Village of Allegany
Drinking Water Source Protection Program (DWSP2) Plan

System Name: Village of Allegany
PWS Number: NY0400330

Location:
Village of Allegany
Cattaraugus County
New York

LaBella Project No. 2223129.04
OGS Contract DOSD429/SD936

March 2023

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LIST OF ACRONYMS

AOD	Aquifer Overlay District
CCSWD	Cattaraugus County Soil and Water Conservation District
CEA	Critical Environmental Area
DPW	Department of Public Works
DWSP2	Drinking Water Source Protection Program
GIS	Geographic Information Systems
GPD	Gallons Per Day
GPM	Gallons Per Minute
EIA	Energy Information Administration
EPA	Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
MCL	Maximum Contaminant Level
MGD	Million Gallons Per Day
MTBE	Methyl tert-Butyl Ether
NHD	National Hydrology Dataset
NLCD	National Land Cover Data
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOS	New York State Department of State
NYSDOT	New York State Department of Transportation
PFAS	Per- and Polyfluoroalkyl Substances
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
PWS	Public Water System
RR	Railroad
SEQR	State Environmental Quality Review
STW	Southern Tier West
SVOC	Semi-Volatile Organic Compound
SWAP	Source Water Assessment Program
TOGS	Technical & Operational Guidance Series
TOT	Time of Travel
TRI	Toxic Release Inventory
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WhAEM	Wellhead Analytic Element Model
WNYP	Western New York & Pennsylvania Railroad

INTRODUCTION

In 2019, the Village of Allegany in Cattaraugus County, New York (the Village) applied for free technical assistance to prepare a Drinking Water Source Protection Program (DWSP2) to protect its local source water. A NYS technical services team ("consultant team") led by LaBella Associates, D.P.C. ("LaBella") was assigned to the Village and worked closely with Allegany to develop this DWSP2 plan. Amala Consulting worked with LaBella to provide GIS mapping analysis. The plan was developed using the New York State Department of Environmental Conservation (NYSDEC) and Health (NYSDOH) DWSP2 Framework to assist municipalities with assessing and supporting public drinking water source protection.

The Village owns and operates the public water system named *Village of Allegany, Public Water System (PWS) ID# NY0400330*. The water source type is groundwater, withdrawn from the Primary Aquifer identified as the Olean-Salamanca Aquifer. The Village draws groundwater from three wells situated in three separate locations, each between 50 and 91 feet deep. The Village's three wells provide groundwater requiring minimal corrective treatment. The Village simply disinfects the water as required by NYSDOH regulations and fluoridates the water as a community benefit.

The water system currently serves a population of approximately 4,725 customers, consisting of approximately 2,000 residents in the Village of Allegany and 2,725 in the adjoining Town of Allegany.

A detailed list of source water protection elements has been developed through this project, as documented here. A stakeholder group assembled by the Village of Allegany assembled this plan in partnership with representatives from Cattaraugus County Department of Health, the Town of Allegany Town Board and Planning Board, Cattaraugus County Planning and Economic Development, Cattaraugus County Soil and Water Conservation, Southern Tier West (STW) Regional Planning Board, and Western New York & Pennsylvania Railroad (WNYP). The data tables in Appendix 1 provide information on stakeholder input, potential contaminant sources analysis, previous studies and plans that the consultant team utilized in the development of this DWSP2, and the plan recommendations.

Implementation of this plan and periodic updating of this source document is expected to contribute significantly to the conservation of natural resources and preservation of public health. In addition, protection of the water source can create future benefits such as drinking water treatment savings costs, general liability insurance savings, maintenance of real estate values, and increased climate resilience.

1.0 STAKEHOLDER GROUP

1.1 Stakeholder Group

In 2021, the consultant team formed a stakeholder group of individuals from a variety of backgrounds who may have useful information or perspectives regarding intermunicipal source water protection. The group consists of individuals representing Village and Town of Allegany water operators and leadership, Cattaraugus County Department of Health, County and regional planners, Cattaraugus County Soil and Water Conservation, and adjacent property stakeholders. A list is provided in Table 1.1a, below. Tony Papasergi, the Village of Allegany Department of Public Works (DPW) Water Operator is the main point of contact for the stakeholder group (apapasergi@allegany.org). The stakeholder group conferred periodically with Village and Town Board leadership as plan details were developed.

