FOR PUBLIC RELEASE

Source Water Protection Plan
Walnut Grove Utilities

PWSID: WV3301942

Jefferson County

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In cooperation with Walnut Grove Utilities

WV Bureau for Public Health, Source Water Assessment and Protection Program

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I Certify the information in the source water protection plan is complete and accurate to the best of my knowledge.

Responsible party of designee authorized to sign for water utility is on file:

Lee Snyder

Name of Authorizing Signatory:

Lee Snyder

Title of Authorizing Signatory:

7/6/2021

Date of Submission (mm/dd/yyyy):

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SOURCE WATER PROGRAM ACRONYMS

AST	Aboveground Storage Tank
BMP	Best Management Practices
ERP	Emergency Response Plan
GWUDI	Ground Water Under the Direct Influence of Surface Water
LEPC	Local Emergency Planning Committee
OEHS	EED Office of Environmental Health Services/Environmental Engineering Division
PE	Professional Engineer
PSSCs	Potential Source of Significant Contamination
PWSU	Public Water System Utility
RAIN	River Alert Information Network
RPDC	Regional Planning and Development Council
SDWA	Safe Drinking Water Act
SWAP	Source Water Assessment and Protection
SWAPP	Source Water Assessment and Protection Program
SWP	Source Water Protection
SWPA	Source Water Protection Area
SWPP	Source Water Protection Plan
WARN	Water/Wastewater Agency Response Network
WHPA	Wellhead Protection Area
WHPP	Wellhead Protection Program
WSDA	Watershed Delineation Area
WVBPH	West Virginia Bureau for Public Health
WVDEP	West Virginia Department of Environmental Protection
WVDHHR	West Virginia Department of Health and Human Resources
WVDHSEM	West Virginia Division of Homeland Security and Emergency Management
ZCC	Zone of Critical Concern
ZPC	Zone of Peripheral Concern

1.0 PURPOSE

The goal of the West Virginia Bureau of Public Health (WVBPH) source water assessment and protection (SWAP) program is to prevent degradation of source waters which may preclude present and future uses of drinking water supplies to provide safe water in sufficient quantity to users. The most efficient way to accomplish this goal is to encourage and oversee source water protection on a local level. Many aspects of source water protection may be best addressed by engaging local stakeholders.

The intent of this document is to describe what Walnut Grove Utilities has done, is currently doing, and plans to do to protect its source of drinking water. Although this water system treats the water to meet federal and state drinking water standards, conventional treatment does not fully eradicate all potential contaminants and treatment that goes beyond conventional methods is often very expensive. By completing this plan, Walnut Grove Utilities acknowledges that implementing measures to minimize and mitigate contamination can be a relatively economical way to help ensure the safety of the drinking water.

1.1. WHAT ARE THE BENEFITS OF PREPARING A SOURCE WATER PROTECTION PLAN?

- Fulfilling the requirement for the public water utilities to complete or update their source water protection plan.
- Identifying and prioritizing potential threats to the source of drinking water; and establishing strategies to minimize the threats.
- Planning for emergency response to incidents that compromise the water supply by contamination or depletion, including how the public, state, and local agencies will be informed.
- Planning for future expansion and development, including establishing secondary sources of water.
- Ensuring conditions to provide the safest and highest quality drinking water to customers at the lowest possible cost.
- Providing more opportunities for funding to improve infrastructure, purchase land in the protection area, and other improvements to the intake or source water protection areas.

2.0 BACKGROUND: WV SOURCE WATER ASSESSMENT AND PROTECTION PROGRAM

Since 1974, the federal Safe Drinking Water Act (SDWA) has set minimum standards on the construction, operation, and quality of water provided by public water systems. In 1986, Congress amended the SDWA. A portion of those amendments were designed to protect the source water contribution areas around ground water supply wells. This program eventually became known as the Wellhead Protection Program (WHPP). The purpose of the WHPP is to prevent pollution of the source water supplying the wells.

The Safe Drinking Water Act Amendments of 1996 expanded the concept of wellhead protection to include surface water sources under the umbrella term of Source Water Protection. The amendments encourage states to establish SWAP programs to protect all public drinking water supplies. As part of this initiative states must explain how protection areas for each public water system will be delineated, how potential contaminant sources will be inventoried, and how susceptibility ratings will be established.

In 1999, the WVBPH published the West Virginia Source Water Assessment and Protection Program, which was endorsed by the United States Environmental Protection Agency. Over the next few years, WVBPH staff completed an assessment (i.e., delineation, inventory, and susceptibility analysis) for all of West Virginia's public water systems. Each public water system was sent a copy of its assessment report. Information regarding assessment reports for Walnut Grove Utilities can be found in **Table 1**.

3.0 STATE REGULATORY REQUIREMENTS

On June 6, 2014, §16 1 2 and §16 1 9a of the Code of West Virginia, 1931, was reenacted and amended by adding three new sections, designated §16 1 9c, §16 1 9d and §16-1-9e. The changes to the code outlines specific requirements for public water utilities that draw water from a surface water source, or a surface water influenced groundwater source.

Under the amended and new codes each existing public water utility using surface water or ground water influenced by surface water as a source must have completed or updated a source water protection plan by July 1, 2016 and must continue to update their plan every three years. Existing source water protection plans have been developed for many public water utilities in the past. If available, these plans were reviewed and considered in the development of this updated plan. Any new water system established after July 1, 2016, must submit a source water protection plan before they start to operate. A new plan is also required when there is a significant change in the potential sources of significant contamination (PSSC) within the zone of critical concern (ZCC).

The code also requires that public water utilities include details regarding PSSCs, protection measures, system capacities, contingency plans, and communication plans. Before a plan can be approved, the local health department and public will be invited to contribute information for consideration. In some instances, public water utilities may be asked to conduct independent studies of the source water protection area and specific threats to gain additional information.

4.0 SYSTEM INFORMATION

WALNUT GROVE UTILITIES is classified as a state regulated public utility and operates a community public water system. A community public water system is a system that regularly supplies drinking water from its own sources to at least 15 service connections used by year round residents of the area or regularly serves 25 or more people throughout the entire year. For purposes of this source water protection plan, community public water systems are also referred to as public water utilities. Information on the population served by this utility is presented in **Table 1** below.

Table 1. Population Served by WALNUT GROVE UTILITIES

Administrative office location:	270 Industrial Blvd., Kearneysville, JEFFERSON, WV, 25430		
Is the system a public utility, according to the Public Service Commission rule?	Yes		
Date of Most Recent Source Water Assessment Report:	12/31/2002		
Date of Most Recent Source Water Protection Plan:	7/1/2019		
Population served directly:	7250		
Bulk Water Purchaser Systems:	System Name	PWSID Number	Population
Total Population Served by the Utility:	7250		
Does utility have multiple Source Water Protection Areas(SWPAs)?	Yes		
How many SWPAs does the utility have?	2		

5.0 WATER TREATMENT AND STORAGE

As required, Walnut Grove Utilities has assessed their system (e.g., treatment capacity, storage capacity, unaccounted for water, contingency plans) to evaluate their ability to provide drinking water and protect public health. **Table 2** contains information on the water treatment methods and capacity of the utility.Information about the surface sources from which Walnut Grove Utilities draws water can be found in **Table 3**. If the utility draws water from any groundwater sources to blend with the surface water the information about these ground water sources can be found in **Table 4**.

Table 2. Walnut Grove Utilities Water Treatment Information

TP1 Walnut Grove	
Water treatment processes (in order of occurrence) includes:	Disinfection (12.5% Hypochlorite)
The treatment capacity is approximately (GPD):	750,000
Current average production is approximately (GPD):	30,830
Maximum gallons of water treated and produced at that plant in one day during the past year was:	139,500
Minimum gallons of water treated and produced at that plant in one day during the past year was:	0
Plant is operated an average of hours a day:	2
Maximum number of hours of operation in one day at that plant during the past year was:	10
Minimum number of hours of operation in one day at that plant during the past year was:	0
How many storage tank(s) are maintained on systems distrbution system:	2
Total gallons of treated water storage:	1,362,400
Total gallons of raw water storage (GALs):	
TP2 Briar Run	
Water treatment processes (in order of occurrence) includes:	Disinfection (12.5% Hypochlorite)
The treatment capacity is approximately (GPD):	360,000
Current average production is approximately (GPD):	181,637
Maximum gallons of water treated and produced at that plant in one day during the past year was:	367,800
Minimum gallons of water treated and produced at that plant in one day during the past year was:	34,000
Plant is operated an average of hours a day:	14
Maximum number of hours of operation in one day at that plant during the past year was:	30
Minimum number of hours of operation in one day at that plant during the past year was:	3
How many storage tank(s) are maintained on systems distrbution system:	2

Total gallons of treated water storage:	1,362,400
Total gallons of raw water storage (GALs):	
TP3 Meadowbrook	
Water treatment processes (in order of occurrence) includes:	Disinfection (12.5% Hypochlorite)
The treatment capacity is approximately (GPD):	578,880
Current average production is approximately (GPD):	134,260
Maximum gallons of water treated and produced at that plant in one day during the past year was:	248,900
Minimum gallons of water treated and produced at that plant in one day during the past year was:	100
Plant is operated an average of hours a day:	21
Maximum number of hours of operation in one day at that plant during the past year was:	35
Minimum number of hours of operation in one day at that plant during the past year was:	5
How many storage tank(s) are maintained on systems distrbution system:	2
Total gallons of treated water storage:	1,362,400
Total gallons of raw water storage (GALs):	0
TP4 Bardane	
Water treatment processes (in order of occurrence) includes:	COAGULATION, FILTRATION, PRESSURE SAND, Disinfection (12.5% Hypochlorite)
The treatment capacity is approximately (GPD):	144,000
Current average production is approximately (GPD):	43,418
Maximum gallons of water treated and produced at that plant in one day during the past year was:	133,100
Minimum gallons of water treated and produced at that plant in one day during the past year was:	0
Plant is operated an average of hours a day:	15
Maximum number of hours of operation in one day at that plant during the past year was:	43
Minimum number of hours of operation in one day at that plant during the past year was:	0
How many storage tank(s) are maintained on systems distrbution system:	2
Total gallons of treated water storage:	1,362,400
Total gallons of raw water storage (GALs):	0
TP5 Burr	
Water treatment processes (in order of occurrence) includes:	COAGULATION, FILTRATION, PRESSURE SAND, Disinfection (12.5 % Hypochlorite)
The treatment capacity is approximately (GPD):	144,000
Current average production is approximately (GPD):	24,716

Maximum gallons of water treated and produced at that plant in one day during the past year was:	160,600
Minimum gallons of water treated and produced at that plant in one day during the past year was:	0
Plant is operated an average of hours a day:	4
Maximum number of hours of operation in one day at that plant during the past year was:	21
Minimum number of hours of operation in one day at that plant during the past year was:	0
How many storage tank(s) are maintained on systems distrbution system:	2
Total gallons of treated water storage:	1,362,400
Total gallons of raw water storage (GALs):	0
TP6 Shenandoah Junction	
Water treatment processes (in order of occurrence) includes:	Disinfection (12.5% Hypochlorite)
The treatment capacity is approximately (GPD):	316,800
Current average production is approximately (GPD):	86,124
Maximum gallons of water treated and produced at that plant in one day during the past year was:	160,000
Minimum gallons of water treated and produced at that plant in one day during the past year was:	0
Plant is operated an average of hours a day:	9
Maximum number of hours of operation in one day at that plant during the past year was:	28
Minimum number of hours of operation in one day at that plant during the past year was:	0
How many storage tank(s) are maintained on systems distrbution system:	2
Total gallons of treated water storage:	1,362,400
Total gallons of raw water storage (GALs):	0
TP7 Woodland	
Water treatment processes (in order of occurrence) includes:	HYPOCHLORINATION, POST
The treatment capacity is approximately (GPD):	
Current average production is approximately (GPD):	12,619
Maximum gallons of water treated and produced at that plant in one day during the past year was:	25,600
Minimum gallons of water treated and produced at that plant in one day during the past year was:	5,300
Plant is operated an average of hours a day:	9
Maximum number of hours of operation in one day at that plant during the past year was:	15
Minimum number of hours of operation in one day at that plant during the past year was:	5

How many storage tank(s) are maintained on systems distrbution system:	2
Total gallons of treated water storage:	1,362,400
Total gallons of raw water storage (GALs):	0

Table 3. Walnut Grove Utilities Surface Water Sources

Intake Name	Facility #	Local Name	Describe Intake	State Id Code	Date Constructed / Modified	Frequency of Use (Primary / Backup / Emergency)	Activity Status (Active/Inactive)

Table 4. Walnut Grove Utilities Ground Water Sources

Well/Spring Name	Facility #	Local Name	Date Constructed / Modified	Completion Report Available (Yes/No)	Well Depth (ft)	Casting Depth (ft)	Grout (Yes/No)	Frequency of Use (Primary / Backup / Emergency)	Activity Status (Active/Inactive)
WOODLAND WELL #1	-		1/1/1990	No	415	83	Unknown	Permanent	Active
WOODLAND WELL #2	-		1/1/1990	No	0	0	Unknown	Other	Active
BARDANE WELL #1	-		6/1/1978	No	0	40	Unknown	Permanent	Active
MEADOWBROOK WELL #1	-		1/1/1997	No	385	190	Other	Permanent	Active
MEADOWBROOK WELL #2	-		1/1/1997	No	505	100	Other	Permanent	Active
BARDANE WELL #2	-		3/11/1987	Yes	360	102	Unknown	Permanent	Active
BURR WELL #1	-		5/1/1990	No	355	50	Unknown	Permanent	Active
SHENANDOAH JUNCTION WELL #3	-		1/1/1900	No	80	0	Cement	Permanent	Active
SHENANDOAH JUNCTION WELL #2	-		1/1/1960	No	420	0	Cement	Emergency	Active
MEADOWBROOK WELL #3	-		10/2/2015	Yes	190	177	Cement	Permanent	Active
WELL #7	-		1/1/2002	No	280	60	Other	Permanent	Active

WELL 1	-	WALNUT GROVE UTILITIES, WELL 1	1/1/1850	No	42	0	Other	Permanent	Active
WELL #6	-		1/1/2002	No	500	0	Other	Other	Active
WELL #5 (AMBROSE)	-	WALNUT GROVE UTILITIES, AMBROSE	1/1/1950	No	293	63	Other	Emergency	Active
SHENANDOAH JUNCTION WELL #1	-			No	0	0	Unknown	Permanent	Active

6.0 DELINEATIONS

For surface water systems, delineation is the process used to identify and map the drainage basin that supplies water to a surface water intake. This area is generally referred to as the source water protection area (SWPA). All surface waters are susceptible to contamination because they are exposed at the surface and lack a protective barrier from contamination. Accidental spills, releases, sudden precipitation events that result in overland runoff, or storm sewer discharges can allow pollutants to readily enter the source water and potentially contaminate the drinking water at the intake. The SWPA for surface water is distinguished as a Watershed Delineation Area (WSDA) for planning purposes; and the Zone of Peripheral Concern (ZPC) and Zone of Critical Concern (ZCC) are defined for regulatory purposes.

The WSDA includes the entire watershed area upstream of the intake to the boundary of the State of West Virginia border, or a topographic boundary. The ZCC for a public surface water supply is a corridor along streams within the watershed that warrant more detailed scrutiny due to its proximity to the surface water intake and the intake's susceptibility to potential contaminants within that corridor. The ZCC is determined using a mathematical model that accounts for stream flows, gradient and area topography. The length of the ZCC is based on a five-hour time-of-travel of water in the streams to the water intake, plus an additional one-quarter mile below the water intake. The width of the zone of critical concern is 1,000 feet measured horizontally from each bank of the principal stream, and five hundred feet measured horizontally from each bank of the tributaries draining into the principal stream. Ohio River ZCC delineations are based on ORSANCO guidance and extend 25 miles above the intake. The Ohio River ZCC delineations include 1,320 feet (1/4 mile) measured from the bank of the main stem of the Ohio River and 500 feet on a tributary.

The ZPC for a public surface water supply source and for a public surface water influenced groundwater supply source is a corridor along streams within a watershed that warrants scrutiny due to its proximity to the surface water intake and the intake's susceptibility to potential contaminants within that corridor. The ZPC is determined using a mathematical model that accounts for stream flows, gradient and area topography. The length of the zone of peripheral concern is based on an additional five-hour time-of-travel of water in the streams beyond the perimeter of the zone of critical concern, which creates a protection zone of ten hours above the water intake. The width of the zone of peripheral concern is one thousand feet measured horizontally from each bank of the principal stream and five hundred feet measured horizontally from each bank of the tributaries draining into the principal stream.

For groundwater supplies there are two types of SWPA delineations: 1) wellhead delineations and 2) conjunctive delineations, which are developed for supplies identified as groundwater under the direct influence of surface water, or GWUDIs. A wellhead protection area is determined to be the area contributing to the recharge of the groundwater source (well or spring), within a five year time of travel. A conjunctive delineation combines a wellhead protection area for the hydrogeologic recharge and a connected surface area contributing to the wellhead.

Information and maps of the WSDA, ZCC, ZPC and Wellhead Protection Area for this public water supply were provided to the utility and are attached to this report. See **Appendix A. Figures**. Other information about the WSDA is shown in **Table 5**.

Table 5. Watershed Delineation Information

Intake Name	
Method of Delineation for Groundwater Sources	Groundwater Modeling
Area of Wellhead Protection Area (Acres)	7,917
Intake Name	
Method of Delineation for Groundwater Sources	Groundwater Modeling
Area of Wellhead Protection Area (Acres)	7,917
Intake Name	
Method of Delineation for Groundwater Sources	Groundwater Modeling
Area of Wellhead Protection Area (Acres)	7,917
Intake Name	
Method of Delineation for Groundwater Sources	Radius
Area of Wellhead Protection Area (Acres)	289
Intake Name	
Method of Delineation for Groundwater Sources	Radius
Area of Wellhead Protection Area (Acres)	289
Intake Name	
Method of Delineation for Groundwater Sources	Groundwater Modeling
Area of Wellhead Protection Area (Acres)	7,917
Intake Name	
Method of Delineation for Groundwater Sources	Groundwater Modeling
Area of Wellhead Protection Area (Acres)	7,917
Intake Name	
Method of Delineation for Groundwater Sources	Groundwater Modeling
Area of Wellhead Protection Area (Acres)	7,917
Intake Name	
Method of Delineation for Groundwater Sources	Groundwater Modeling
Area of Wellhead Protection Area (Acres)	7,917
Intake Name	
Method of Delineation for Groundwater Sources	Radius
Area of Wellhead Protection Area (Acres)	289
Intake Name	
Method of Delineation for Groundwater Sources	Groundwater Modeling
Area of Wellhead Protection Area (Acres)	7,917
Intake Name	WALNUT GROVE UTILITIES, WELL 1
Method of Delineation for Groundwater Sources	Groundwater Modeling

Area of Wellhead Protection Area (Acres)	7,917
Intake Name	
Method of Delineation for Groundwater Sources	Groundwater Modeling
Area of Wellhead Protection Area (Acres)	3,203
Intake Name	WALNUT GROVE UTILITIES, AMBROSE
Method of Delineation for Groundwater Sources	Groundwater Modeling
Area of Wellhead Protection Area (Acres)	3,203
Intake Name	
Method of Delineation for Groundwater Sources	Groundwater Modeling
Area of Wellhead Protection Area (Acres)	7,917

7.0 PROTECTION TEAM

One important step in preparing a source water protection plan is to organize a source water protection team who will help develop and implement the plan. The legislative rule requires that water utilities make every effort to inform and engage the public, local government, local emergency planners, the local health department and affected residents at all levels of the development of the protection plan. WVBPH recommends that the water utility invite representatives from these organizations to join the protection team, which will ensure that they are given an opportunity to contribute in all aspects of source water protection plan development. Public water utilities should document their efforts to engage representatives and provide an explanation if any local stakeholder is unable to participate. In addition, other local stakeholders may be invited to participate on the team or contribute information to be considered. These individuals may be emergency response personnel, local decision makers, business and industry representatives, land owners (of land in the protection area), and additional concerned citizens.

The administrative contact for Walnut Grove Utilities is responsible for assembling the protection team and ensuring that members are provided the opportunity to contribute to the development of the plan. The acting members of the Protection Team are listed in **Table 6**.

The role of the protection team members will be to contribute information to the development of the source water protection plan, review draft plans and make recommendations to ensure accuracy and completeness, and when possible contribute to implementation and maintenance of the protection plan. The protection team members are chosen as trusted representatives of the community served by the water utility and may be designated to access confidential data that contains details about the local PSSCs. The input of the protection team will be carefully considered by the water utility when making final decisions relative to the documentation and implementation of the source water protection plan.

Walnut Grove Utilities will be responsible for updating the source water protection plan and rely upon input from the protection team and the public to better inform their decisions. To find out how you can become involved as a participant or contributor, visit the utility website or call the utility phone number, which are provided in **Table 6**.

Table 6. Protection Team Member and Contact Information

Name	Representing	Title	Phone Number	Email
Stephanie Reel	Walnut Grove Utilities	General Manager	(301)302-9702	sreel@juiwater.net
Jeff Pippel	Walnut Grove Utilities	Chief Operator	(304)728-2077	jpippel@juiwater.net
	Walnut Grove Utilities			
	Walnut Grove Utilities			
	Walnut Grove Utilities			
	Walnut Grove Utilities			
Tanner Haid	WV Rivers Coalition	Eastern Panhandle Field Coordinator	(304)886-2665	thaid@wvrivers.org
Lee Snyder	Snyder Environmental Services	President	(304)725-9140	lsnyder@snyderenv.com
Alana Hartman	West Virginia Department of Environmental Services	Division of Water and Wastewater Management (Nonpoint Section)	(304)822-7266	alana.c.hartman@wv.gov
Jennifer M. Brockman	Jefferson County Department of Planning and Zoning	Director of Planning and Zoning	(304)728-3228	planningdepartment@jeffersoncountywv.org
Date of First Protection Team Meeting:		Protection Team Meeting was held Monday, September 14, 2015 at Walnut Grove Utilities. Meeting minutes attached in Appendix E.		
Efforts made to inform and engage local stakeholders (public, local government, local emergency planners, local health department, and affected residents) and explain absence of recommended stakeholders		Representatives from JUI opted to invite potential protection team members themselves via email. A list of local stakeholders invited to join the Protection Team is provided in Appendix F-4. PUBLIC MEETING JUNE 20, 2019 5:30 PM JUI OFFICES		

8.0 POTENTIAL SOURCES OF SIGNIFICANT CONTAMINATION

Source water protection plans should provide a complete and comprehensive list of the PSSCs contained within the ZCC, based upon information obtained from the WVBPH, working in cooperation with the West Virginia Department of Environmental Protection (WVDEP) and the West Virginia Division of Homeland Security and Emergency Management (WVDHSEM). A facility or activity is listed as a PSSC if it has the potential to release a contaminant that could potentially impact a nearby public water supply, and it does not necessarily indicate that any release has occurred.

