA has successfully implemented the Source Water Protection Plan approved by PA DEP in May, 2008.

Implementation of this revised Source Water protection Plan will further assure that RLMA and its customers will continue to be provided with clean drinking water for many years to come.