Table 1.1a - Stakeholder Group

Name	Affiliation
Tony Papasergi	Village of Allegany, DPW Water Operator
Gregory Pearl	Village of Allegany, Mayor
Kimberly Roth	Village of Allegany, Treasurer
Greg Straub	Town of Allegany Head Water Operator
Crystal Abers	Cattaraugus County Planning and Economic Development
Megan Boberg	Cattaraugus County Soil and Water Conservation[1]
Tom Barnes	STW Regional Planning Board[2]
Angela Fowler	STW Regional Planning Board[3]
Eric Wohlers	Cattaraugus County Environmental Health Director
Robert Ring	Cattaraugus County Environmental Health Director
Tim Zerfas	Cattaraugus County Water Resource Specialist
Peter Hellier	Town of Allegany Planning Board
Mike Higgins	Town of Allegany Supervisor
Kathy Martin	Town of Allegany Town Board
Craig Maguire	Town of Allegany Town Board
Kylie McLaughlin	General Manager, WNYP

Notes:
[1] Left Cattaraugus County Soil and Water Conservation in August 2022
[2] Retired from STW Regional Planning Board in August 2022
[3] Joined Stakeholder Group in August 2022

The stakeholder advisory group held a series of meetings in 2021 and 2022 beginning with a kickoff meeting to facilitate coordination between the participating parties, introduce the consultant team, review the objectives of the DWSP2, identify other interested parties to engage, and initiate a discussion to establish specific goals and a vision to guide the DWSP2. Table 1.1b in Appendix 1

contains a summary of all these meetings and the dates on which they occurred.

1.2 Vision and Goals

The stakeholder group met to formulate a project vision and supportive goals. The stakeholder group developed the vision below:

The Village of Allegany is committed to educating and coordinating with its water system users and property owners within the source water area to ensure that its water quality will remain high quality and be managed cost effectively now and for years to come.

The stakeholder group then created a focused series of goals consistent with the vision and advancing critical protection elements (Table 1.2a). Goals are understood to be either discrete objectives that indicate how the Vision Statement is to be achieved, or nuanced elements of the Vision statement itself.

Table 1.2a - Village of Allegany DWSP2 Goals

1	Educate local leaders on source water protection. Many participants in previous water quality source protection efforts are no longer involved; therefore, a need to educate those on Village and Town boards regarding the adoption of land use regulations and other strategies exists.
2	Educate residents in vulnerable areas as to the importance of this effort and the location of their drinking water under their homes and places of work.
3	Communicate and coordinate regularly with major stakeholders and property owners such as the WNYP, St. Bonaventure University, and others.
4	Determine proper land use regulations that are within the Village's jurisdiction. Reexamine the proposed aquifer overlay district that the Town of Allegany and Village of Allegany have considered previously.
5	Develop a variety of risk mitigation strategies.
6	Build in resiliency to manage future potential contaminant sources to maintain the Village's water quality.

2.0 DRINKING WATER SOURCE ASSESSMENT

2.1 Overview of the Water System

A general water system overview has been prepared to assist with development of this plan. Table 2.1 in Appendix 1 contains a summary of the basic information used for this.

2.1.1 Source Area Mapping

Allegany's primary water source type is groundwater withdrawn from the Olean-Salamanca Area Primary Aquifer located in southeastern Cattaraugus County. Primary Aquifers are defined in the Division of Water Technical & Operational Guidance Series (TOGS) 2.1.3 as "highly productive aquifers presently utilized as sources of water supply by major municipal water supply systems." The hydrogeology of this aquifer is summarized by the United States Geological Survey (USGS) within the Water-Resources Investigations Report 85-4157. This valley-fill aquifer system underlies the entire Allegheny River, Olean Creek, Fivemile Creek, and Haskell Creek valleys and occupies parts of their tributary valleys.

Between 2009 and 2012, the Village of Allegany worked closely with the Cattaraugus County Health Department to identify their Source Water Assessment Program maps using the United States Environmental Protection Agency's (EPA's) Wellhead Analytic Element Model (WhAEM) wellhead protection software. Discrete recharge areas for each well and associated estimated one-year Time of Travel (TOT) zones were mapped, extending northward from each well under the valley aquifer toward a small west-flowing tributary to the Fivemile Creek. This approximate boundary also identified the hydrogeologic transition from the valley bottom to the rising valley wall supported by fractured bedrock. This area was recognized as a more distant or secondary recharge area. Secondary recharge areas supplement the one-year TOT areas.

For this DWSP2, the one-year TOT zones mapped previously were recognized as Critical Source Areas within which a contaminant occurrence would need urgent remediation to ensure continued safe well operations. The balance of the contributing recharge area was recognized as the Extended Source Area, for which protective land uses are important but groundwater travel distances and dilution allow some mitigation of potential groundwater quality threats.