The list of PSSCs located in the SWPA is organized into two types: 1) SWAP PSSCs, and 2) Regulated Data. SWAP PSSCs are those that have been collected and verified by the WVBPH SWAP program during previous field investigations to form source water assessment reports and source water protection plans. Regulated PSSCs are derived from federal and state regulated databases, and may include data from WVDEP, US Environmental Protection Agency, WVDHSEM, and from state data sources.

8.1. CONFIDENTIALITY OF PSSCS

A list of the PSSCs contained within the ZCC should be included in the source water protection plan. In the event of a chemical spill, release or other related emergency, information pertaining to the contaminant shall be immediately disseminated to any emergency responders reporting to the site. The designees for Walnut Grove Utilities are identified in the communication planning section of the source water protection plan.

PSSC data from some agencies (ex. WVDHSEM, WVDEP, etc.) may be restricted due to the sensitive nature of the data. Locational data will be provided to the public water utility. However, to obtain specific details regarding contaminants, (such as information included in Tier II reports), water utilities should contact the local emergency planning commission (LEPC) or agencies, directly. While the maps and lists of the PSSCs and regulated sites are to be maintained in a confidential manner, these data are provided in **Appendix A. Figures** for internal review and planning uses only.

8.2. LOCAL AND REGIONAL PSSCS

For the purposes of this source water protection plan, local PSSCs are those that are identified by local stakeholders in addition to the PSSCs lists distributed by the WVBPH and other agencies. Local stakeholders may identify local PSSCs for two main reasons. The first is that it is possible that threats exist from unregulated sources and land uses that have not already been inventoried and do not appear in regulated databases. For this reason each public water utility should investigate their protection area for local PSSCs. A PSSC inventory should identify all contaminant sources and land uses in the delineated ZCC. The second reason local PSSCs are identified is because public water utilities may consider expanding the PSSC inventory effort outside of the ZCC into the ZPC and WSDA if necessary to properly identify all threats that could impact the drinking water source. As the utility considers threats in the watershed they may consider collaborating with upstream communities to identify and manage regional PSSCs.

When conducting local and regional PSSC inventories, utilities should consider that some sources may be obvious like above ground storage tanks, landfills, livestock confinement areas, highway or railroad right of ways, and sewage treatment facilities. Others are harder to locate like abandoned cesspools, underground tanks, French

drains, dry wells, or old dumps and mines.

The Walnut Grove Utilities reviewed intake locations and the delineated SWPAs to verify the existence of PSSCs provided by the WVBPH and identify new PSSCs. If possible, locations of regulated sites within the SWPA were confirmed. Information on any new or updated PSSCs identified by Walnut Grove Utilities and not already appearing in datasets from the WVBPH can be found in .**Table 7**.

Table 7. Locally Identified potential Sources of Significant Contamination

Please see Appendix A to view this information.

8.3. PRIORITIZATION OF THREATS AND MANAGEMENT STRATEGIES

Once the utility has identified local concerns, they must develop a management plan that identifies specific activities that will be pursued by the public water utility in cooperation and concert with the WVBPH, local health departments, local emergency responders, LEPC and other agencies and organizations to protect the source water from contamination threats.

Depending on the number identified, it may not be feasible to develop management strategies for all of the PSSCs in the SWPA. The identified PSSCs can be prioritized by potential threat to water quality, proximity to the intake(s), and local concern. The highest priority PSSCs can be addressed first in the initial management plan. Lower ranked PSSCs can be addressed in the future as time and resources allow. To assess the threat to the source water, water systems should consider confidential information about each PSSC. This information may be obtained from state or local emergency planning agencies, Tier II reports, facility owner, facility groundwater protection plans, spill prevention response plans, results of field investigations, etc.

In addition to identifying and prioritizing PSSCs within the SWPA, local source water concerns may also focus on critical areas. For the purposes of this source water protection plan, a critical area is defined as an area that is identified by local stakeholders and can lie within or outside of the ZCC. Critical areas may contain one or more PSSCs which would require immediate response to address a potential incident that could impact the source water.

A list of these priority PSSCs was selected and ranked by the Walnut Grove Utilities Protection Team. This list reflects the concerns of this specific utility and may contain PSSCs not previously identified and not within the ZCC or ZPC. **Table 8** contains a description of why each critical area or PSSC is considered a threat and what management strategies the utility is either currently using or could use in the future to address each threat.

9.0 IMPLEMENTATION PLAN FOR MANAGEMENT STRATEGIES

Walnut Grove Utilities reviewed the recommended strategies listed in their previous source water protection plan, to consider if any of them should be adopted and incorporated in this updated plan. **Table 9** provides a brief statement summarizing the status of the recommended strategies. **Table 9** also lists strategies from a previous plan that are being incorporated in this plan update.

When considering source management strategies and education and outreach strategies, this utility has considered how and when the strategies will be implemented. The initial step in implementation is to establish responsible parties and timelines to implement the strategies. The water utility, working in conjunction with the Protection Team members, can determine the best process for completing activities within the projected time periods. Additional meetings may be needed during the initial effort to complete activities, after which the Protection Team should consider meeting annually to review and update the Source Water Protection Plan. A system of regular updates should be included in every implementation plan.

Proposed commitments and schedules may change but should be well documented and reported to the local stakeholders. If possible, utilities should include cost estimates for strategies to better plan for implementation and possible funding opportunities. Walnut Grove Utilities has developed an implementation plan for priority concerns listed in **Table 8**. The responsible team member, timeline, and potential cost of each strategy are presented in **Table 9**. Note: Because timelines may change, future plan updates should describe the status of each strategy and explain the lack of progress.

Table 8. Priority PSSCs or Critical Areas

PSSC or Critical Area	Priority Number	Reason for Concern
Agricultural Activities	1	Due to extensive agricultural land use in the area, nitrate levels in the groundwater are elevated throughout much of the region. *Levels of nitrate in the water were found to be above 50% of the MCL in all quarterly samples collected between early 2009 and present, concentrations have been as high as 9.1 mg/L.
Major Transportation (Highways and Railroads)	2	Threat to source water due to the potential for accidental leaks and spills of vehicle fluids or hazardous freight; the area is underlain by karst terrain and contains losing streams which put ground water sources at a higher risk from surface water contaminant pathways. Rail corridors also pose a risk due to the possibility of spills and derailments.
Industrial & Commercial Activity	3	Facilities such as auto repair shops and waste collection/transport stations lie within and just outside of the SWPA and pose a threat due to the potential for accidental leaks/spills, improper disposal of hazardous wastes or improperly managed stormwater runoff. Additionally, stormwater re-direction and ponding is a major cause of sinkholes in the area; which provide a direct conduit between surface water and groundwater.
Sinkholes	4	When sinkholes occur a direct conduit from the surface to groundwater is created and natural soil filtration processes are bypassed. Water quality threats are dependent on land use.
Septic Systems	5	The status of some older septic systems is unknown and failures and leaks are possible. Unlike other areas, in karst terrain a septic will fail downwards and can therefore be difficult to detect.

Table 9. Priority PSSC Management Strategies

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Major Transportation (Highways and Railroads)	Railroad JUI will request that Jefferson County OHSEM work with LEPC and other local emergency responders to utilize the training materials provided by CSX railways (i.e., planning guides and in-person/on-site trainings, featuring a safety rail car) and their short line partners. JUI will further request that OHSEM and emergency responders also work with CSX to inquire	JUI	Not Started		Staff time involving members from JUI, DOT, OHSEM, other LEPC agencies and BPH and/or WV DEP. Staff time at the LEPC level, and for members of local emergency response stations (e.g.,

Table 9. Priority PSSC Management Strategies

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
	about the Rail Respond program, which provides easy mobile access to critical information about what's traveling on CSX rails. Information regarding these programs is provided in Appendix F-7. Finally, JUI will work with OHSEM to request that emergency personnel perform routine Emergency Response drills for Highway and Railroad spills. JUI will work with WV DEP or BPH to perform a Hazmat Re-route request to prevent specific potential contaminants from being transported through system source water protection areas. JUI will also request that these entities, along with OHSEM, will work with railroad companies to discuss safety measures, emergency plans and inspection routine(s).				local fire department, police department, etc.) if training is pursued.

Table 9. Priority PSSC Management Strategies

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Major Transportation (Highways and Railroads)	Highway (Rt. 9) JUI will begin a dialogue with the Jefferson County OHSEM, as well as the Department of Transportation (DOT), to explore opportunities to create and manage pre-stocked emergency spill response kits along highway and railroad corridors. JUI will consider alternative plans should an agreement not be reached by these entities. JUI will encourage the local OHSEM to work with LEPC coordinators and other emergency personnel to ensure that JUI receives timely notification in the event of highway or other roadway spills within SWPAs. JUI will begin a dialogue with the DOT to explore traffic regulation options for key highway corridors, and revisit postings of source water protection signs along these roadways.	JUI	Not Started		Staff time involving members from JUI, DOT and OHSEM. Material costs for spill response kits/absorbent bags, if pursued.
Agricultural Activities	JUI will work with the County Extension Service, the Soil and Water Conservation District, and/or Natural Resources Conservation Service (NRCS) to encourage agricultural land owners to participate in nutrient management planning, forest conservation, land retirement and management programs (including riparian zone preservation or restoration) within the SWPA. Efforts here will focus on education and outreach measures.	JUI	Not Started		JUI staff time associated with raising local awareness of the existence of these programs.

Table 9. Priority PSSC Management Strategies

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Industrial & Commercial Activity	JUI will request Groundwater Protection Plans (GPPs) and/or stormwater management plans from WV DEP for commercial and industrial facilities located within the SWPAs. From these the utility will investigate what (if any) preventative pollution measures are already in place for these facilities. This will permit the utility to better understand protection strategies already in place at these facilities and more accurately determine the threat posed by specific facilities. JUI will educate facility owners on the potential threat of sinkhole development caused by improper stormwater management. JUI will distribute site-specific Best Management Practice lists, along with advanced hazardous materials containment options to facilities (which will include vaulted Above ground Storage Tanks) on an as-needed basis.	JUI	Not Started		JUI staff time putting together information packets/materials for commercial and industrial business owners, as well as research time to pull GPPs from WV DEP records.

Table 9. Priority PSSC Management Strategies

PSSC or Critical Area	Management Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Sinkholes	JUI will work with the planning and zoning department, and will attempt to identify potential sources of funding to implement a sinkhole management program specific to SWPAs. The goal of the sinkhole management program will be to assign responsibility for mitigation and repair to relevant parties, encourage routine investigations along key travel corridors and provide advice and funding opportunities for sinkholes that develop on lands within the SWPA. Implementation of this task will take many years and cooperation from multiple public and private entities. The recommended sinkhole management plan is broadly based upon the Carroll County, MD sinkhole management plan.	JUI	Not Started		JUI staff time to continue dialogue with the Department of Planning and Zoning. Department of Planning and Zoning time to develop and work to implement management plan.
Septic Systems	JUI will work with the Health Department, to the degree feasible, to encourage homeowners to maintain and routinely inspect their septic systems or replace old or failing septic systems with Best Available Technologies (BATs).	JUI	Not Started		Staff time providing informational materials.

10.0 EDUCATION AND OUTREACH STRATEGIES

The goal of education and outreach is to raise awareness of the need to protect drinking water supplies and build support for implementation strategies. Education and outreach activities will also ensure that affected citizens and other local stakeholders are kept informed and provided an opportunity to contribute to the development of the source water protection plan. Walnut Grove Utilities has created an Education and Outreach plan that describes activities it has either already implemented or could implement in the future to keep the local community involved in protecting their source of drinking water. This information can be found in **Table 10**.

Table 10. Education and Outreach Implementation Plan

Education and Outreach Strategy	Description of Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Clean Up Events	Coordinate with local Clean Up efforts and publicize projects. Work closely with Watershed Associations.	JUI	Not Started		Staff time associated with watershed group coordination.
General Information Dissemination	JUI will include educational information on the following topics on their website for public use: source water protection, water conservation, household hazardous materials disposal, pharmaceuticals disposal, observing and reporting spills/leaks.	JUI	Not Started		Staff time pulling together information and making it available to public.
Early Education	Work with area schools to include source water protection in the curriculum, or present information at assemblies or in classroom events (e.g., environmental science class).	JUI	Not Started		Staff time providing information to school system or attending events/classes.
Waste Collection	Consider planning and publicizing more frequent community hazardous waste drop-off events.	JUI	Not Started		Staff time coordinating with waste collection entities and publicizing events.
BMP lists	Distribute lists of industry specific BMPs to the owners of (1) Gas Stations, (2) Car Repair Shops, (3) Agricultural Lands/Facilities within the SWPA (Future Farmers, etc.). Provide SWPP education materials.	JUI	Not Started		Staff time creating BMP lists using published/provided materials.

Table 10. Education and Outreach Implementation Plan

Education and Outreach Strategy	Description of Activity	Responsible Protection Team Member	Status / Schedule	Comments	Estimated Cost
Display Information	Include informational materials (i.e. brochures, maps, etc.) in county government offices and other public places (i.e. local fairs). Host non-confidential SWPP online for public review and comment. Work with DOT for protection area sign expansion/coverage.	JUI	Not Started		Staff time creating and displaying relevant information.
Public Workshops	Present Source Water Protection information at already scheduled meetings (i.e. town board meetings) and/or a Source Water specific Public Presentation	JUI	Not Started		Staff time preparing for and hosting workshops.

11.0 CONTINGENCY PLAN

The goal of contingency planning is to identify and document how the utility will prepare for and respond to any drinking water shortages or emergencies that may occur due to short and long term water interruption, or incidents of spill or contamination. During contingency planning, utilities should examine their capacity to protect their intake, treatment, and distribution system from contamination. They should also review their ability to use alternative sources and minimize water loss, as well as their ability to operate during power outages. In addition, utilities should report the feasibility of establishing an early warning monitoring system and meeting future water demands.

Isolating or diverting any possible contaminant from the intake for a public water system is an important strategy in the event of an emergency. One commonly used method of diverting contaminants from an intake is establishing booms around the intake. This can be effective, but only for contaminants that float on the surface of the water. Alternatively, utilities can choose to pump floating contaminants from the water or chemically neutralize the contaminant before it enters the treatment facility.

Public utilities using surface sources should be able to close the intake by one means or another. However, depending upon the system, methods for doing so could vary greatly and include closing valves, lowering hatches or gates, raising the intake piping out of the water, or shutting down pumps. Systems should have plans in place in advance as to the best method to protect the intake and treatment facility. Utilities may benefit from turning off pumps and, if possible, closing the intake opening to prevent contaminants from entering the piping leading to the pumps. Utilities should also have a plan in place to sample raw water to identify the movement of a contaminant plume and allow for maximum pumping time before shutting down an intake (See Early Warning Monitoring System). The amount of time that an intake can remain closed depends on the water infrastructure and should be determined by the utility before an emergency occurs. The longer an intake can remain closed in such a case, the better.

Raw and treated water storage capacity also becomes extremely important in the event of such an emergency. Storage capacity can directly determine how effectively a water system can respond to a contamination event and how long an intake can remain closed. Information regarding the water shortage response capability of Walnut Grove Utilities is provided in **Table 11**.

11.1. RESPONSE NETWORKS AND COMMUNICATION

PSSC data from some agencies (ex. WVDHSEM, WVDEP, etc.) may be restricted due to the sensitive nature of the data. Locational data will be provided to the public water utility. However, to obtain specific details regarding contaminants, (such as information included in Tier II reports), water utilities should contact the local emergency planning commission (LEPC) or agencies, directly. While the maps and lists of the PSSCs and regulated sites are to be maintained in a confidential manner, these data are provided in **Appendix A. Figures** for internal review and planning uses only.

Table 11. Walnut Grove Utilities Water Shortage Response Capacity

Can the water utility isolate or divert contamination from the intake and groundwater supply?	Yes
Describe the results of an examination and analysis of the public water system's ability to isolate or divert contaminated waters from its surface water intake or groundwater supply:	The utility can shut the well pumps off, not allowing contaminants to enter the water treatment plant.
Describe the results of an examination and analysis of the public water system's existing ability to switch to an alternative water source or intake in the event of contamination of its primary water source:	If a particular well becomes contaminated, or suffers a loss of capacity due to drought, JUI can receive water from interconnections with the JUI owned and operated Briar Run (Ambrose) and Meadowbrook WTPs.
Is the Utility able to close the water intake in the event of a spill?	Yes
How long can the Utility keep the intake closed?	System interconnections are able to provide full capacity to the Walnut Grove WTP.
Describe the process to close the intake:	Turn well pump off to prevent contamination of the treatment plant.
Describe the treated water system's storage capacity of the water system:	510,000 gallon standpipe that has security fencing surrounding the perimeter and a 500,000 gal elevated storage tank, three 30,000 gal contact tanks, a 22,400 gal contact tank and a 20,000 gal contact tank. Based on the daily average usage data (513,600 gallons) obtained from the most recent sanitary survey, Walnut Grove has roughly 1.97 days of reserve capacity with the standpipe and elevated storage tanks alone. With the clearwell and contact tanks factored in, reserve capacity increases to 2.22 days.
Gallons of storage capacity (raw water)	0
Gallons of storage capacity (treated water)	0
Is the Utility a member of WVRWA Emergency Response Team?:	Yes
Is the Utility a member of WV-WARN?:	Yes
List other agreements to provide receive assistance in case of emergency:	Generator with Snyder Environmental,Walnut Grove WTP, which includes Walnut Grove, Briar Run and Meadowbrook WTP's, is interconnected with the Burr System, which includes Burr, Bardane, Shenandoah Junction and Woodland WTP's.,WV-WARN

11.2. OPERATION DURING LOSS OF POWER

Walnut Grove Utilities analyzed its ability to operate effectively during a loss of power. This involved ensuring a means to supply water through treatment, storage, and distribution without creating a public health emergency. Information regarding the utility's capacity for operation during power outages is summarized in **Table 12**.

Table 12. Generator Capacity

Can you connect to a generator at the intake/wellhead?:	Yes
Please provide a scenario that best describes your system:	Yes; however electrical work would be required to connect to a portable generator.
What do you have (KW)?	

What do you need (KW)?			
Can you connect to a generator at the treatment facility?:		Yes	
Please provide a scenario that best describes your system:		Yes; the facility is fully wired for a generator that will be rented or borrowed in an emergency.	
What do you have (KW)?			
What do you need (KW)?			
Can you connect to a generator at the distribution system?:		No	
Please provide a scenario that best describes your system:			
What do you have (KW)?			
What do you need (KW)?			
Does the utility have fuel on hand for generator?:		No	
Hours:			
Gallons:			
Provide a list of suppliers and alternate suppliers that could provide fuel in the event of an emergency:		Supplier	Phone Number
	Fuel	Sunoco Associate	(304)725-1900
	Fuel	Sunbelt Rentals Associate	(301)662-3403
	Generator	WVWARN Bonnie Serrett	(304)335-2035
	Generator	Sunbelt Rentals Associate	(301)662-3403
Does the utility test the generator(s) periodically?:		No	
Does the utility routinely maintain the generator(s)?:		No	
If the Utility does not have generator or the ability to connect to a generator, describe plans to respond to power outages:		A Portable, Diesel, 12KVA, 3 Phase, 460 Volts is needed to operate the plant during a loss of power. Generator maintenance is preformed by the owner of the generator.	

11.3. FUTURE WATER SUPPLY NEEDS

When planning for potential emergencies and developing contingency plans, a utility needs to not only consider their current demands for treated water but also account for likely future needs. This could mean expanding current intake sources or developing new ones in the near future. This can be an expensive and time consuming process, and any water utility should take this into account when determining emergency preparedness. Walnut Grove Utilities has analyzed its ability to meet future water demands at current capacity, and this information is included in **Table 13**.

Table 13. Future Water Supply Needs for Walnut Grove Utilities

Is the Utility able to meet water demands with the current capacity for the next five years?	Yes
Explain how you plan to do so:	Yes, high producing wells that will sustain growth.

11.4. WATER LOSS CALCULATION

In any public water system there is a certain percentage of the total treated water that does not reach the customer. Some of this water is used in treatment plant processes such as back washing filters or flushing piping, but there is usually at least a small percentage that goes unaccounted for. To measure and report on this unaccounted for water, a public utility must use the method described in the Public Service Commission's rule, Rules for the Government of Water Utilities, 150CSR7, section 5.6. The rule defines unaccounted for water as the volume of water introduced into the distribution system less all metered usage and all known non-metered usage which can be estimated with reasonable accuracy.

To further clarify, metered usages are most often those that are distributed to customers. Non-metered usages that are being estimated include usage by fire departments for fires or training, un-metered bulk sells, flushing to maintain the distribution system, and water used for backwashing filters and cleaning settling basins. By totaling the known metered and non-metered uses the utility calculates unaccounted for water. Note: To complete annual reports submitted to the PSC, utilities typically account for known water main breaks by estimating the amount of water lost. However, for the purposes of the source water protection plan, any water lost due to leaks, even if the system is aware of how much water is lost at a main break, is not considered a use. Water lost through leaks and main breaks cannot be controlled during a water shortages or other emergencies and should be included in the calculation of percentage of water loss for purposes of the source water protection plan. The data in **Table 13** is taken from the most recently submitted Walnut Grove Utilities PSC Annual Report.