The Critical and Extended Source Area delineations previously mapped for each well were widened northward as part of this DWSP2 to recognize an absence of field verified water table contours or modeling precision, and to acknowledge the likelihood that seasonal water table variability may lead to some variation in groundwater flow migration toward the wells. Widening of the delineated recharge area is consistent with New Jersey USGS wellhead protection modelling guidance. The resulting full-size maps showing the Critical Source Area and the Extended Source Area, endorsed by the stakeholder group, are shown in Appendix 2. The wellfield Critical Source Area is located both within the Village of Allegany and the Town of Allegany. The Extended Source Area lies primarily in the Town of Allegany with a small headwater area extending into the Town of Olean. All maps for this DWSP2 plan were created using ArcGIS.

2.1.2 *Water System History*

The Water Supply Application No. 5697 from the Village of Allegany to the NYSDEC Water Resource Commission provides a history of the Village's water system. In 1908, the system operators drilled two wells to furnish a supply of water for the Village. The original wells are no longer in service, with the second of the original wells failing in 1968. A third well was drilled in 1956 and put it in operation with a rated capacity of 450 Gallons per Minute (GPM), falling to 225 GPM in 1968. In 1969, the Village applied to the NYSDEC Water Resources Commission for approval to develop additional water supply wells. This project consisted of the rehabilitation of the existing 1956 well, development of two new water well sources, construction of water lines from the new wells to the existing water lines, and construction of a new water storage tank. The goal of the 1969 water system project was to increase transmission and storage by 230 percent with a requirement for 1,050 GPM, or 1.5 Million Gallons per Day (MGD). No water withdrawal permit with an expiration date has been located.

Today, the Village continues to draw water from three active municipal wells. They are located near the center of the linear valley filled with glacial outwash/lacustrine sediments, generally parallel to the Allegheny River and more than 1,000 feet from the riverbank. Total saturated thickness of the aquifer reportedly varies between 60 and 80 feet near the wells and thins to the valley walls. At the well sites, available well logs suggest the valley fill sediments are fine-grained at grade and coarsen at depth. Cattaraugus County provided well logs from 1969 to the present. Information obtained from the logs is summarized in Table 2.1a.

Table 2.1a - Allegany Well Characteristics

Well Number	Well Location	Characteristics
Well 1 Fire Hall Well	100' Southeast of Corner Fire Station Tax ID: 93.043-2-28.2	Date of Drill: 1969 Depth to Bottom: 50' 0-15' Brown sandy clay and gravel 15-41' Brown gravel and sand 41-43' Brown clay and gravel 43-49' Brown gravel and sand 49-50' Gray sandy clay and gravel Screen: Depth 41-51', 10' of 18" Diameter x 7-Gauge Layne 304 Stainless #6 Shutter Plug: ¾" Steel & 7-Gauge Stainless Steel Plates Welded Max Rate: 600 GPM
Well 2 7th Street Well	200' East of Village Barn Tax ID: 93.060-1-2.3	Date of Drill: 1969 Depth to Bottom: 92' 0-1' Topsoil 1-12' Brown sandy clay, some gravel 12-32' Medium to small gravel and sand 32-36' Yellow clay small gravel mix 36-61' Small gravel and sand 61-90' Medium to small gravel and coarse sand 92' Gray clay Screen: Depth 81-91', 10' of 18" Diameter x 7Gauge Layne Stainless Steel #5 Shutter Plug: ¾" Steel & 7-Gauge Stainless Steel Plates Welded Max Rate: 600 GPM
Well 3 Union Street Well	Adjacent to railroad and Edge College Property Tax ID: 93.051-1-1	Date of Drill: 1956, refurbished in 1969 Depth to Bottom: 91' Max Rate: 650 GPM

2.1.3 Water System Existing Conditions

The Village's current three wells provide groundwater requiring no corrective treatment beyond mandatory disinfection. The water is fluoridated as a public benefit. The source water is drawn from the wells and pumped into a one-million-gallon storage tank located on a 1.42-acre parcel (Tax Parcel ID: 93.002-2-29.2) between Buffalo Road and Keim Hollow Road.

The water system currently serves a population of 4,725, including approximately 2,000 Village of Allegany residents and an additional 2,725 residents in the Town of Allegany. The Town of Allegany purchases water from the Village and distributes it through four water districts, as indicated in Table 2.1b.

Table 2.1b - Public Water Supply Service

PWS ID	Water System Name	Population Served
NY0400330	Allegany Village	2,000
NY0400331	Allegany Town Consolidated District #1	480
NY0430102	Allegany Town Comprehensive Water District	274
NY0430040	Allegany Town District #3 (North Area)	121
NY0430041	Allegany Town District #8 (St. Bonas)	1850
TOTAL		**4,725**

2.1.4 *Water Quality Summary*

There is no recent history of water quality standard violations in the three wells. For this report, the consultant team also reviewed the annual water system reports for the five water districts that utilize the Village of Allegany source water and did not identify any violations of any Maximum Contaminant Levels (MCL).

In December 2002, testing detected Methyl tert-Butyl Ether (MTBE; a gasoline additive) in Village Well Number 1. The Cattaraugus County Health Department instructed the Village to stop using the well. It has since been returned to service. The following notes summary remedial work conducted:

- Source: ExxonMobil
- Installed and sampled monitoring wells
- Examined records to identify possible sources of contamination
- Excavated and disposed of 558 tons of contaminated soil from former gas station property
- Installed and operating soil vapor extraction and air sparging remedial system to remove volatile gasoline compounds from subsurface soils and groundwater
- Conducted a Chemical Oxidation Feasibility Study to determine the effectiveness of this technology to remove any remaining gasoline compounds from the subsurface.
- As a result of cleanup activities, Well Number 1 was placed back in service.

2.1.5 *Water Quantity Summary*

The Village is required to submit annual Water Withdrawal Reports to the NYSDEC Division of Water. Table 2.1c (below) summarizes recent water withdrawal reports. The system source capacity is the sum of the reliable production capability from each source, excluding emergency sources. Since each of the Village's wells can produce up to 600 GPM, any two wells are able to satisfy the Village's maximum daily demand. This is an important asset for the Village, offering it the opportunity to service or otherwise address the operational needs of any well on rotation while still ensuring capacity to meet maximum daily demand with the other two wells.

Table 2.1c - Water Withdrawal Reporting

Year	Average Day Withdrawal Gallons per Day (GPD)	Maximum Day Withdrawal (MGD)	Permitted Withdrawal or System Capacity (MGD)
2018	760,261	1.22	2.61
2019	770,089	1.27	2.61
2020	724,625	1.04	2.61

2.2 Wellfield Ownership and Control Areas

The Village of Allegany has ownership and control of 0.19 acres around Well 1, 1.43 acres at Well 2, and no land at Well 3. A map of the ownership and control area is provided as Map #2 in Appendix 2. The ownership and control areas around wells 1 and 3 do not meet current well siting requirements, which specify that "Wells serving public water systems shall be located such that the owner of the water system possesses legal title to lands within 100' of the well and the owner controls by ownership, lease, easement or other legally enforceable arrangement the land use activities within 200' of the well." (Drinking Water Regulations, Part 5, Subpart 5-1). As wells already in service, the DWSP2 stakeholder group spent considerable time considering protection options to mitigate this condition. The tax parcel identification and size of lot for each of the water system components is listed in Table 2.2a.

Table 2.2a - Water System Component Location and Ownership

Water System Component	Adjacent Property Village Control	Ownership Area
Well 1 Fire Hall Well	Tax ID: 93.043-2-28.2	0.19 acres
Well 2 7th Street Well	Tax ID: 93.060-1-2.3 Tax ID: 93.060-1-2.2 Tax ID: 93.060-1-2.7	0.51 acres 0.37 acres 0.55 acres
Well 3 Union Street Well	None	None

2.3 Inventory of Potential Contaminant Sources

In 2003, the NYSDOH completed a source water assessment program (SWAP) for the Village's water system to evaluate potential contaminant sources. "The source water assessment has rated the combined susceptibility to contamination for these wells as; very high from enteric bacteria, enteric viruses and nitrates; high from cations/anions (salts, sulfate), halogenated solvents, metals, other industrial organics, petroleum products and protozoa; and medium-high from herbicides/pesticides. These ratings for the wells are due to their proximity to oil and gas wells, sand and gravel mines, pasture lands and permitted discharge facilities (industrial/ commercial facilities that discharge wastewater into the environment and are regulated by the state and/or federal government)." The

comments were considered by the DWSP2 stakeholder group when assessing potential contaminant sources and during protection plan development.