Table 14. Water Loss Information

Water pumped - Total Gallons:		242,314,000
*Water purchased - Total Gallons:		0
Total gallons of water pumped and purchased:		242,314,000
Total gallons of water loss accounted for except main leaks:	Mains, plaint, filters, flushing, etc - Total Gallons:	27,940,000
	Fire department - Total Gallons:	2,400,000
	Back washing - Total Gallons:	6,948,000
	Blowing settling basins - Total Gallons:	0
Total Accounted for Water Loss		37,288,000
Unaccounted for lost water - Total Gallons:		35,278,000
Water sold - Gallons:		161,276,000
Water Lost From Main Leaks:		8,472,000
Total Gallons of Unaccounted for Lost Water and Water Lost from Main Leaks:		43,750,000
Total percent unaccounted for water		18
Describe the measures to correct water loss greater than 15%:	It is recommended that Walnut Grove WTP purchase a leak noise correlation system that listens to the distribution system daily and produces a report indicating potential leak noise. It is also advised that Walnut Grove WTP install meter pits to section the distribution system into different zones. This will allow the utility to section the system off during a leak to determine where the leak is and allow for accurate estimating of water loss.	

11.5. EARLY WARNING MONITORING SYSTEM

Public water utilities are required to provide an examination of the technical and economic feasibility of implementing an early warning monitoring system. Implementing an early warning monitoring system may be approached in different ways depending upon the water utility's resources and threats to the source water. A utility may install a continuous monitoring system that will provide real time information regarding water quality conditions. This would require utilities to analyze the data to establish what condition is indicative of a contamination event. Continuous monitoring will provide results for a predetermined set of parameters. The more parameters that are being monitored, the more sophisticated the monitoring equipment will need to be. When establishing a continuous monitoring system, the utility should consider the logistics of placing and maintaining the equipment, and receiving output data from the equipment.

Alternately, or in addition, a utility may also pull periodic grab samples on a regular basis, or in case of a reported incident. The grab samples may be analyzed for specific contaminants. A utility should examine their PSSCs to determine what chemical contaminants could pose a threat to the water source. If possible, the utility should plan in advance how those contaminants will be detected. Consideration should be given to where samples will be collected, the preservations and hold times for samples, available laboratories to analyze samples, and costs associated with the sampling event. Regardless of the type of monitoring (continuous or grab), utilities should collect samples for their source throughout the year to better understand the baseline water quality conditions and natural seasonal fluctuations. Establishing a baseline will help determine if changes in the water quality are indicative of a contamination event and inform the needed response.

Every utility should establish a system or process for receiving or detecting chemical threats with sufficient time to respond to protect the treatment facility and public health. All approaches to receiving and responding to an early warning should incorporate communication with facility owners and operators that pose a threat to the water quality, with state and local emergency response agencies, with surrounding water utilities, and with the public. Communication plays an important role in knowing how to interpret data and how to respond.

Walnut Grove Utilities has analyzed its ability to monitor for and detect potential contaminants that could impact its source water. Information regarding this utility's early warning monitoring system capabilities is provided in **Table 15** and in **Appendix B**.

Table 15. Early Warning Monitoring System Capabilities

Does your system currently receive spill notifications from a state agency, neighboring water system, local emergency responders, or other facilities?	Yes
From whom do you receive notices?	Yes, notifications are received from the West VirginiaDepartment of Environmental Protection and Local Fire and Police Stations. The Department of Health and Human Resources Bureau for Public Health alsosends out emails regarding spills reported throughoutthe County.
Are you aware of any facilities, land uses, or critical areas within your protection areas where chemical contaminants could be released or spilled?	Yes; Routes 230, 115,9 and both Norfolk Southern and CSX Railways. Multiple commercial facilities also exist within the SWPA.
Are you prepared to detect potential contaminants if notified of a spill?	Yes

List laboratories (and contact information) on whom you would rely to analyze water samples in case of a reported spill.		Laboratories	
		Name	Phone Number
		CONFIDENTIAL	
Do you have an understanding of baseline or normal conditions for your source water uality that accounts for seasonal fluctuations?		Yes	
Does your utility (aside from turbidity monitoring) currently monitor your raw water through continuous monitoring at the surface water intake or groundwater source to detect changes in water quality that could indicate contamination?		Yes	
Does your utility collect periodic grab samples (ex. possess reserved sample bottles, on-call laboratory services, and trained personnel) in response to a spill notification or to investigate changes in water quality that could indicate contamination?		Yes	
Please explain:		Yes; turbidity and pH. The system is also contemplating acquiring equipment to monitoring conductivity, dissolved oxygen, temperature, total dissolved solids, alkalinity and hardness.	
Provide or estimate the capital and O&M costs for your current or proposed early warning system or upgraded system.	Capital Cost:	CONFIDENTIAL	
	O&M Cost:	CONFIDENTIAL	
Do you serve more than 100,000 customers?		No	
Does your system currently receive spill notifications from a state agency, neighboring water system, local emergency responders, or other facilities?		Yes	
Are you prepared to detect potential contaminants if notified of a spill?		Yes	
Please describe the methods you use to monitor at the same technical levels utilized by ORSANCO:			

12.0 SINGLE SOURCE FEASIBILITY STUDY

If a public water utility's water supply plant is served by a single–source intake to a surface water source of supply or a surface water influenced source of supply, the submitted source water protection plan must also include an examination and analysis of the technical and economic feasibility of alternative sources of water to provide continued safe and reliable public water service in the event that its primary source of supply is detrimentally affected by contamination, release, spill event or other reason. These alternatives may include a secondary intake, two days of additional raw or treated water storage, an interconnection with neighboring systems, or other options identified on a local level. Note: a suitable secondary intake would draw water supplies from a substantially different location or water source.

To accomplish this requirement, utilities should examine all existing or possible alternatives and rank them by their technical, economic, and environmental feasibility. To have a consistent and complete method for ranking alternatives, WVBPH has developed a feasibility study guide. This guide provides several criteria to consider for each category, organized in a Feasibility Study Matrix. By completing the Feasibility Study Matrix, utilities will demonstrate the process used to examine the feasibility of each alternative and document scores that compare the alternatives. The Feasibility Study matrix and summary of the results are presented in an alternatives feasibility study attached as **Appendix D**.

13.0 COMMUNICATION PLAN

Walnut Grove Utilities has also developed a Communication Plan that documents the manner in which the public water utility, working in concert with state and local emergency response agencies, shall notify the local health agencies and the public of the initial spill or contamination event and provide updated information related to any contamination or impairment of the system's drinking water supply. The initial notification to the public will occur in any event no later than thirty minutes after the public water system becomes aware of the spill, release, or potential contamination of the public water system. A copy of the source water protection plan and the Communication Plan has been provided to the local fire department. Walnut Grove Utilities will update the Communication Plan as needed to ensure contact information is up to date.

Procedures should be in place to effectively react to the kinds of catastrophic spills that can reasonably be predicted at the source location or within the SWPA. The chain-of-command, notification procedures and response actions should be known by all water system employees.

The WVBPH has developed a recommended communication plan template that provides a tiered incident communication process to provide a universal system of alert levels to utilities and water system managers. The comprehensive Communication Plan for Walnut Grove Utilities is attached as **Appendix C** for internal review and planning purposes only.

The West Virginia Department of Environmental Protection is capable of providing expertise and assistance related to prevention, containment, and clean-up of chemical spills. The West Virginia Department of Environmental Protection Emergency Response 24-hour Phone is 1-800-642-3074. The West Virginia Department of Environmental Protection also operates an upstream distance estimator that can be used to determine the distance from a spill site to the closest public water supply surface water intake.

14.0 EMERGENCY RESPONSE

A public water utility must be prepared for any number of emergency scenarios and events that would require immediate response. It is imperative that information about key contacts, emergency services, and downstream water systems be posted and readily available in the event of an emergency. Elements of this source water protection plan, such as the contingency planning and communication plan, may contain similar information to the utility's emergency response plan. However, the emergency response plan is to be kept confidential and is not included in this source water protection plan. An Emergency Short Form is included in **Appendix C** to support the Communicate Plan by providing quick access to important information about emergency response and are to be used for internal review and planning purposes only.

15.0 CONCLUSION

This report represents a detailed explanation of the required elements of Walnut Grove Utilities's Source Water Protection Plan. Any supporting documentation or other materials that the utility considers relevant to their plan can be found in **Appendix E**.

This source water protection plan is intended to help prepare community public water systems all over West Virginia to properly handle any emergencies that might compromise the quality of the system's source water supply. It is imperative that this plan is updated as often as necessary to reflect the changing circumstances within the water system. The protection team should continue to meet regularly and continue to engage the public whenever possible. Communities taking local responsibility for the quality of their source water is the most effective way to prevent contamination and protect a water system against contaminated drinking water. Community cooperation, sufficient preparation, and accurate monitoring are all critical components of this source water protection plan, and a multi-faceted approach is the only way to ensure that a system is as protected as possible against source water degradation.

APPENDIX A. FIGURES AND TABLES

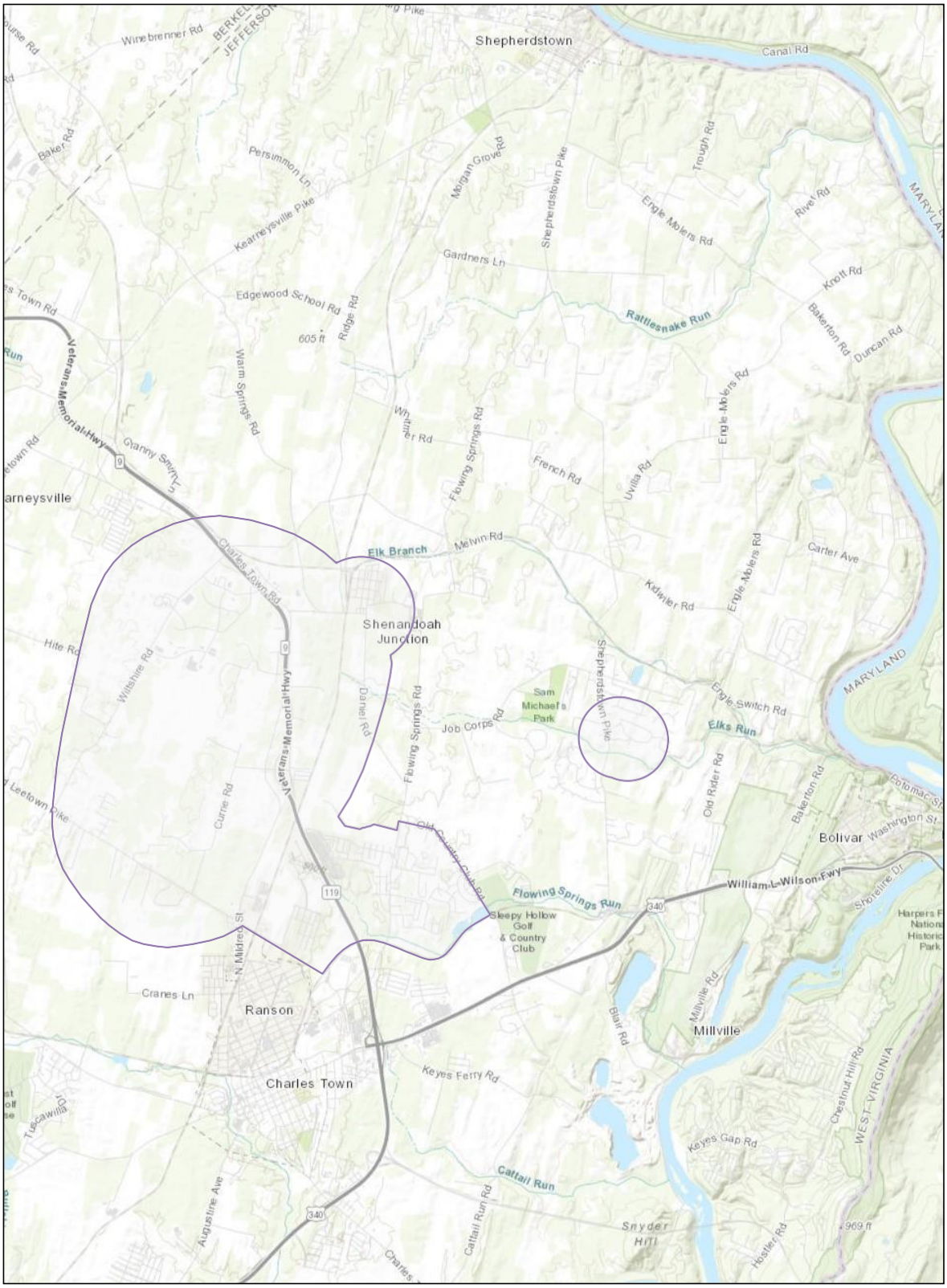
Water Source / Delineation

Ground Water Sources

Intake: WL017Intake: WL018Intake: WL011

Map of wellhead protection

West Virginia SWAP Protection Areas v0.01



August 7, 2019

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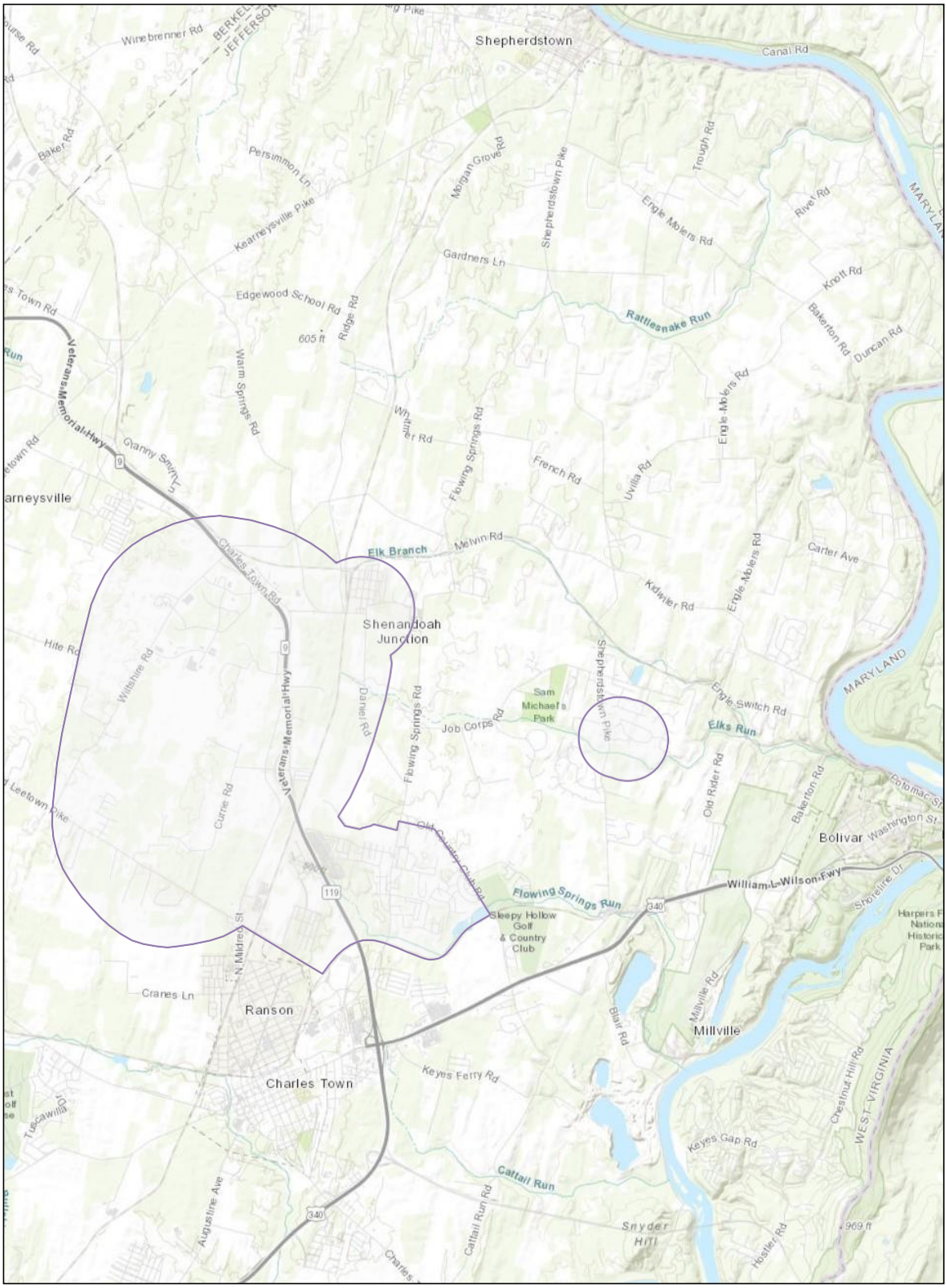
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Source Water Assessment and Wellhead Protection Programs

Map of wellhead protection

West Virginia SWAP Protection Areas v0.01



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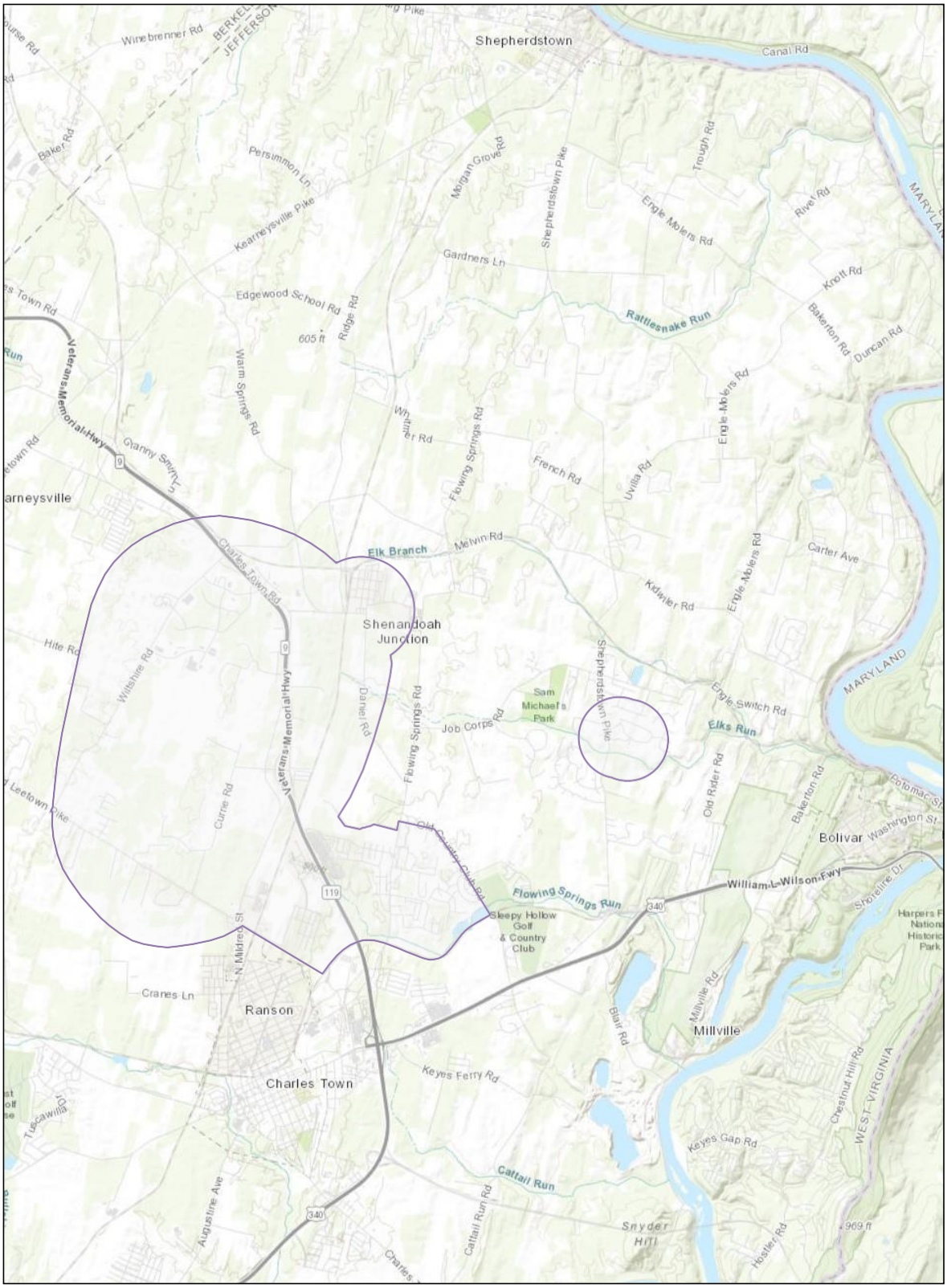
Source Water Assessment and Wellhead Protection Programs

Map of wellhead protection

West Virginia SWAP Protection Areas v0.01



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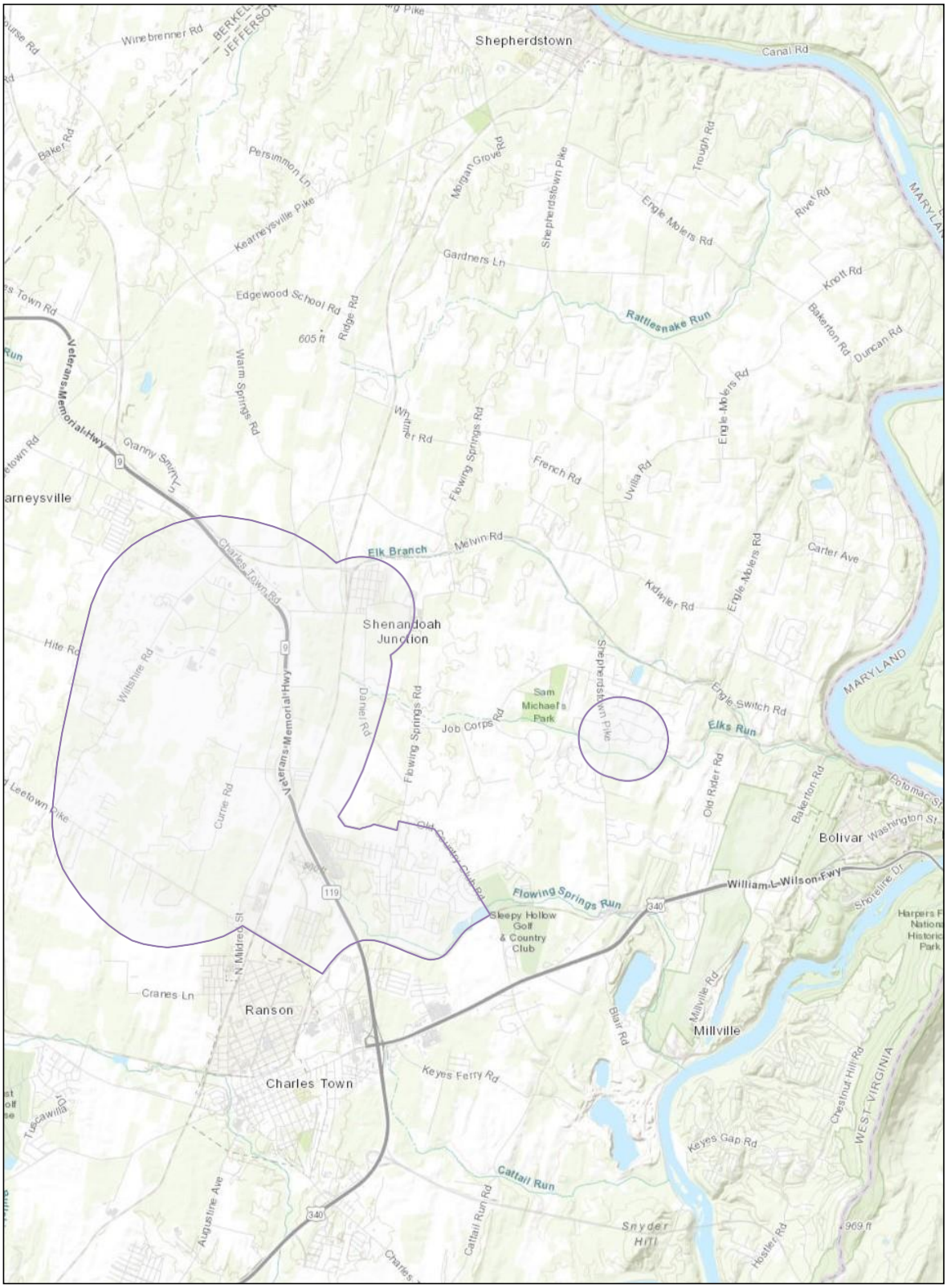
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Source Water Assessment and Wellhead Protection Programs

Map of wellhead protection

West Virginia SWAP Protection Areas v0.01



August 7, 2019

1:72,224

0 0.5 1 2 mi

0 1 2 4 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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Map of wellhead protection

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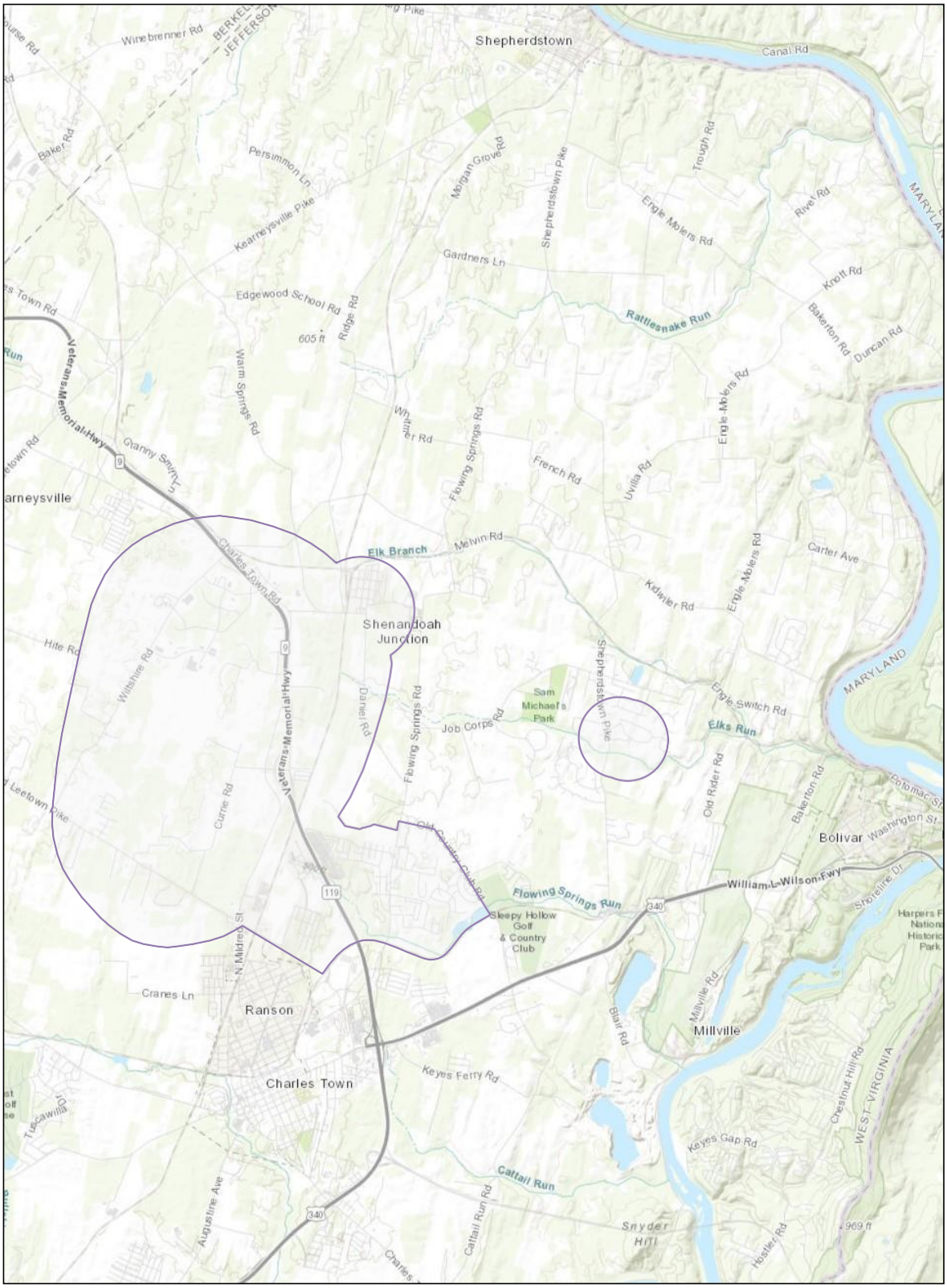

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Map of wellhead protection

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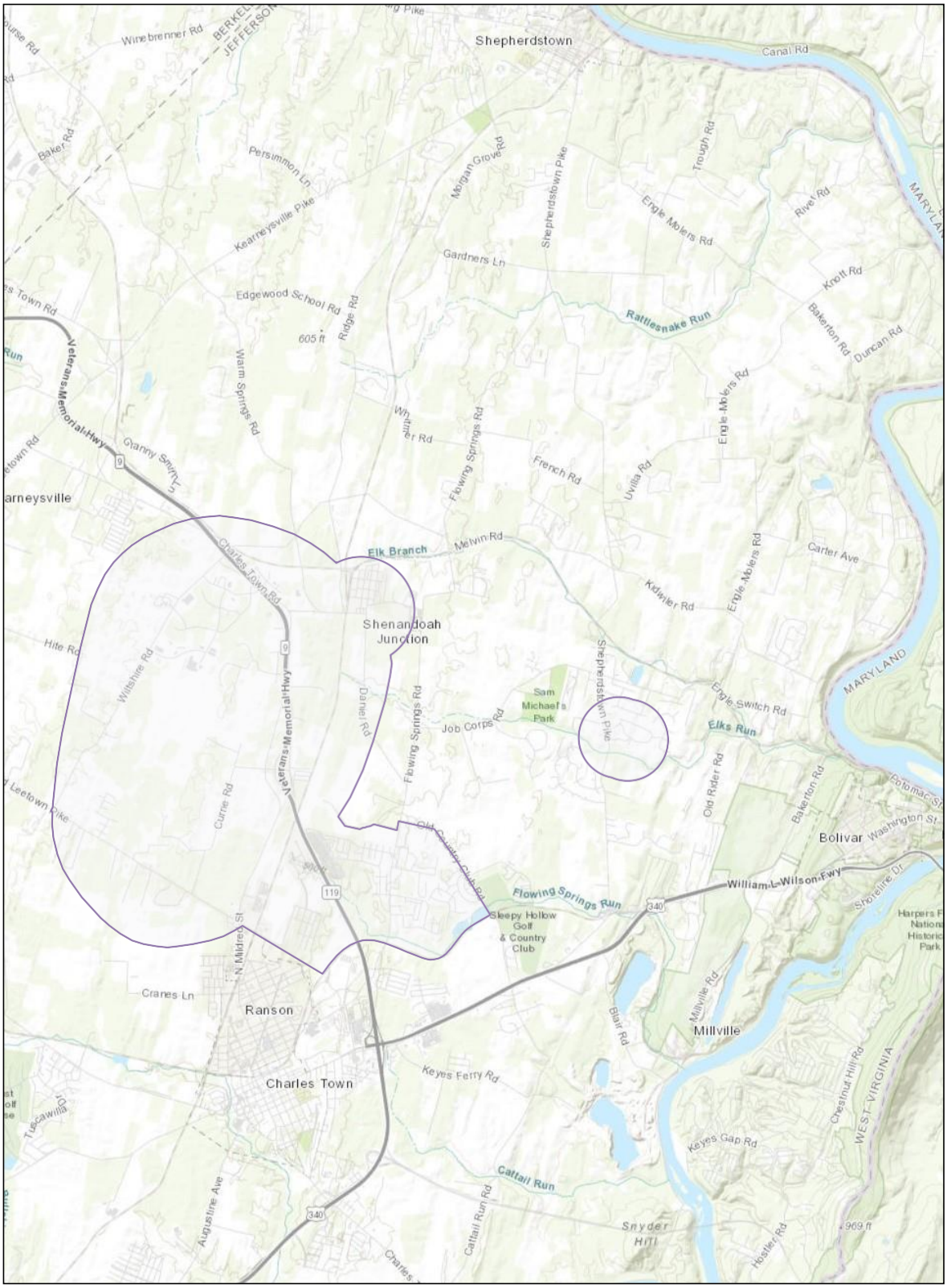

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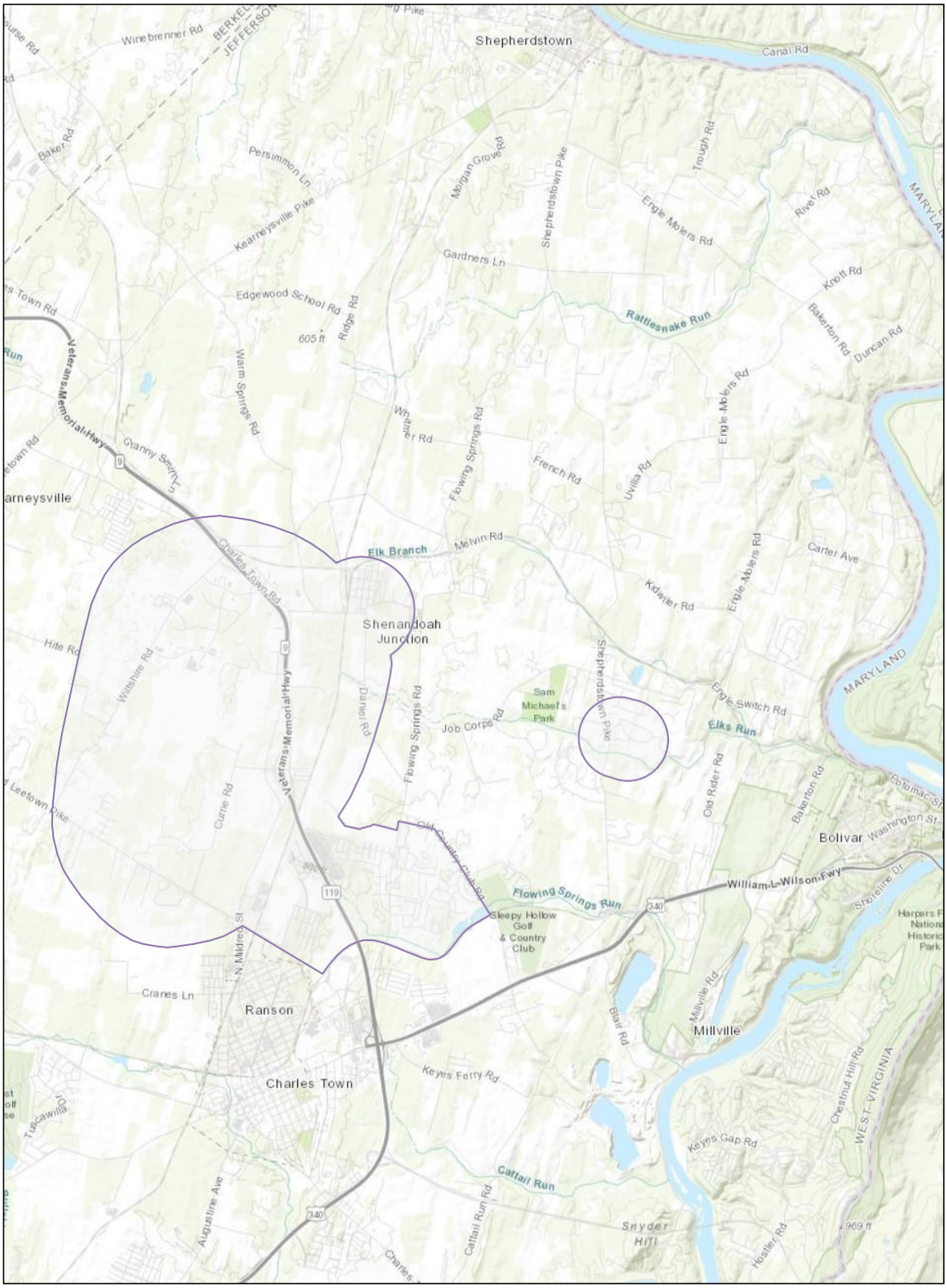

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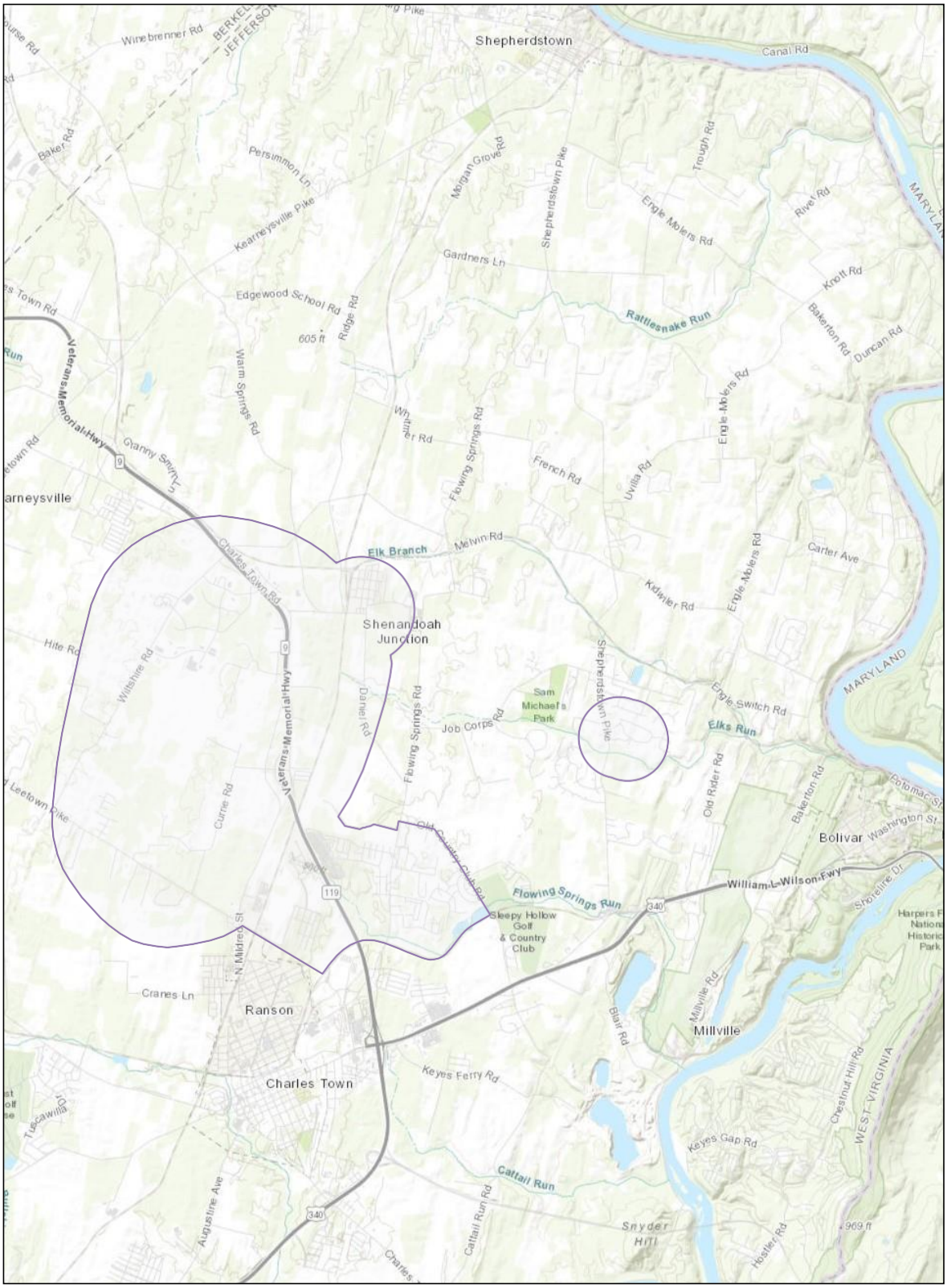

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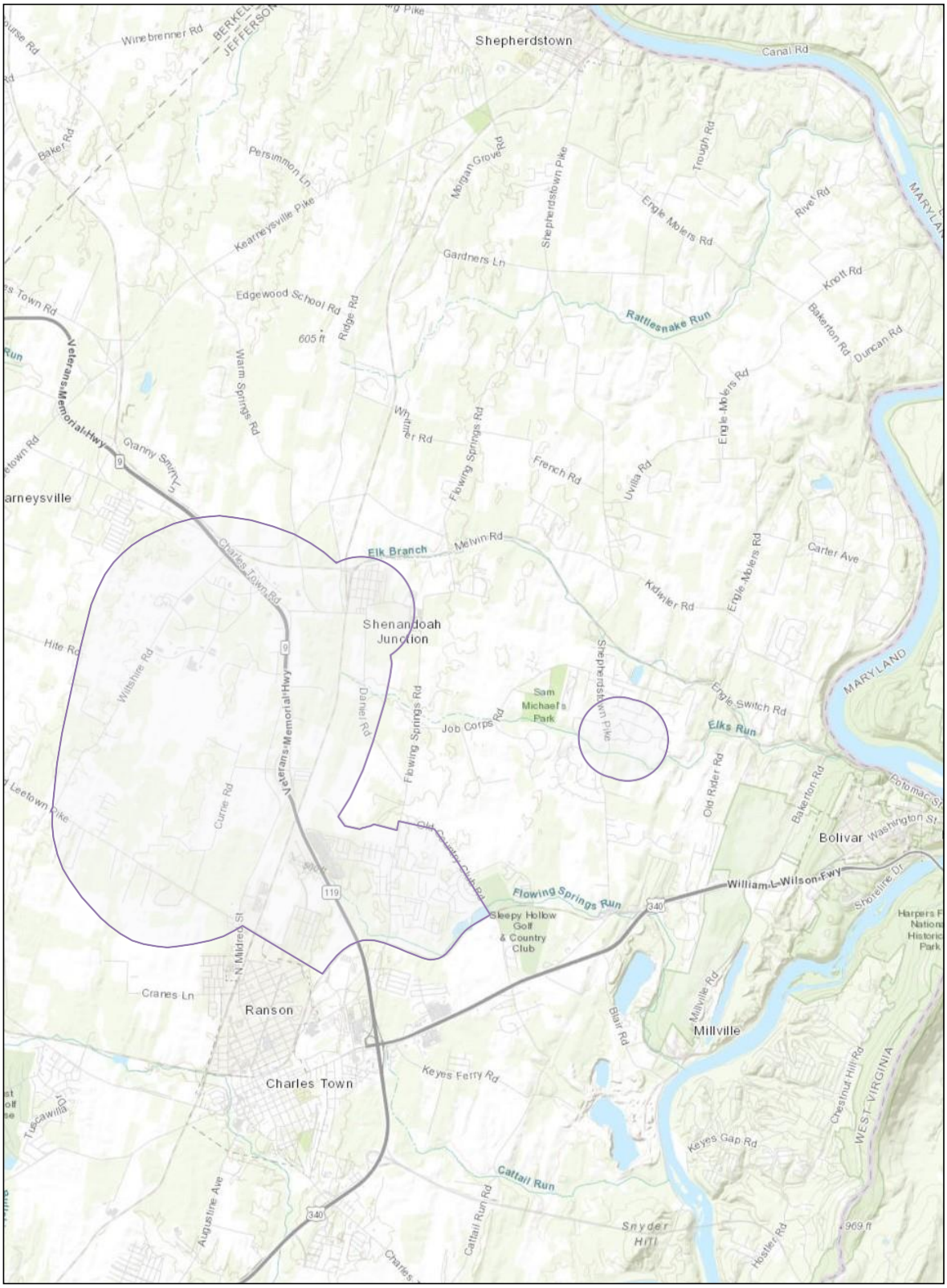

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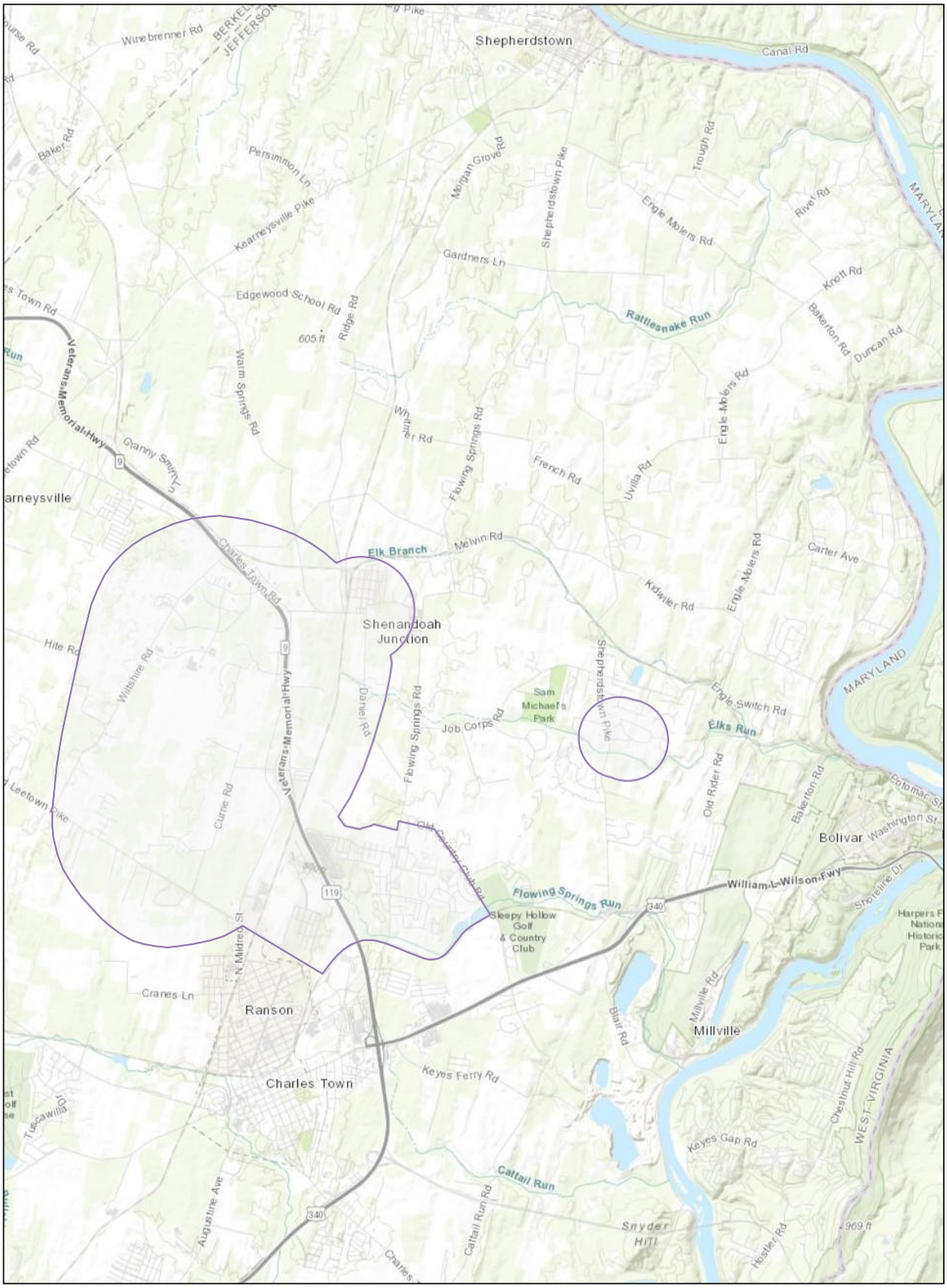

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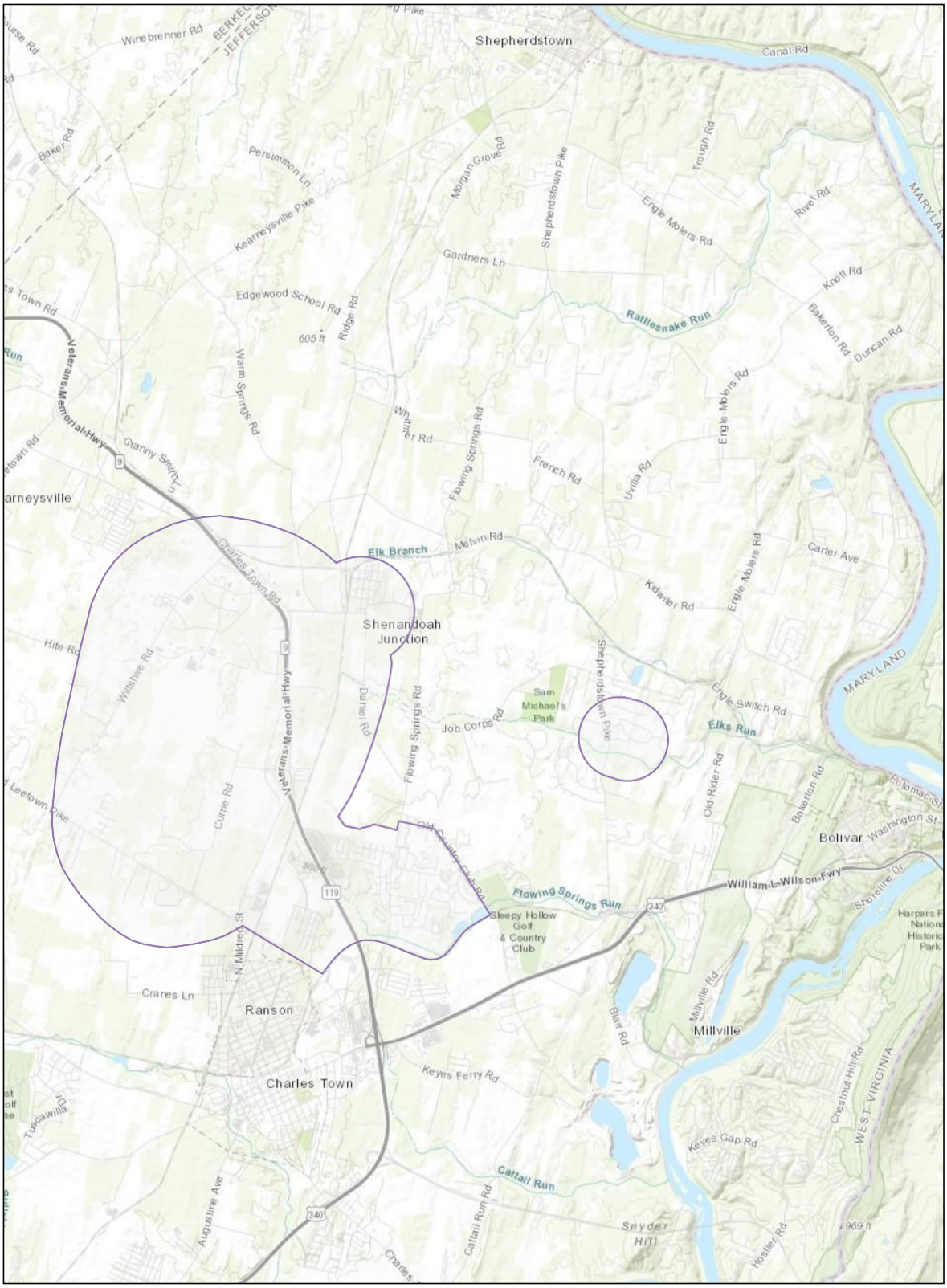

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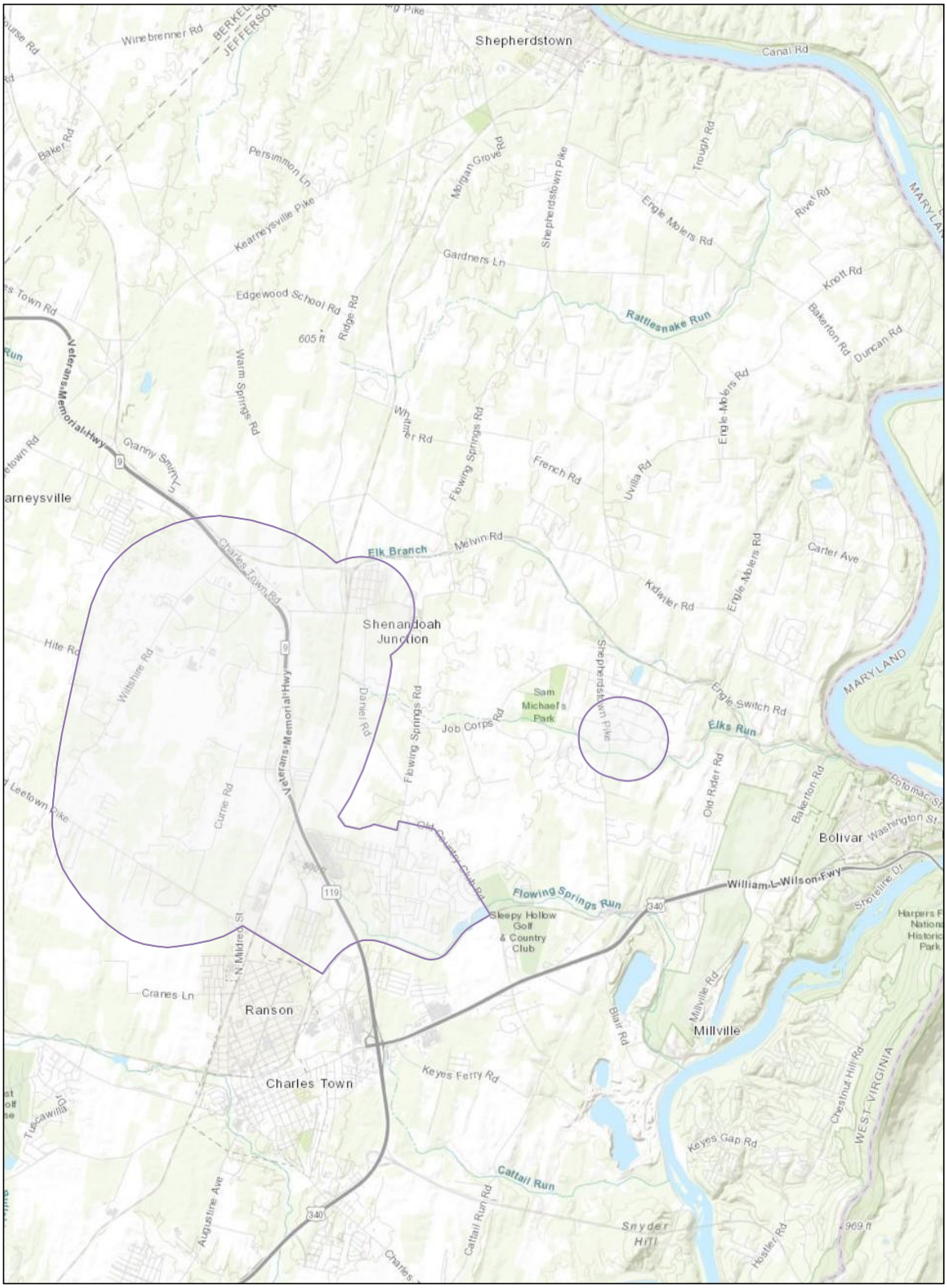

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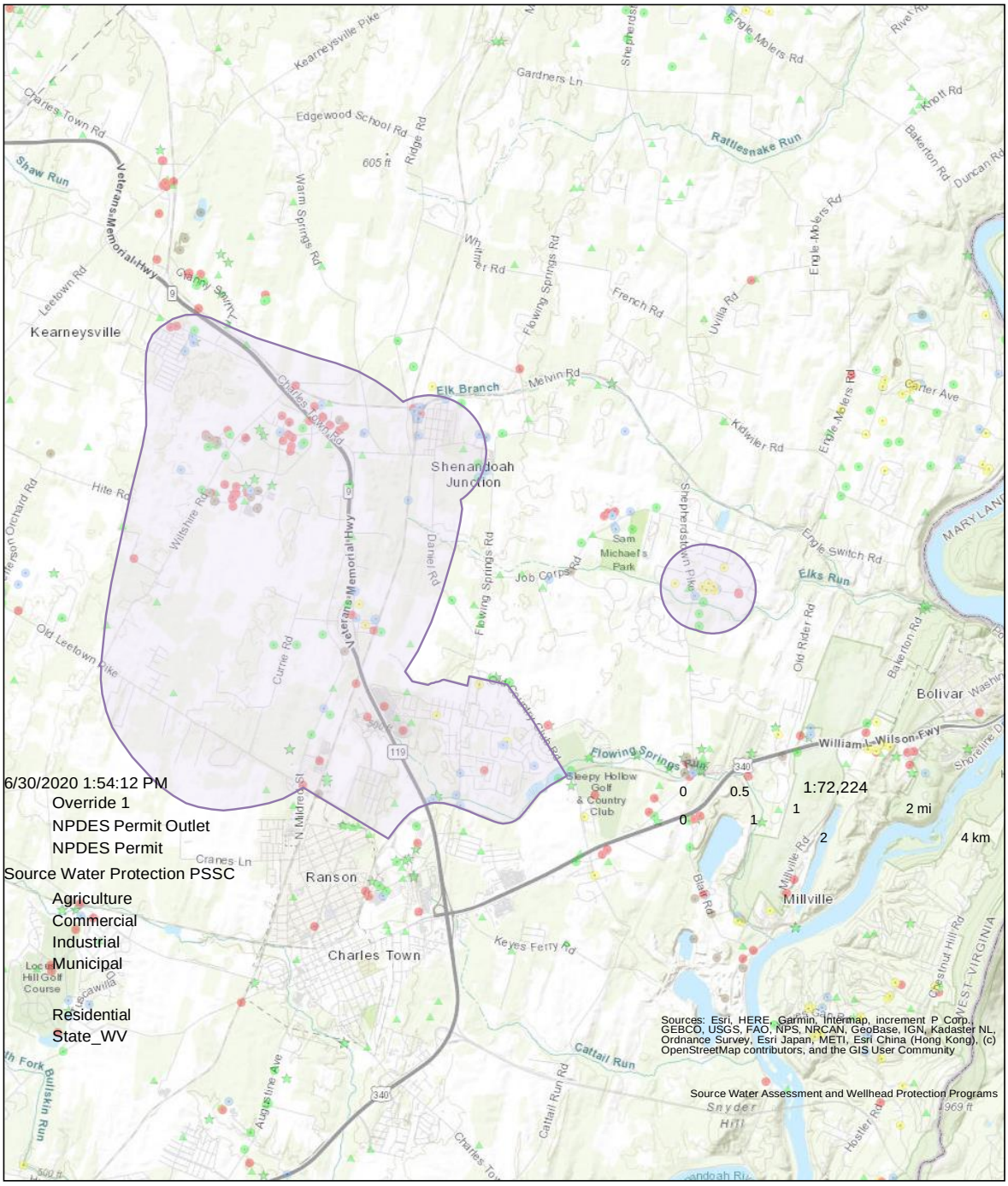
Source Water Assessment and Wellhead Protection Programs

PSSC Maps

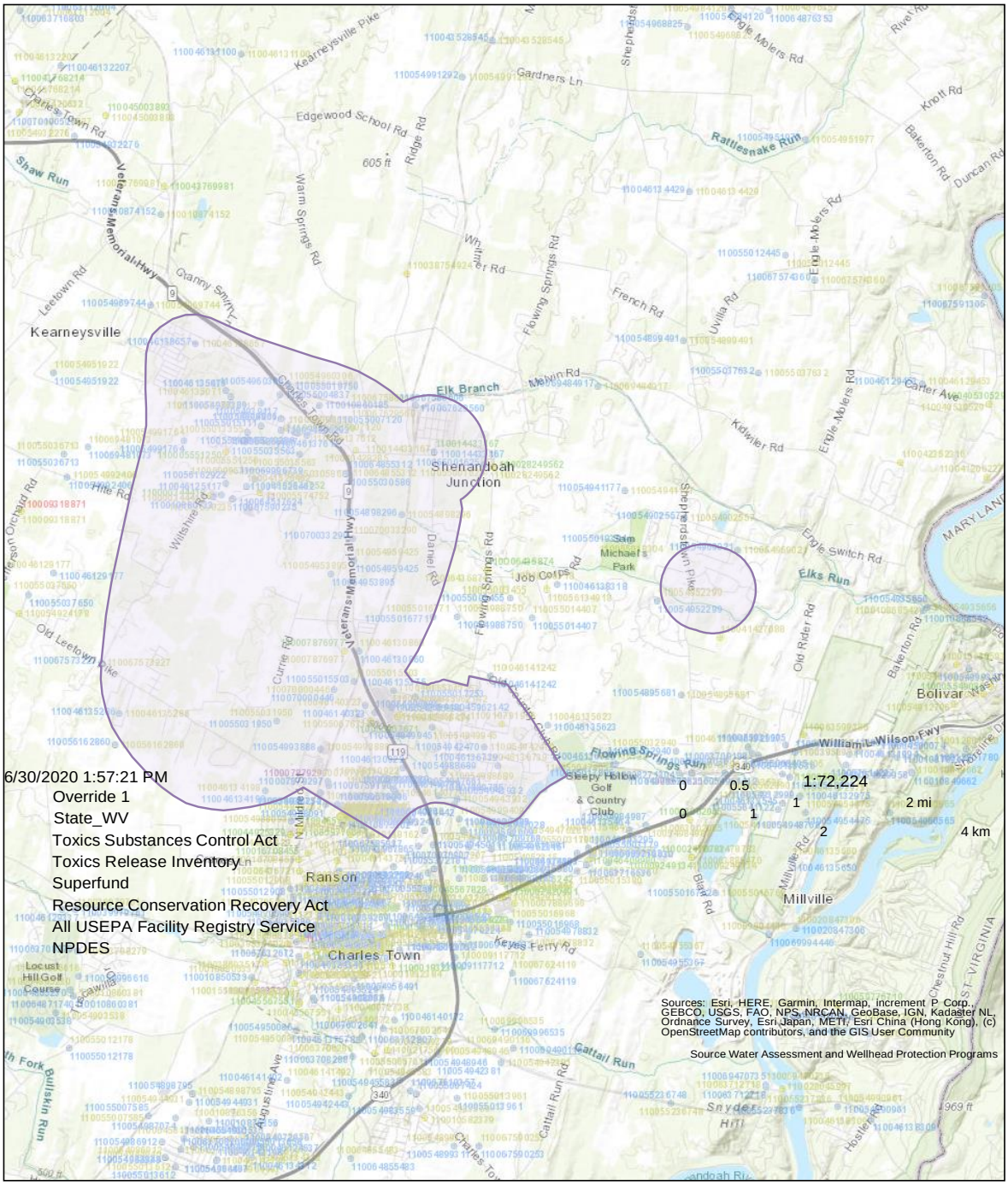
Local and Regional PSSC Map

WV3301942 SWAP PSSCs, NPDES, NPDES PERMIT OUTLET



Regulated PSSC Map

WV3301942 REGULATED PSSC MAP



PSSC Lists

Local and Regional PSSC List

SITE_NAME	SITEDESCRIPTION	SOURCE_CAT	Associated_Chemicals	THREAT_TO_GW	THREAT_TO_SW	in_WHPA
T.A. Lowery Elementary School	Schools	Municipal	SOC, D, VOC, PH	L	L	1
CONFIDENTIAL	Research laboratories	Commercial	M, VOC, SOC	H	H	1
Complete Auto Repair Services shop	Auto repair shops	Commercial	PH, M, VOC, HM, SOC	H	M	1
N. Jefferson Elementary School	Schools	Municipal	SOC, D, VOC, PH	L	L	1
Food distribution warehouse	Other	Commercial				1
Instrument Company	Electrical / electronic manufacturing	Industrial	M, VOC, HM, SOC	M	M	1
Seven Seas gas station	Gas Stations	Commercial	PH, M, VOC, SOC	H	M	1
Sewer lift station	Wastewater Treatment Plant	Municipal	MP, D	L	M	1
Construction Company Office	Other	Commercial				1
Strip mall	Other	Commercial				1
Gymnastics Facility	Other	Commercial				1
CONFIDENTIAL	Crops: orchards	Agriculture	NN, SOC	L	L	1
Electric Company store	Other	Commercial				1
Plumbing Company	Other	Commercial				1
CONFIDENTIAL	Crops: orchards	Agriculture	NN, SOC	L	L	1
CONFIDENTIAL	Wells: abandoned	Municipal	VOC, SOC, MP, PH, NN	H	L	1
CONFIDENTIAL	Crops, corn, soybean, wheat	Agriculture	NN, SOC, MP	L	L	1
CONFIDENTIAL	Greenhouses/Nurseries	Agriculture	MP, NN	L	L	1
Fox Glen Subdivision Contamination Site	Other	Municipal				1
CONFIDENTIAL	Crops: orchards	Agriculture	NN, SOC	L	L	1
N. Jefferson Elementary School - Inactive	Wells: abandoned	Municipal	VOC, SOC, MP, PH, NN	H	L	1
Railroad crossing beside highway	Railroad Tracks and Yards	Commercial	PH, M, VOC, SOC	H	H	1
Zion Baptist Church cemetery	Cemeteries	Commercial	M, SOC, PH	L	L	1
Avalanche Graphics	Printer/publisher	Commercial	VOC, SOC	M	L	1
Sur-Loc Flooring Systems	Other	Commercial				1
CONFIDENTIAL	Fleet/truck/bus terminals	Commercial	M, VOC, HM, SOC, PH	H	H	1
CONFIDENTIAL	Other	Commercial				1
R&L Landscape Center	Greenhouses/Nurseries	Agriculture	MP, NN	L	L	1
Automated Merchandising Systems, Inc.	Other	Commercial				1
Warehouse	Other	Commercial				1
Warehouse	Other	Commercial				1
Warehouse	Other	Commercial				1
CONFIDENTIAL	Junk yards, scrap and auto	Commercial	PH, VOC, M, HM	H	H	1

SITE_NAME	SITEDESCRIPTION	SOURCE_CAT	Associated_Chemicals	THREAT_TO_GW	THREAT_TO_SW	in_WHPA
CONFIDENTIAL	Underground Storage Tanks	Commercial	PH, VOC	H	L	1
CONFIDENTIAL	Repair Shops (engine, appliances, etc.)	Commercial	PH, VOC, SOC	H	M	1
Unnamed car parts yard	Junk yards, scrap and auto	Commercial	PH, VOC, M, HM	H	H	1
Dalb Printing	Printer/publisher	Commercial	VOC, SOC	M	L	1
AUTOMATED MERCHANDISING SYS. INC.	Other	Commercial				1
JEFFERSON CNTY DEV AUTH	Other	Municipal				1
Pond	Other	Agriculture				1
Wastewater Treatment Plant	Wastewater Treatment Plant	Municipal	MP, D	L	M	1
Wastewater Lift Station	Wastewater Treatment Plant	Municipal	MP, D	L	M	1
House with old sewage system or well pump	Residential (multi-units)	Residential	VOC, NN, TO, MP	L	L	1
Stormwater Pond	Storm water basins/drains	Municipal	M, VOC, MP	M	M	1
Shepherdstown Pike Route 230	Highway	Municipal	PH, VOC, M	M	H	1
Pasture	Pasture*	Agriculture	MP, SOC	L	L	1
Farm cemetery no longer present	Cemeteries	Commercial	M, SOC, PH	L	L	1
House	Residential (single family homes)	Residential	VOC, SOC, NN	H	H	1
Hayfield	Pasture*	Agriculture	MP, SOC	L	L	1
CONFIDENTIAL	Wastewater Treatment Plant	Municipal	MP, D	L	M	1
Stormwater Pond	Storm water basins/drains	Municipal	M, VOC, MP	M	M	1
Houses	Residential (single family homes)	Residential	VOC, SOC, NN	H	H	1
Shepherdstown Pike Route 230	Highway	Municipal	PH, VOC, M	M	H	1
Needwood Farm	Pasture*	Agriculture	MP, SOC	L	L	1
Houses	Septic Systems (leachfield)*	Residential	MP, VOC, SOC, TO, NN	M	M	1
Houses	Residential (single family homes)	Residential	VOC, SOC, NN	H	H	1
Farm cemetery	Cemeteries	Commercial	M, SOC, PH	L	L	1
Houses	Residential (single family homes)	Residential	VOC, SOC, NN	H	H	1
Hayfield	Pasture*	Agriculture	MP, SOC	L	L	1
Houses	Residential (single family homes)	Residential	VOC, SOC, NN	H	H	1
Empty lots for new trailer homes	Construction areas	Commercial	M, T, PH, VOC, SOC, HM	M	H	1
Railroad crossing	Railroad Tracks (right of way)	Municipal	M, VOC, SOC, PH	H	M	1
Route 17	Highway	Municipal	PH, VOC, M	M	H	1
Sewer Lift Station	Wastewater Treatment Plant	Municipal	MP, D	L	M	1
Locust Knoll Farm	Animal Feedlots	Agriculture	NN, MP, TO	H	H	1
CSX railroad crossing	Railroad Tracks (right of way)	Municipal	M, VOC, SOC, PH	H	M	1
Parkview Woodland trailers abandoned well	Wells: abandoned	Municipal	VOC, SOC, MP, PH, NN	H	L	1

SITE_NAME	SITEDESCRIPTION	SOURCE_CAT	Associated_Chemicals	THREAT_TO_GW	THREAT_TO_SW	in_WHPA
Lift Station - Closed	Residential (single family homes)	Residential	VOC, SOC, NN	H	H	1
CONFIDENTIAL	Wood preserving/treatment facilities	Industrial	M, VOC, SOC	H	H	1
Pasture	Pasture*	Agriculture	MP, SOC	L	L	1
House	Septic Systems (leach field)*	Residential	MP, VOC, SOC, TO, NN	M	M	1
House	Residential (single family homes)	Residential	VOC, SOC, NN	H	H	1
CONFIDENTIAL	Farm machinery areas	Agriculture	PH, VOC	L	L	1
CONFIDENTIAL	Farm machinery areas	Agriculture	PH, VOC	L	L	1
CONFIDENTIAL	Car dealerships	Commercial	PH, VOC	H	L	1
Abandoned Wastewater Treatment Plant	Wastewater Treatment Plant	Municipal	MP, D	L	M	1
CONFIDENTIAL	Wastewater Treatment Plant	Municipal	MP, D	L	M	1
Pond near Quail Hollow Farm	Other	Agriculture				1
Sewer Lift Station	Wastewater Treatment Plant	Municipal	MP, D	L	M	1
Farm Storage Area	Other animal facilities	Agriculture	MP	L	L	1
Sewer Lift Station	Wastewater Treatment Plant	Municipal	MP, D	L	M	1
Sewage Treatment Plant	Wastewater Treatment Plant	Municipal	MP, D	L	M	1
CONFIDENTIAL	Gas Stations	Commercial	PH, M, VOC, SOC	H	M	1
CONFIDENTIAL	Hardware/lumber/parts stores	Commercial	VOV, SOC, HM, M	L	L	1
CONFIDENTIAL	Hardware/lumber/parts stores	Commercial	VOV, SOC, HM, M	L	L	1
Wastewater Treatment Facility	Wastewater Treatment Plant	Municipal	MP, D	L	M	1
New construction with retail stores	Parking lots/malls	Commercial	VOC, PH	L	M	1
CONFIDENTIAL	Other	Industrial				1
Auto Repair Shop	Parking lots/malls	Commercial	VOC, PH	L	M	1
CONFIDENTIAL	Chemical Drums/Storage	Industrial	PH, M, VOC, SOC	H	H	1
CONFIDENTIAL	Hazardous waste storage, treatment, recycling	Industrial	PH, R, M, VOC, SOC	H	H	1
CONFIDENTIAL	Underground Storage Tanks	Commercial	PH, VOC	H	L	1
CONFIDENTIAL	Chemical Drums/Storage	Industrial	PH, M, VOC, SOC	H	H	1
Crops: Corn, Soybean, Wheat	Crops, corn, soybean, wheat	Agriculture	NN, SOC, MP	L	L	1
Residential (single family homes)	Residential (single family homes)	Residential	VOC, SOC, NN	H	H	1
Residential (single family homes)	Residential (single family homes)	Residential	VOC, SOC, NN	H	H	1
Residential (mobile home park)	Residential (single family homes)	Residential	VOC, SOC, NN	H	H	1
Crops: Corn, Soybean, Wheat	Crops, corn, soybean, wheat	Agriculture	NN, SOC, MP	L	L	1
Crops: Corn, Soybean, Wheat	Crops, corn, soybean, wheat	Agriculture	NN, SOC, MP	L	L	1

SITE_NAME	SITEDESCRIPTION	SOURCE_CAT	Associated_Chemicals	THREAT_TO_GW	THREAT_TO_SW	in_WHPA
Residential (single family homes)	Residential (single family homes)	Residential	VOC, SOC, NN	H	H	1
Sewage Lift Station	Sewer Lines *	Municipal	M, VOC, MP, TO	H	L	1
AC Repair	Repair Shops (engine, appliances, etc.)	Commercial	PH, VOC, SOC	H	M	1
Wastewater Treatment Plant	Wastewater Treatment Plant	Municipal	MP, D	L	M	1
Railroad Tracks (right of way)	Railroad Tracks and Yards	Commercial	PH, M, VOC, SOC	H	H	1
CONFIDENTIAL	Auto repair shops	Commercial	PH, M, VOC, HM, SOC	H	M	1
CONFIDENTIAL	Research laboratories	Commercial	M, VOC, SOC	H	H	1
CONFIDENTIAL	Other	Industrial				1
CONFIDENTIAL	Greenhouses/Nurseries	Agriculture	MP, NN	L	L	1
CONFIDENTIAL	Machine and metalworking shops	Industrial	M, VOC, HM, PH, SOC	H	M	1
CONFIDENTIAL	Wood preserving/treatment facilities	Industrial	M, VOC, SOC	H	H	1
Sewer Lift Station	Wastewater Treatment Plant	Municipal	MP, D	L	M	1
Nursery and Florist	Greenhouses/Nurseries	Agriculture	MP, NN	L	L	1
CONFIDENTIAL	Machine and metalworking shops	Industrial	M, VOC, HM, PH, SOC	H	M	1
CONFIDENTIAL	Wastewater Treatment Plant	Municipal	MP, D	L	M	1
CONFIDENTIAL	Tire Dumps	Commercial	M	L	M	1
CONFIDENTIAL	Crops, corn, soybean, wheat	Agriculture	NN, SOC, MP	L	L	1
CONFIDENTIAL	Sewer Lines *	Municipal	M, VOC, MP, TO	H	L	1
CONFIDENTIAL	Sewer Lines *	Municipal	M, VOC, MP, TO	H	L	1
CONFIDENTIAL	Auto repair shops	Commercial	PH, M, VOC, HM, SOC	H	M	1
CONFIDENTIAL	Crops, corn, soybean, wheat	Agriculture	NN, SOC, MP	L	L	1
CONFIDENTIAL	Gas Stations	Commercial	PH, M, VOC, SOC	H	M	1
Northfolk and CSX Interchange	Railroad Tracks (right of way)	Municipal	M, VOC, SOC, PH	H	M	1
Sewer Lift Station	Wastewater Treatment Plant	Municipal	MP, D	L	M	1
CONFIDENTIAL	Construction areas	Commercial	M, T, PH, VOC, SOC, HM	M	H	1
CONFIDENTIAL	Research laboratories	Commercial	M, VOC, SOC	H	H	1
CONFIDENTIAL	Wastewater Treatment Plant	Municipal	MP, D	L	M	1
CONFIDENTIAL	Other	Municipal				1
Sewer Lift Station	Wastewater Treatment Plant	Municipal	MP, D	L	M	1
Arpin Logistics	Other	Industrial				1
CONFIDENTIAL	Machine and metalworking shops	Industrial	M, VOC, HM, PH, SOC	H	M	1
CONFIDENTIAL	Sawmills	Industrial	PH, VOC	M	M	1
CSX RR	Railroad Tracks (right of way)	Municipal	M, VOC, SOC, PH	H	M	1
CONFIDENTIAL	Auto repair shops	Commercial	PH, M, VOC, HM, SOC	H	M	1
CONFIDENTIAL	Crops, corn, soybean, wheat	Agriculture	NN, SOC, MP	L	L	1

Regulated PSSC List

PRIMARY_NAME	LOCATION_ADDRESS	CREATE_DATE	UPDATE_DATE	PGM_SYS_ACRNMS	in_WHPA
CONFIDENTIAL	CO RT 115	7/9/2019 2:04		NPDES:WVR110335	1
CONFIDENTIAL	WEST BURR BOULEVARD	10/7/2015 12:42	12/5/2016 11:35	NPDES:WVR106344	1
CONFIDENTIAL	NO COUNTY ROUTE	2/6/2013 8:40	1/11/2016 15:30	NPDES:WVG072353	1
CONFIDENTIAL	UNKNOWN	2/6/2013 15:54	1/11/2016 18:10	NPDES:WVR104067	1
CONFIDENTIAL	CO RT 17/5	7/18/2012 15:51	1/11/2016 14:00	NPDES:WVR104142	1
CONFIDENTIAL	PO BOX 551	2/6/2013 8:57	1/11/2016 9:20	NPDES:WV0088757	1
CONFIDENTIAL	CO RT 6	7/18/2012 15:23	1/11/2016 13:51	NPDES:WVR104755	1
CONFIDENTIAL	UNKNOWN	2/6/2013 6:44	1/11/2016 9:19	NPDES:WVR100645	1
CONFIDENTIAL	UNKNOWN	2/6/2013 8:47	1/11/2016 9:20	NPDES:WVR100426	1
CONFIDENTIAL	RT. 340	7/18/2012 15:56	1/11/2016 8:41	NPDES:WVR104520	1
CONFIDENTIAL	UNKNOWN	2/6/2013 15:20	1/11/2016 13:16	NPDES:WVR101386, NPDES:WVR105248	1
CONFIDENTIAL	218 EVERGREEN ST	3/1/2000 0:00	12/29/2014 12:53	ICIS:11900	1
CONFIDENTIAL	WV RT 8 WILTSHIRE RD	2/6/2013 16:52	1/11/2016 8:56	NPDES:WVR104252	1
CONFIDENTIAL	UNKNOWN	2/6/2013 16:08	1/11/2016 12:19	NPDES:WVR101057	1
CONFIDENTIAL	FLOWING SPRINGS ROAD	3/1/2000 0:00	11/27/2013 13:03	NPDES:WV0105856	1
CONFIDENTIAL	CO RT 8/4	5/11/2018 10:21		NPDES:WVR109062	1
CONFIDENTIAL	CO RT 8/1	6/5/2018 14:56		NPDES:WVR109216	1
CONFIDENTIAL	UNKNOWN	2/6/2013 9:04	1/11/2016 19:06	NPDES:WVG072406	1
CONFIDENTIAL	WEST CONGRESS STREET	10/23/2007 20:15	2/28/2019 15:44	SEMS:WVD988767612	1
CONFIDENTIAL	RT 9 AND WAR ADMIRAL BLVD	10/7/2015 11:11	12/5/2016 11:25	NPDES:WVR106178	1
CONFIDENTIAL	UNKNOWN	2/6/2013 15:53	1/11/2016 9:37	NPDES:WVR103917	1
CONFIDENTIAL	WV RT 9	7/18/2012 15:52	1/11/2016 16:38	NPDES:WVR102263	1
CONFIDENTIAL	UNKNOWN	2/6/2013 14:46	1/11/2016 18:22	NPDES:WVR103433	1
CONFIDENTIAL	0.34 MI S OF CO. 8 TO CO. 8	2/6/2013 9:53	1/11/2016 17:23	NPDES:WVR100121	1
CONFIDENTIAL	ROUTE 9	7/18/2012 15:53	1/11/2016 17:04	NPDES:WVR105585	1
CONFIDENTIAL	RT 8	2/6/2013 12:45	1/11/2016 7:28	NPDES:WV0042994	1

PRIMARY_NAME	LOCATION_ADDRESS	CREATE_DATE	UPDATE_DATE	PGM_SYS_ACRNMS	in_WHPA
CONFIDENTIAL	2217 WILTSHIRE RD	3/1/2000 0:00	5/3/2015 11:25	ICIS:1800061768	1
CONFIDENTIAL	CO ROUTE 8, WILTSHIRE ROAD	5/9/2016 9:22	10/7/2016 15:57	NPDES:WVR108247	1
AUTOMATED MERCHANDISING SYS INC	255 W BURR BLVD	3/1/2000 0:00	6/1/2017 17:15	EIS:6883811, TRIS:25430TMTDM10	1
AUTOMATED MERCHANDISING SYSTEMS	255 W. BURR BLVD.	2/4/2017 8:58		AIR:03000000WV0000	1
AVALANCHE SERVICES, LLC	113 MCGARRY BLVD	9/28/2018 8:55		OSHA-OIS:342621836	1
AVW OF WEST VIRGINIA, INC	771 JAMES BURR BLVD	12/7/2016 12:56		NPDES:WVG611792	1
AVW OF WEST VIRGINIA, INC.	362 WEST BURR BLVD.	2/24/2011 12:24	10/7/2016 16:11	NPDES:WVG611506	1
BLACKFORD VILLAGE TEMPORARY CO	2819 WILTSHIRE ROAD WV RT 8	2/6/2013 8:32	1/11/2016 18:35	NPDES:WVG611267	1
DALB, INC	73 INDUSTRIAL BLVD	9/27/2018 3:46		OSHA-OIS:342079266	1
DALB, INC., KEARNEYSVILLE	105 INDUSTRIAL BOULEVARD	3/1/2000 0:00	6/1/2017 17:14	AIRS/AFS:5403700061, EIS:6883911, NCDB:C03#93-0108NT, NCDB:I03#199207098 3003 1,	1
CONFIDENTIAL	340 EDMOND RD, SUITE A	3/1/2000 0:00	1/11/2016 12:40	NPDES:WV0084361	1
CONFIDENTIAL	635 MCGARRY BLVD	1/5/2018 14:53		NPDES:WVG980197	1
CONFIDENTIAL	CO RT 9/68	4/9/2019 12:08		NPDES:WVR110191	1
ROUTE 9 SEWER INFRASTRUCTURE PROJECT	WV ROUTE 9 AND NORTHPORT AVE	9/9/2018 9:46		NPDES:WVR109958	1
ROYAL VENDORS INC	201 INDUSTRIAL BLVD.	7/7/2010 7:27	6/1/2017 17:20	NPDES:WVG610109, TRIS:25430RYLVN201I	1
ROYAL VENDORS, INC.	BOULEVARD	9/27/2018 16:46		OSHA-OIS:341069466	1
SCHONSTEDT INSTRUMENT COMPANY, LLC	100 EDMOND RD	9/27/2018 3:17		OSHA-OIS:342078771	1
CONFIDENTIAL	120 INDUSTRIAL BOULEVARD	3/1/2000 0:00	6/3/2016 16:30	NPDES:WVG550533	1
SUR-LOC FLOORING AT BURR BUSIN	UNKNOWN	2/7/2013 7:58	12/29/2014 17:47	NPDES:WVR105678	1
CONFIDENTIAL	395 STEELEY WAY	4/9/2019 12:13		NPDES:WVG611874	1

PRIMARY_NAME	LOCATION_ADDRESS	CREATE_DATE	UPDATE_DATE	PGM_SYS_ACRNMS	in_ WHPA
CONFIDENTIAL	261 INDUSTRIAL BLVD	7/10/2015 13:28	10/7/2016 17:32	NPDES:WVG611732, NPDES:WVU008385	1
0.70 MI S OF JEFF CO 20 TO 0.1	UNKNOWN	2/6/2013 6:43	8/10/2016 8:32	NPDES:WVR100487	1
84 LUMBER, RANSON	WV RT 115/3	2/6/2013 15:03	1/11/2016 18:58	NPDES:WVR101368	1
AMERICAN HERITAGE EAST	CR 15	7/18/2012 15:47	12/5/2016 11:16	NPDES:WVR101440	1
BRIAN RUN SUBDIVISION, PHASE 6	UNKNOWN	7/18/2012 15:49	5/3/2015 13:33	NPDES:WVR101989	1
BRIAN RUN V	UNKNOWN	6/15/2012 13:19	5/3/2015 13:37	NPDES:WVR100522	1
BRIAR RUN SUBDIVISION PHASE VIB	CO RT 17	2/2/2018 16:19		NPDES:WVR109001	1
CHICK-FIL-A, RANSON	UNKNOWN	2/6/2013 14:38	1/11/2016 17:40	NPDES:WVR104036	1
CURRIE STATION	CO. RT. #9	7/18/2012 15:42	12/29/2014 17:39	NPDES:WVR103613	1
FAIRFAX CROSSING TH AND SF	RT 9	9/6/2013 16:50	10/7/2016 16:19	NPDES:WVR106728	1
FIGGIE INTERNATIONAL INC	RTE 9	6/22/2006 20:16	2/28/2019 15:42	SEMS:WVD003062643	1
FLOWING SPRINGS SEWER SYSTEM I	UNKNOWN	2/6/2013 13:45	1/11/2016 15:50	NPDES:WVR101338	1
CONFIDENTIAL	16TH AVE & FOAL STREET (J	2/6/2013 18:29	1/11/2016 19:11	NPDES:WVR104294	1
CONFIDENTIAL	419 16TH AVENUE	6/2/2017 15:01		NPDES:WVU008701	1
LOCUST KNOLL FARM SUBDIVISION	UNKNOWN	2/6/2013 9:17	1/11/2016 18:48	NPDES:WVR100357	1
MCKINNEY'S AUTO REPAI	CO. RT. 115	2/6/2013 17:23	1/11/2016 12:34	NPDES:WVR103673	1
OAK LEE DRIVE PARITAL ROADWAY RECONSTRUCTION	WV - 9	3/1/2019 12:12		NPDES:WVR110185	1
PAVING PROJECT	CO RT 15	5/9/2016 9:37	10/7/2016 16:03	NPDES:WVR107974	1
POTOMAC MARKETPLACE	BETWEEN RT 9 & FLOWING SPRINGS	2/6/2013 11:49	1/11/2016 15:24	NPDES:WVR100570	1
PRESIDENT'S POINTE PHASE I	OAK LEE DR., JEFFERSON CO	4/9/2019 12:11		NPDES:WVR110165	1
PRESIDENT'S POINTE, SECTION 1	I/S RT 17 & RT 9	2/6/2013 14:20	1/11/2016 14:05	NPDES:WVR102008	1
RANSON PLANT ADDITION/TREATING	UNKNOWN	2/7/2013 7:49	3/5/2013 10:08	NPDES:WVR102204	1
RANSON RETAIL II, LLC	WV RT. 9	7/18/2012 15:56	1/11/2016 9:10	NPDES:WVR102603	1
RANSON STORAGE, LLC	UNKNOWN	2/7/2013 7:36	3/5/2013 10:08	NPDES:WVR103047	1
RITE AID #7938	BLVD	2/19/2013 14:28	11/25/2015 12:55	BR:WVR000528844	1
ROCKWELL MINI STORAGE - ADDITI	WAR ADMIRAL BLVD AND PHILIP AV	2/7/2013 7:29	3/5/2013 10:08	NPDES:WVR104574	1
ROUTE 115 WATERLINE EXTENSION	CO RT 115	1/12/2017 9:11		NPDES:WVR108480	1
T.A LOWERY WATERLINE EXTENSION	ROUTE 9	3/13/2017 13:00		NPDES:WVR108439	1

PRIMARY_NAME	LOCATION_ADDRESS	CREATE_DATE	UPDATE_DATE	PGM_SYS_ACRNMS	in_ WHPA
TACKLEY BASIN CONSTRUCTION	CRS 9 & 8	7/18/2012 15:48	3/5/2013 10:07	NPDES:WVR101581	1
TACKLEY MILL NEIGHBORHOOD	I/S RT 8 & RT 9	7/18/2012 15:49	3/5/2013 10:07	NPDES:WVR102007	1
THE BLVD AT POTOMAC TOWN CENTER FUTURE PHASE IIIA	CO. RT 9	7/18/2012 15:43	1/11/2016 9:37	NPDES:WVR103627	1
THE HOME DEPOT-RANSON, WV	RT 9 AT OAK LEE DR.	2/6/2013 17:53	1/11/2016 13:01	NPDES:WVR101773	1
CONFIDENTIAL	RT 8 WILTSHIRE RD	11/4/2013 7:42	10/7/2016 17:14	NPDES:WVR106742	1
UFP RANSON, LLC	249 16TH AVENUE	9/27/2018 3:26		OSHA-OIS:340775410, OSHA-OIS:341283638	1
UNIVERSAL FOREST PROD EASTERN DIVISION	ROUTE 9 WEST	3/1/2000 0:00	10/7/2016 16:20	BR:WVD982364309, ICIS:8029957, NPDES:WV0076724,	1
WILD ROSE SUBDIVISION	RT 15	7/18/2012 15:49	1/11/2016 19:11	NPDES:WVR101905	1
WV 9 0.11 MI. S WV 115 TO 0.70	UNKNOWN	2/6/2013 9:50	1/11/2016 15:55	NPDES:WVR100543	1
ADDITIONS TO JEFFERSON COUNTY	CR 17 (FLOWING SPRINGS RD)	2/6/2013 15:35	1/11/2016 17:02	NPDES:WVR101877	1
BURR BUSINESS PARK	RT 8, WILTSHIRE RD	2/6/2013 18:43	1/11/2016 12:41	NPDES:WVR103009	1
BURR INDUSTRIAL PARK, LOT 24	RTS. 8 & 9/33	2/6/2013 17:19	1/11/2016 16:41	NPDES:WVR103285	1
BURR-BARDANE INDUSTRIAL PARK R	CRS 9/33/ 8/1, & 8/2	2/6/2013 10:56	1/11/2016 19:03	NPDES:WVR101039	1
CSXT TRACK LOWERING BELOW NS RAILROAD BRIDGE	CO RT 16	5/9/2016 10:03	10/7/2016 16:23	NPDES:WVR108061	1
CSXT TRACK LOWERING BELOW NSR BRIDGE	NEAR ROUTE 16 (RIDGE ROAD)	5/9/2016 9:34	10/7/2016 16:44	NPDES:WVR107965	1
JCS TRANSPORTATION AND OPERATING FACILITY	754 SHENANDOAH JUNCTION RD	7/1/2003 16:17	10/7/2016 17:33	NPDES:WVG611502	1
JEFFERSON COUNTY LITTLE LEAGUE EXPANSION	CO RT 20	4/6/2018 15:12		NPDES:WVR109030	1
T A LOWERY ELEMENTARY	103 SHENANDOAH JUNCTION ROAD	2/17/2010 18:16	5/3/2015 13:04	ICIS:1800041755	1
THE CROFTS AT SHEPHERDSTOWN	UNKNOWN	2/6/2013 17:43	1/11/2016 10:30	NPDES:WVR101450	1

PRIMARY_NAME	LOCATION_ADDRESS	CREATE_DATE	UPDATE_DATE	PGM_SYS_ACRNMS	in_ WHPA
CONFIDENTIAL	CO RT 115	7/9/2019 2:04		NPDES:WVR110335	1
CONFIDENTIAL	WEST BURR BOULEVARD	10/7/2015 12:42	12/5/2016 11:35	NPDES:WVR106344	1
CONFIDENTIAL	NO COUNTY ROUTE	2/6/2013 8:40	1/11/2016 15:30	NPDES:WVG072353	1
CONFIDENTIAL	UNKNOWN	2/6/2013 15:54	1/11/2016 18:10	NPDES:WVR104067	1
CONFIDENTIAL	CO RT 17/5	7/18/2012 15:51	1/11/2016 14:00	NPDES:WVR104142	1
CONFIDENTIAL	PO BOX 551	2/6/2013 8:57	1/11/2016 9:20	NPDES:WV0088757	1
CONFIDENTIAL	CO RT 6	7/18/2012 15:23	1/11/2016 13:51	NPDES:WVR104755	1
CONFIDENTIAL	UNKNOWN	2/6/2013 6:44	1/11/2016 9:19	NPDES:WVR100645	1
CONFIDENTIAL	UNKNOWN	2/6/2013 8:47	1/11/2016 9:20	NPDES:WVR100426	1
CONFIDENTIAL	RT. 340	7/18/2012 15:56	1/11/2016 8:41	NPDES:WVR104520	1
CONFIDENTIAL	UNKNOWN	2/6/2013 15:20	1/11/2016 13:16	NPDES:WVR101386, NPDES:WVR105248	1
CONFIDENTIAL	WV RT 8 WILTSHIRE RD	2/6/2013 16:52	1/11/2016 8:56	NPDES:WVR104252	1
CONFIDENTIAL	UNKNOWN	2/6/2013 16:08	1/11/2016 12:19	NPDES:WVR101057	1
CONFIDENTIAL	FLOWING SPRINGS ROAD	3/1/2000 0:00	11/27/2013 13:03	NPDES:WV0105856	1
CONFIDENTIAL	CO RT 8/4	5/11/2018 10:21		NPDES:WVR109062	1
CONFIDENTIAL	CO RT 8/1	6/5/2018 14:56		NPDES:WVR109216	1
CONFIDENTIAL	UNKNOWN	2/6/2013 9:04	1/11/2016 19:06	NPDES:WVG072406	1
CONFIDENTIAL	RT 9 AND WAR ADMIRAL BLVD	10/7/2015 11:11	12/5/2016 11:25	NPDES:WVR106178	1
CONFIDENTIAL	UNKNOWN	2/6/2013 15:53	1/11/2016 9:37	NPDES:WVR103917	1
CONFIDENTIAL	WV RT 9	7/18/2012 15:52	1/11/2016 16:38	NPDES:WVR102263	1
CONFIDENTIAL	UNKNOWN	2/6/2013 14:46	1/11/2016 18:22	NPDES:WVR103433	1
CONFIDENTIAL	0.34 MI S OF CO. 8 TO CO. 8	2/6/2013 9:53	1/11/2016 17:23	NPDES:WVR100121	1
CONFIDENTIAL	ROUTE 9	7/18/2012 15:53	1/11/2016 17:04	NPDES:WVR105585	1
CONFIDENTIAL	RT 8	2/6/2013 12:45	1/11/2016 7:28	NPDES:WV0042994	1
CONFIDENTIAL	CO ROUTE 8, WILTSHIRE ROAD	5/9/2016 9:22	10/7/2016 15:57	NPDES:WVR108247	1
CONFIDENTIAL	771 JAMES BURR BLVD	12/7/2016 12:56		NPDES:WVG611792	1
CONFIDENTIAL	635 MCGARRY BLVD	1/5/2018 14:53		NPDES:WVG980197	1
CONFIDENTIAL	120 INDUSTRIAL BOULEVARD	3/1/2000 0:00	6/3/2016 16:30	NPDES:WVG550533	1
CONFIDENTIAL	UNKNOWN	2/7/2013 7:58	12/29/2014 17:47	NPDES:WVR105678	1
CONFIDENTIAL	395 STEELEY WAY	4/9/2019 12:13		NPDES:WVG611874	1
CONFIDENTIAL	UNKNOWN	2/6/2013 6:43	8/10/2016 8:32	NPDES:WVR100487	1
CONFIDENTIAL	WV RT 115/3	2/6/2013 15:03	1/11/2016 18:58	NPDES:WVR101368	1
CONFIDENTIAL	CR 15	7/18/2012 15:47	12/5/2016 11:16	NPDES:WVR101440	1
CONFIDENTIAL	UNKNOWN	7/18/2012 15:49	5/3/2015 13:33	NPDES:WVR101989	1

PRIMARY_NAME	LOCATION_ADDRESS	CREATE_DATE	UPDATE_DATE	PGM_SYS_ACRNMS	in_ WHPA
BRIAN RUN V	UNKNOWN	6/15/2012 13:19	5/3/2015 13:37	NPDES:WVR100522	1
BRIAR RUN SUBDIVISION PHASE VIB	CO RT 17	2/2/2018 16:19		NPDES:WVR109001	1
CHICK-FIL-A, RANSON	UNKNOWN	2/6/2013 14:38	1/11/2016 17:40	NPDES:WVR104036	1
CURRIE STATION	CO. RT. #9	7/18/2012 15:42	12/29/2014 17:39	NPDES:WVR103613	1
FAIRFAX CROSSING TH AND SF	RT 9	9/6/2013 16:50	10/7/2016 16:19	NPDES:WVR106728	1
FLOWING SPRINGS SEWER SYSTEM I	UNKNOWN	2/6/2013 13:45	1/11/2016 15:50	NPDES:WVR101338	1
CONFIDENTIAL	16TH AVE & FOAL STREET (J	2/6/2013 18:29	1/11/2016 19:11	NPDES:WVR104294	1
CONFIDENTIAL	419 16TH AVENUE	6/2/2017 15:01		NPDES:WVU008701	1
LOCUST KNOLL FARM SUBDIVISION	UNKNOWN	2/6/2013 9:17	1/11/2016 18:48	NPDES:WVR100357	1
MCKINNEY'S AUTO REPAI	CO. RT. 115	2/6/2013 17:23	1/11/2016 12:34	NPDES:WVR103673	1
PAVING PROJECT	CO RT 15	5/9/2016 9:37	10/7/2016 16:03	NPDES:WVR107974	1
POTOMAC MARKETPLACE	BETWEEN RT 9 & FLOWING SPRINGS	2/6/2013 11:49	1/11/2016 15:24	NPDES:WVR100570	1
PRESIDENT'S POINTE PHASE I	OAK LEE DR., JEFFERSON CO	4/9/2019 12:11		NPDES:WVR110165	1
PRESIDENT'S POINTE, SECTION 1	I/S RT 17 & RT 9	2/6/2013 14:20	1/11/2016 14:05	NPDES:WVR102008	1
RANSON PLANT ADDITION/TREATING	UNKNOWN	2/7/2013 7:49	3/5/2013 10:08	NPDES:WVR102204	1
RANSON RETAIL II, LLC	WV RT. 9	7/18/2012 15:56	1/11/2016 9:10	NPDES:WVR102603	1
RANSON STORAGE, LLC	UNKNOWN	2/7/2013 7:36	3/5/2013 10:08	NPDES:WVR103047	1
ROCKWELL MINI STORAGE - ADDITI	WAR ADMIRAL BLVD AND PHILIP AV	2/7/2013 7:29	3/5/2013 10:08	NPDES:WVR104574	1
TACKLEY BASIN CONSTRUCTION	CRS 9 & 8	7/18/2012 15:48	3/5/2013 10:07	NPDES:WVR101581	1
TACKLEY MILL NEIGHBORHOOD	I/S RT 8 & RT 9	7/18/2012 15:49	3/5/2013 10:07	NPDES:WVR102007	1
THE BLVD AT POTOMAC TOWN CENTER FUTURE	CO. RT 9	7/18/2012 15:43	1/11/2016 9:37	NPDES:WVR103627	1
THE HOME DEPOT-RANSON, WV	RT 9 AT OAK LEE DR.	2/6/2013 17:53	1/11/2016 13:01	NPDES:WVR101773	1
CONFIDENTIAL	RT 8 WILTSHIRE RD	11/4/2013 7:42	10/7/2016 17:14	NPDES:WVR106742	1
WILD ROSE SUBDIVISION	RT 15	7/18/2012 15:49	1/11/2016 19:11	NPDES:WVR101905	1
WV 9 0.11 MI. S WV 115 TO 0.70	UNKNOWN	2/6/2013 9:50	1/11/2016 15:55	NPDES:WVR100543	1
ADDITIONS TO JEFFERSON COUNTY	CR 17 (FLOWING SPRINGS RD)	2/6/2013 15:35	1/11/2016 17:02	NPDES:WVR101877	1
BURR BUSINESS PARK	RT 8, WILTSHIRE RD	2/6/2013 18:43	1/11/2016 12:41	NPDES:WVR103009	1
BURR INDUSTRIAL PARK, LOT 24	RTS. 8 & 9/33	2/6/2013 17:19	1/11/2016 16:41	NPDES:WVR103285	1
BURR-BARDANE INDUSTRIAL PARK R	CRS 9/33/ 8/1, & 8/2	2/6/2013 10:56	1/11/2016 19:03	NPDES:WVR101039	1
CSXT TRACK LOWERING BELOW NS RAILROAD	CO RT 16	5/9/2016 10:03	10/7/2016 16:23	NPDES:WVR108061	1
CSXT TRACK LOWERING BELOW NSR BRIDGE	NEAR ROUTE 16 (RIDGE ROAD)	5/9/2016 9:34	10/7/2016 16:44	NPDES:WVR107965	1
THE CROFTS AT SHEPHERDSTOWN	UNKNOWN	2/6/2013 17:43	1/11/2016 10:30	NPDES:WVR101450	1

PERMIT_ID	FAC_NAME	ISSUEDATE	EXPIREDATE	SUB_DESC	in_ WHPA
WV0076724	UFP Ranson, LLC	9/21/1987	1/6/2021	Wood Treatment	1
WVG550533	Shenandoah Junction WWTP	12/24/1993	9/30/2020	Sewage General	1
WVG610109	ROYAL VENDORS INC	7/23/1993	2/28/2019	Storm Water Industrial (GP)	1
19996		2/19/2004	NA	Septic Seal Permit	1
WVR101440	American Heritage East	1/3/2006	12/4/2012	Storm Water Construction (GP)	1
WV0105856	PNGI Charles Town Gaming LLC	5/11/2006	6/30/2022	Ind Other	1
WV0105856	PNGI Charles Town Gaming LLC	5/11/2006	6/30/2022	OTHER	1
29677		3/16/2006	NA	Septic Seal Permit	1
WVR106344	Automated Merchandising Systems, Inc	11/9/2012	1/3/2018	Storm Water Construction (NOI)	1
WVR106728	FAIRFAX CROSSING TH AND SF	8/29/2013	1/3/2018	Storm Water Construction (GP)	1
WVRNE0162	DALB, Inc.	10/16/2014	2/28/2019	Storm Water Industrial (No Exposure)	1
1387-14-037	UFP Ranson LLC (Universal Forest Products)	10/20/2014	11/6/2024	5W32 - Septic Systems(Drain Field Disposal Mthd)	1
51570		4/23/2015	NA	Septic Seal Permit	1
WVG611732	USA PARTS SUPPLY	6/24/2015	2/28/2019	Storm Water Industrial (GP)	1
53282		4/12/2016	NA	Septic Seal Permit	1
53054		2/16/2016	NA	Septic Seal Permit	1
53368		4/22/2016	NA	Septic Seal Permit	1
WVG611792	AVW of West Virginia, inc	9/14/2016	2/28/2019	Storm Water Industrial (GP)	1
WVR108480	Route 115 Waterline Extension	11/15/2016	11/15/2017	Storm Water Construction (NOI)	1
WVR108439	T.A Lowery Waterline Extension	1/5/2017	1/5/2018	Storm Water Construction (GP)	1
WVG980197	Jefferson County Bus Garage	11/14/2017	1/26/2022	WV DOH+MUN	1
WVR109001	Briar Run Phase VIB	12/14/2017	2/9/2024	Storm Water Construction (NOI)	1
WVR109030	Jefferson County Little League Expansion	2/2/2018	6/30/2018	Storm Water Construction (NOI)	1
60405		2/28/2020	NA	Septic Seal Permit	1
WVR110185	Oak Lee Drive Parital Roadway Reconstruction	1/21/2019	2/9/2024	Storm Water Construction (NOI)	1
WVR109958	City of Charles Town Permit WV0022349	8/31/2018	5/19/2019	Storm Water Construction (GP)	1
WVR110165	President's Pointe Phase I	1/17/2019	2/9/2024	Storm Water Construction (GP)	1
58871		6/27/2019	NA	Septic Seal Permit	1
WVR110255	Ranson Dollar General	9/11/2019	9/11/2020	Storm Water Construction (NOI)	1
WVR110335	Burr Industrial Park - Lot 12	6/18/2019	6/18/2020	Storm Water Construction (NOI)	1
WVR110191	Northport Avenue Extenison	2/6/2019	9/11/2020	Storm Water Construction (GP)	1
WVG611874	TeMa North America, LLC Jefferson County Operations	3/29/2019	8/31/2019	Storm Water Industrial (GP)	1

PERMIT_ID	FAC_NAME	ISSUEDATE	EXPIREDATE	SUB_DESC	PERM_TYPE	in_WHPA
WV0076724	UFP Ranson, LLC	9/21/1987	1/6/2021	Wood Treatment	Industrial	1
WV0076724	UFP Ranson, LLC	9/21/1987	1/6/2021	Wood Treatment	Industrial	1
WV0076724	UFP Ranson, LLC	9/21/1987	1/6/2021	Wood Treatment	Industrial	1
WV0076724	UFP Ranson, LLC	9/21/1987	1/6/2021	Wood Treatment	Industrial	1
WV0076724	UFP Ranson, LLC	9/21/1987	1/6/2021	Wood Treatment	Industrial	1
WV0076724	UFP Ranson, LLC	9/21/1987	1/6/2021	Wood Treatment	Industrial	1
WVG550533	Shenandoah Junction WWTP	12/24/1993	9/30/2020	Sewage General	Sewage	1
WVG610109	ROYAL VENDORS INC	7/23/1993	2/28/2019	Storm Water Industrial (GP)	Industrial	1
WVG610109	ROYAL VENDORS INC	7/23/1993	2/28/2019	Storm Water Industrial (GP)	Industrial	1
0367-01-037	Jefferson Co. BOE (CW Shipley,North Jefferson & South Jefferson Elem. Schools	10/23/2001	6/26/2019	5W32 - Septic Systems(Drain Field Disposal Mthd)	UIC Sewage	1
WV0105856	PNGI Charles Town Gaming LLC	5/11/2006	6/30/2022	Ind Other	Sewage	1
WV0105856	PNGI Charles Town Gaming LLC	5/11/2006	6/30/2022	Ind Other	Sewage	1
WV0105856	PNGI Charles Town Gaming LLC	5/11/2006	6/30/2022	OTHER	Sewage	1
WV0105856	PNGI Charles Town Gaming LLC	5/11/2006	6/30/2022	OTHER	Sewage	1
1387-14-037	UFP Ranson LLC (Universal Forest Products)	10/20/2014	11/6/2024	5W32 - Septic Systems(Drain Field Disposal Mthd)	UIC Sewage	1
WVG611732	USA PARTS SUPPLY	6/24/2015	2/28/2019	Storm Water Industrial (GP)	Industrial	1
WVG611792	AVW of West Virginia, inc	9/14/2016	2/28/2019	Storm Water Industrial (GP)	Industrial	1
WVG980197	Jefferson County Bus Garage	11/14/2017	1/26/2022	WV DOH+MUN	Industrial	1
WVG611874	TeMa North America, LLC Jefferson County Operations	3/29/2019	8/31/2019	Storm Water Industrial (GP)	Industrial	1
WVG611874	TeMa North America, LLC Jefferson County Operations	3/29/2019	8/31/2019	Storm Water Industrial (GP)	Industrial	1

APPENDIX B. EARLY WARNING MONITORING SYSTEM FORMS

Select and Attach the Appropriate Form for Your System

Form A - Complete if you currently have an early warning monitoring system for a groundwater source.

Form B - Complete if you currently have an early warning monitoring system installed for a surface water source.

Form C - If you do not currently have an early warning monitoring system installed for a surface water intake or are planning to upgrade or replace your current system, complete this form.

Form D - If you do not currently have an early warning monitoring system installed for a groundwater source or are planning to upgrade or replace your current system, complete this form.

Note: You may need to fill out and attach more than one form to your Protection Plan, depending on your current situation.

Appendix B - Form C
Ground Monitoring Worksheet

Describe the type of early warning detection equipment installed:
The JUI Walnut Grove WTP currently employs continuous monitoring of turbidity using a HACH 1720E in-line turbidimeter for the raw water entering the plant. An auto dialer system is in place to notify the operator in the event of high or low chlorine residual, high turbidity, low pressure or low clearwell level. JUI should consider monitoring additional parameters, including conductivity, dissolved oxygen, alkalinity, hardness and temperature.
How many monitoring (sentinel) wells are established?:
None. Due to the complex hydrogeologic setting and widespread geospatial position of PSSCs, there is no guarantee that installation of monitoring wells would provide adequate advanced notification of contamination in the groundwater system. Monitoring wells may be considered in the future if outside funding sources are available.
What is the expeced rate of travel of a contaminant through the groundwater system?:
Travel times are highly dependent on the 1.) Location of the contaminant source with respect to System sources, 2.) Hydraulic conductivity of geologic formations, which reflects the degree to which fractures are naturally enlarged and 3.) Hydraulic gradient along groundwater flow pathways. As such, travel times vary significantly throughout the SWPA and change as hydrologic conditions change.
Provide the distance from the contaminant source to the monitoring wells:
There are no monitoring wells in place for this utility. Multiple contaminant sources within SWPA; ranging in distance from 50 ft. to 13,082 ft. from System source.
What is the distance of the monitoring equipment to the well head?:
The equipment is located in the head works of the plant and grab samples are analyzed at the lab, as no monitoring wells currently exist.
Describe the mechanism to store the data and an institutional framework to analyze and interpret the data:
Water Chemistry for turbidity and pH is recorded on daily charts for the operators to reference as well as chart recorders.
Describe the process to determine the credibility of a contamination event if a change is detected in the quality of source water:
If a notable change is detected in water quality for a parameter regularly monitored, an additional water quality sample will be taken immediately for result verification. If the result is confirmed, more comprehensive testing could be performed, depending on the type of water quality change observed (for the purpose of differentiating between hazard types). JUI Walnut Grove WTP personnel may also choose to shut down the Walnut Grove well pumps until an appropriate course of action is determined. This would not affect the quality or quantity of water delivered to customers, as the utility has adequate storage for several days, as well as interconnections with the JUI owned and operated Briar Run and Meadowbrook WTPs. If the sample is in violation of an MCL, an additional water quality sample will be taken immediately for result verification. As water quality results are pending, JUI Walnut Grove WTP personnel should shut down the Walnut Grove well pumps until an appropriate course of action is determined. This would not affect the quality or quantity of water delivered to customers, as the utility has adequate storage for several days, as well as interconnections with the JUI owned and operated Briar Run and Meadowbrook WTPs.

APPENDIX C. COMMUNICATION PLAN TEMPLATE

Walnut Grove Utilities

PWSID: WV3301942

Authorizing Signature: Stephanie Reel

Contact Phone Number: (304)728-2078

Contact Email Address: sreel@juiwater.net

Plan Developed On: July 2021

ACKNOWLEDGMENTS:

This plan was developed by [insert name, title of person completing plan, and who they work for] to meet certain requirements of the Source Water and Assessment Protection Program (SWAPP) and the Wellhead Protection Program (WHPP) for the State of West Virginia, as directed by the federal Safe Drinking Water Act (SDWA) and state laws and regulations.

INTRODUCTION

Legislative Rule 64CSR3 requires public water systems to develop a Communication Plan that documents how public water suppliers, working in concert with state and local emergency response agencies, shall notify state and local health agencies and the public in the event of a spill or contamination event that poses a potential threat to public health and safety. The plan must indicate how the public water supplier will provide updated information, with an initial notification to the public to occur no later than thirty minutes after the supplier becomes aware that the spill, release or potential contamination of the public water system poses a potential threat to public health and safety.

The public water system has responsibility to communicate to the public, as well as to state and local health agencies. This plan is intended to comply with the requirements of Legislative Rule 64CSR3, and other state and federal regulations.

TIERS REPORTING SYSTEM

This water system has elected to use the Tiered Incident / Event Reporting System (TIERS) for communicating with the public, agencies, the media, and other entities in the event of a spill or other incident that may threaten water quality. TIERS provides a multi-level notification framework, which escalates the communicated threat level commensurate with the drinking water system risks associated with a particular contamination incident or event. TIERS also includes a procedural flow chart illustrating key incident response communication functions and how they interface with overall event response / incident management actions. Finally, TIERS identifies the roles and responsibilities for key people involved in risk response, public notification, news media and other communication.

TIERS provides an easy-to-remember five-tiered **A-B-C-D-E** risk-based incident response communication format, as described below. Table 1 provides also associated risk levels.

A = **A**nnouncement. The water system is issuing an announcement to the public and public agencies about an incident or event that may pose a threat to water quality. Additional information will be provided as it becomes available. As always, if water system customers notice anything unusual about their water, they should contact the water system.

B = **B**oil Water Advisory. A boil water advisory has been issued by the water system. Customers may use the water for showering, bathing, and other non-potable uses, but should boil water used for drinking or cooking.

C = **C**annot Drink. The water system asks that users not drink or cook with the water at this time. Non-potable uses, such as showering, bathing, cleaning, and outdoor uses are not affected.

D = **D**o Not Use. An incident or event has occurred affecting nearly all uses of the water. Do not use the water for drinking, cooking, showering, bathing, cleaning, or other tasks where water can come in contact with your skin. Water can be used for flushing commodes and fire protection.

E = **E**mergency. Water cannot be used for any reason.

Tier	Tier Category	Risk Level	Tier Summary
A	Announcement	Low	The water system is issuing an announcement to the public and public agencies about an incident or event that could pose a threat to public health and safety. Additional information will be provided as it becomes available.
B	Boil Water Advisory	Moderate	Water system users are advised to boil any water to be used for drinking or cooking, due to possible microbial contamination. The system operator will notify users when the boil water advisory is lifted.
C	Cannot Drink	High	System users should not drink or cook with the water until further notice. The water can still be used for showering, bathing, cleaning, and other tasks.
D	Do Not Use	Very High	The water should only be used for flushing commodes and fire protection until further notice. More information on this notice will be provided as soon as it is available.
E	Emergency	Extremely High	The water should not be used for any purpose until further notice. More information on this notice will be provided as soon as it is available.

COMMUNICATION TEAM

The Communication Team for the water system is listed in the table below, along with key roles. In the event of a spill or other incident that may affect water quality, the water system spokesperson will provide initial information, until the team assembles (if necessary) to provide follow-up communication

Water system communication team members, organizations, and roles.

Team Member Name	Organization	Phone	Email
Stephanie Reel	Walnut Grove Utilities	(304)728-2078	sreel@juiwater.net
Jeff Pippel	Walnut Grove Utilities	(304)728-2077	jpippel@juiwater.net

In the event of a spill, release, or other incident that may threaten water quality, members of the team who are available will coordinate with the management staff of the local water supplier to:

- Collect information needed to investigate, analyze, and characterize the incident/event
- Provide information to the management staff, so they can decide how to respond
- Assist the management staff in handling event response and communication duties
- Coordinate fully and seamlessly with the management staff to ensure response effectiveness

COMMUNICATION TEAM DUTIES

The communication team will be responsible for working cooperatively with the management staff and state and local emergency response agencies to notify local health agencies and the public of the initial spill or contamination event. The team will also provide updated information related to any contamination or impairment of the source water supply or the system's drinking water supply.

According to Legislative Rule 64CSR3, the initial notification to the public will occur no later than thirty minutes after the public water system becomes aware that the spill, release or potential contamination of the public water system poses a potential threat to public health and safety.

As part of the group implementing the Source Water Protection Plan, team members are expected to be familiar with the plan, including incident/event response and communication tasks. Specifically, team members should:

- Be knowledgeable on elements of the Source Water Protection Plan and Communication Plan
- Attend team meetings to ensure up-to-date knowledge of the system and its functions
- Participate in periodic exercises that “game out” incident response and communication tasks
- Help to educate local officials, the media, and others on source water protection
- Cooperate with water supplier efforts to coordinate incident response communication
- Be prepared to respond to requests for field investigations of reported incidents
- Not speak on behalf of the water supplier unless designated as the system’s spokesperson

The primary spokesperson will be responsible for speaking on behalf of the water system to local agencies, the public, and the news media. The spokesperson should work with the management staff and the team to ensure that all communication is clear, accurate, timely, and consistent. The spokesperson may authorize and/or direct others to issue news releases or other information that has been approved by the system’s management staff. The spokesperson is expected to be on call immediately when an incident or event which may threaten water quality occurs. The spokesperson will perform the following tasks in the event of a spill, release, or other event that threatens water quality:

- Announce which risk level (A, B, C, D, or E) will apply to the public notifications that are issued
- Issue news releases, updates, and other information regarding the incident/event
- Use the news media, email, social media, and other appropriate information venues
- Ensure that news releases are sent to local health agencies and the public
- Respond to questions from the news media and others regarding the incident/event
- Appear at news conferences and interviews to explain incident response, etc.

INCIDENT / EVENT COMMUNICATION PROCEDURE

The flow chart in this section illustrates how the water system will respond when it receives a report that a spill, release, or other contamination event may have occurred. Key elements of the flow chart are described below.

Communication with agencies, the public, and the media during threat incidents

Upon initial notification of the incident/event, system managers and staff will collect information and verify the need for further investigation. Only properly trained personnel will perform onsite investigations if permitted by emergency responders. If further investigation is warranted, and the initial facts support it, the water system spokesperson will issue a public communication statement consistent with the threat level. In addition, water system personnel and partners will be dispatched to conduct reconnaissance, a threat assessment, and a threat characterization, if present. This work may include:

- Verification of the incident/event type (spill, release, etc.)
- Location of incident/event
- Type of material(s) involved in spill, release, etc.
- Quantity of material involved
- Potential of the material to move, migrate, or be transported
- Relevant time factor(s) in the risk assessment (e.g., downstream movement rate)
- Overall level of risk to water system, whether low, moderate, high, or very high
- Development of the initial risk characterization

As the flow chart indicates, several iterative cycles will occur after the initial threat assessment, including communication with local agencies and the public, further investigation of the incident, possible implementation of

the water system's contingency plan, and eventual elimination of the threat and a return to normal operations. Communication activities during this period will include:

- The initial release (i.e., Announcement, Boil Water Advisory, Cannot Drink, Do Not Use, or Emergency)
  - Sent to local health agencies, the public, and the news media within 30 minutes
- Notification of the local water system's source water protection and communication teams
  - If warranted by initial findings regarding the spill, release, or incident
- Notification of the WV Bureau of Public Health
  - As required
- Periodic information updates, as incident response information is received
- Updates to the applicable A-B-C-D-E advisory tier, as necessary

If time permits and the need arises, after the threat level is reduced, and operations return to normal, the water system staff, the communication and source water protection teams, and their partners may conduct a post-event review and assessment. The purpose of the review is to examine the response to the incident, relevant communication activities, and overall outcomes. Plans and procedures may be updated, altered, or adapted based on lessons learned through this process.

EMERGENCY SHORT FORMS

Emergency Communication Information

	Name	Phone	Email
Designated spokesperson:	Stephanie Reel	(304)728-2078	sreel@juiwater.net
Alternate spokesperson:	Jeff Pippel	(304)728-2077	jpippel@juiwater.net
Designated location to disseminate information to media:	270 Industrial Blvd. Kearneysville, WV 25430		
Method of Contact:	newspaper radio automated phone tree web site		

Media Contacts:	Name	Title	Phone Number	Email
	Robert Snyder	Editor - Publisher	(304)725-2046	editor@spiritofjefferson.com
Bill Kohler; The Herald Mail Co	Editor	(301)733-5131	billk@herald-mail.com	The Journal
	(304)263-8931		WRNR – Main Line	
(304)263-6586	info@talkradiowrnr.com	WLTF – Main Line		(304)263-8868
	WKMZ – Main Line		(304)263-8869	
WEPM 1340		(304)263-8868		WJLA Channel 7

Emergency Service Contacts

	Name	Emergency Phone	Alternative Phone	Email
Police	Jefferson County Sheriff	(304)728-3205	(304)728-3205	pdougherty@jcsdwv.com
Fire	Citizens Fire Company	(911)___-_____	(304)725-2814	
Ambulance	Citizens Fire Company	(911)___-_____	(304)725-2814	
Hazmat	Citizens Fire Company	(911)___-_____	(304)725-2814	
Other	WV State Police	(911)___-_____	(304)725-9779	
Other				
Other				

Sensitive Populations

Other Communities that are served by the Utility:	None			
Major User/Sensitive Population Notification	Name	Emergency Phone	Alternative Phone	Email
	Head Start RESA VIII Jefferson	(304)724-9942		
	Children First Child Development (Daycare)	(304)728-1100		
	T. A. Lowrey Elementary School	(304)728-7250		
	Jefferson High School	(304)725-8491		
	Wildwoods Middle School	(304)728-1988		
EED District Office Contact	Name	Phone	Email	
	Alan Marchun	(304)725-9453	alan.f.marchun@wv.gov	
OEHS Readiness Coordinator	Lee Orr	(304)356-4290		

Downstream Water System Contacts	Water System Name	Contact Name	Emergency Phone	Alternate Phone	Email
	None				

Are you planning on implementing the TIER Communications plan?:	Yes

Emergency Service Key Staff Members

	Name	Title	Phone	Email
Key Staff Responsible for Coordinating Emergency Response Procedures:				
CONFIDENTIAL				
Staff Responsible for Keeping Confidential PSSC Information and Releasing to Emergency Responders.				
CONFIDENTIAL				

Emergency Response Information

List Laboratories available to perform sample analysis in case of emergency.	Name	Phone
	CONFIDENTIAL	
Has utility developed a detailed Emergency Response Plan in accordance with the Public Health Security Bioterrorism preparedness and Response Plan Act of 2002 that covers the following areas?:		Yes
When was the emergency response plan developed or last updated?:		2021

EMERGENCY CONTACT INFORMATION

State Emergency Spill Notification

1-800-642-3074

Office of Emergency Services

http://www.wvdhsem.gov/

Charleston, WV- (304) 558-5380

WV Bureau for Public Health Office of Environmental Health Services (OEHS)

www.wvdhhr.org/oehs

Readiness Coordinator - Lee Orr

Phone: 304-356-4290

Cell: 304-550-5607

E-mail: Lee.E.Orr@wv.gov

Environmental Engineering Division Staff

Charleston, Central Office (304) 558-2981

Beckley, District 1 (304) 256-6666

St. Albans, District 2 (304) 722-0611

Kearneysville, District 4 (304) 725-9453

Wheeling, District 5 (304) 238-1145

Fairmont, District 6 (304) 368-2530

National Response Center - Chemical, Oil, & Chemical/Biological Terrorism

1-800-424-8802

WV State Fire Marshal's Office

1-800-233-3473

West Virginia State Police

1-304-746-2100

WV Watch – Report Suspicious Activity

1-866-989-2824

DEP Distance Calculator

http://tagis.dep.wv.gov/pswicheck/

PRESS RELEASE ATTACHMENTS

TIERS Levels A, B, C, D, and E

UTILITY ISSUED NOTICE – LEVEL A

PUBLIC WATER SYSTEM ANNOUNCEMENT

A WATER SYSTEM INVESTIGATION IS UNDERWAY

On_____at___:____AM/PM, the_____Water System began investigating an incident that may affect local water quality.

The incident involves the following situation at this location:

_____

_____

_____

There are no restrictions on water use at this time. As always, if water system customers notice anything unusual about their water – such as abnormal odors, colors, sheen, etc. – they should contact the water system at _____.

At this time there is no need for concern if you have consumed or used the water.

Regular updates will be provided about this Announcement as water system staff continue their investigation. Again, there are no restrictions on water use at this time.

State Water System ID#_____Date Distributed: _____

UTILITY ISSUED NOTICE – LEVEL B

BOIL WATER ADVISORY

A BOIL WATER ADVISORY IS IN EFFECT

On_____at___:____am/pm, a water problem occurred causing contamination of your water. The areas that are affected are as follows:

□ Entire Water System or □ Other: _____

_____

CONDITIONS INDICATE THERE IS A HIGH PROBABILITY THAT YOUR WATER IS CONTAMINATED. TESTING HAS NOT OCCURRED TO CONFIRM OR DENY THE PRESENCE OF CONTAMINATION IN YOUR WATER.

What should I do?

- **DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST.** Bring all water to a boil, let it boil for one minute, and let it cool before using, or use bottled water. Boiled or bottled water should be used for drinking, making ice, brushing teeth, washing dishes, bathing, and food preparation until further notice. Boiling kills bacteria and other organisms in the water.

What happened?

- **The problem is related to** _____

What is being done?

- **The water system is taking the following action:** _____

  _____

What should a customer do if they have consumed or used the water?

- _____

We will inform you when you no longer need to boil your water. We anticipate resolving the problem within _____hours/days. For more information, please contact_____at_____or _____at_____.

General guidelines on ways to lessen the health risk are available from the EPA Safe Drinking Water Hotline at 1 (800) 426-4791.

Please share this information others who use this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice was distributed by _____

State Water System ID#_____Date Distributed: _____

UTILITY ISSUED NOTICE – LEVEL C

"CANNOT DRINK" WATER NOTIFICATION

A LEVEL C WATER ADVISORY IS IN EFFECT

On_____at____:____am/pm, a water problem occurred causing contamination of your water. The areas that are affected are as follows:

□ Entire Water System or □ Other: _____

_____

CONDITIONS INDICATE THERE IS A HIGH PROBABILITY THAT YOUR WATER IS CONTAMINATED. TESTING HAS NOT OCCURRED TO CONFIRM OR DENY THE PRESENCE OF CONTAMINATION IN YOUR WATER.

What should I do?

- **DO NOT DRINK THE WATER.** You can't drink the water, but you can use it for showering, bathing, toilet-flushing, and other non-potable purposes.
- **BOILING WILL NOT PURIFY THE WATER.** Do not drink the water, even if it is boiled.

What happened?

- **The problem is related to** _____

What is being done?

- **The water system is taking the following action:** _____

  _____

What should a customer do if they have consumed or used the water?

- _____

We will inform you when the water is safe to drink. We anticipate resolving the problem within _____ hours/days. For more information – or to report unusual water conditions such as abnormal odors, colors, sheen, etc. – please contact_____at_____or_____at_____.

General guidelines on ways to lessen the health risk are available from the EPA Safe Drinking Water Hotline at 1 (800) 426-4791.

Please share this information others who use this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice was distributed by _____

State Water System ID#_____Date Distributed: _____

UTILITY ISSUED NOTICE – LEVEL D

"DO NOT USE" WATER NOTIFICATION

A LEVEL D WATER ADVISORY IS IN EFFECT

On_____at____:____am/pm, a water problem occurred causing contamination of your water. The areas that are affected are as follows:

□ Entire Water System or □ Other: _____

_____

CONDITIONS INDICATE THERE IS A HIGH PROBABILITY THAT YOUR WATER IS CONTAMINATED. TESTING HAS NOT OCCURRED TO CONFIRM OR DENY THE PRESENCE OF CONTAMINATION IN YOUR WATER.

What should I do?

- **DO NOT DRINK THE WATER.** The water is contaminated.
- **DO NOT SHOWER OR BATHE IN THE WATER.** You can't use the water for drinking, showering, or bathing. It can be used for toilet flushing and firefighting.
- **BOILING WILL NOT PURIFY THE WATER.** Do not use the water, even if it is boiled. The type of contamination suspected is not removed by boiling.

What happened?

- **The problem is related to** _____

What is being done?

- **The water system is taking the following action:** _____

  _____

What should a customer do if they have consumed or used the water?

- _____

We will inform you when the water is safe to drink. We anticipate resolving the problem within _____ hours/days. For more information – or to report unusual water conditions such as abnormal odors, colors, sheen, etc. – please contact_____at_____or_____at_____.

Please share this information others who use this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice was distributed by _____

State Water System ID#_____Date Distributed: _____

UTILITY ISSUED NOTICE – LEVEL E

EMERGENCY WATER NOTIFICATION

A LEVEL E WATER ADVISORY IS IN EFFECT

On_____at___:____am/pm, a water problem occurred causing contamination of your water. The areas that are affected are as follows:

□ Entire Water System or □ Other: _____

_____

CONDITIONS INDICATE THERE IS A HIGH PROBABILITY THAT YOUR WATER IS CONTAMINATED. TESTING HAS NOT OCCURRED TO CONFIRM OR DENY THE PRESENCE OF CONTAMINATION IN YOUR WATER.

What should I do?

- **DO NOT DRINK THE WATER.** The water is contaminated.
- **DO NOT USE THE WATER FOR ANY PURPOSE!** You can't use the water for drinking, showering, or bathing, or any other use – not even for toilet flushing.
- **BOILING WILL NOT PURIFY THE WATER.** Do not use the water, even if it is boiled. The type of contamination suspected is not removed by boiling.

What happened?

- **The problem is related to** _____

What is being done?

- **The water system is taking the following action:** _____

  _____

What should a customer do if they have consumed or used the water?

- _____

We will inform you when the water is safe to drink. We anticipate resolving the problem within _____ hours/days. For more information – or to report unusual water conditions such as abnormal odors, olors, sheen, etc. – please contact_____at_____or_____at_____.

Please share this information others who use this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice was distributed by _____

State Water System ID#_____Date Distributed: _____

APPENDIX D. SINGLE SOURCE FEASIBILITY

Water Source Alternative:

Did not complete the alternative source study	
Name of Alternative:	Multiple Source System
Brief Description of the Alternative:	Multiple Source System
Feasible?:	Yes
Provide Cost Estimate:	$0
Would this alternative supply 100% of your needs?:	Yes
Economic Criteria - Operation and Maintenance Costs:	0
Economic Criteria - Capital Cost:	0
Technical Criteria - Permitting:	0
Technical Criteria - Flexibility:	0
Technical Criteria - Resilience:	0
Technical Criteria - Institutional Requirements:	0
Environmental Criteria - Environmental Impacts:	0
Environmental Criteria - Aesthetic Impacts:	0
Environmental Criteria - Stakeholder Issues:	0
Final Score:	0.00%

Feasibility Study Narrative

Appendix E. Feasibility Study Narrative

A feasibility study matrix was deemed unnecessary for the JUI Walnut Grove WTP. This WTP can receive water from two other interconnected water treatment plants, which include the Briar Run (TP2) and Meadowbrook (TP3) treatment plants. If Walnut Grove's (TP1) groundwater sources at the Walnut Grove WTP was to go out of service as a result of a contamination event or other emergency, TP2 andTP3 have the capacity to fully supply the Walnut Grove WTP. Additionally, TP1 and TP3 have acombined treated water storage capacity of 60,000 gallons in a contact tank and a clearwell. The BriarRun treatment plant (TP2) is a standalone plant with a 510,000 gallon chlorine-contact standpipe fortreated water storage.

Matrix Document

Appendix E. Feasibility Study Narrative

A feasibility study matrix was deemed unnecessary for the JUI Walnut Grove WTP. This WTP can receive water from two other interconnected water treatment plants, which include the Briar Run (TP2) and Meadowbrook (TP3) treatment plants. If Walnut Grove's (TP1) groundwater sources at the Walnut Grove WTP was to go out of service as a result of a contamination event or other emergency, TP2 andTP3 have the capacity to fully supply the Walnut Grove WTP. Additionally, TP1 and TP3 have acombined treated water storage capacity of 60,000 gallons in a contact tank and a clearwell. The BriarRun treatment plant (TP2) is a standalone plant with a 510,000 gallon chlorine-contact standpipe fortreated water storage.

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APPENDIX E. SUPPORTING DOCUMENTATION