As part of this DWSP2, the stakeholder group reviewed available mapping and conferred together to describe existing potential threats to well water quality. Appendix 2 provides a full-size map showing mapped potential contaminant sources available from various data sets (Map #3). The maps show various features including:

- Approximate well locations
- The Critical Source Area as defined by widened one-year TOT zones
- The Extended Source Area
- Ownership and Control Area
- The estimated locations identified by a wide range of NYSDEC and other Geographic Information Systems (GIS) -based data sets for a wide range of potential point sources of groundwater contamination. It is important to recognize that these are not source of contamination per se, but rather represent areas with potential groundwater risk based on the histories of groundwater contaminants associated with land uses of these types. Their mapped presence in the Village Critical and Extended Source Areas provided the DWSP2 consultant team with guidance on categories of land uses warranting plan attention. The available point source potential contaminant sources:
    - Petroleum Bulk Storage Tanks
        - Note: Regarding the Underground Oil/Gas Tank shown north of Well 2, review of the record shows that in the past there were three underground and one above ground petroleum bulk storage tanks. All have been Closed-Removed. In addition, the tanks located north and west (KwikFill) have also been Closed-Removed
    - NYSDEC Spills Incidents (closed and open)
    - Mined Lands
    - Toxic Release Inventory (locations required to file annual emission data)
    - NYSDEC Remediation Site Borders
    - Major Natural Gas Pipelines

In addition to the database search for potential sources of contamination, the consultant team solicited local knowledge from the stakeholder group.

In Appendix 1, Table 2.3 provides a summary of the inventory and summary of potential contaminant sources which the stakeholder group then used when developing their DWSP2 plan. Broadly summarized, the Village of Allegany's potential sources include: a regional history of petroleum spills of various sizes; underground petroleum storage tanks, including a gas station near Well 1; railroad proximity to Wells 2 and 3; septic systems in the watershed recognized to discharge nutrients; pathogens and trace personal care chemicals to groundwater; road de-icing concerns where salt from Village, Town, County, and Interstate may enter aquifers; Village DPW facilities abutting Well 2; agricultural nutrients and fertilizers; regulated gas wells; unresolved future land use plans for a former sand and gravel mine; a cemetery; and a golf course.

3.0 PROTECTION AND IMPLEMENTATION STRATEGIES

3.1 Recommended Protection and Management Methods

The stakeholder group discussed in detail the potential contaminant sources represented on Map #3 in Appendix 2 , summarized in Section 2.3, and listed in Table 2.3 of Appendix 1.

In review of these potential contaminant sources, the stakeholder group discussed the level of risk or priority believed appropriate relative to each potential contaminant source category and developed specific protection and management recommendations for each. The risk ranking was the considered opinion of the local experts in the stakeholder group. A low-risk rank was given to potential contaminant sources that have not been observed as widely distributed in the watershed, whereas a moderate rank was given to those that are more widespread. As an example of how a risk rank was assessed, take the topic of road salt application. It is categorized as a moderate risk even though the sodium levels in the water are not currently above what is recommended. The moderate rank is due to the near ubiquitous use of road salt and the fact that salt accumulation (as sodium and chloride) in water cannot be filtered out, as no filtration system currently exists for it. High levels of sodium in drinking water can be a health concern for people with health conditions requiring low sodium diets.

The stakeholder group concluded that there were no immediate "high risk" potential contaminant sources to the Village wells, and that potential contaminant sources were either moderate or low, and so could be managed accordingly.

To prioritize protection and management methods, the stakeholder group also consider ease of implementing the measure. To determine east of implementation, the stakeholder group considered factors such as cost and required coordination. Measures that are relatively easy to implement require a small budget and only one group is involved, while others are highly complex or costly to advance, requiring more study, grants, or landowner cooperation, or many groups/agencies are involved. Table 3.1/3.2 in Appendix 1 includes a column titled "Ease to Implement," where each strategy was ranked as easy, moderate, or complex based on the above considerations.

The stakeholder group also recognized that certain planning protection measures, such as zoning, only manage future land use threats, while others, such as local education and policy recommendations, are better suited to managing existing, ongoing potential contaminant sources.

Given the moderate to low levels of potential contaminant sources that the stakeholder group believed most of the potential contaminants posed, this DWSP2 effort focuses heavily on educating the public and local officials about the proximity of the local drinking water source to the Village and maintaining or building on existing strategies.

The methods align with project goals and fall broadly under the categories outlined below. Table 3.1/3.2 in Appendix 1 lists all DWSP2 planning protection recommendations developed by the

stakeholder group. Discussion of certain elements, for clarification and expanded consideration, follows.

3.1.1 *Education*

The stakeholder group identified education within the Village and Town of Allegany as a method to increase awareness about the Village's Critical and Extended Source Areas, and their proximity to the residential, commercial, and other areas of Allegany. Public awareness leading to source water protection could include education for property owners within the Critical and Extended Source Areas (protection methods 7 and 8b) and education of employees performing tasks such as road de-icing that can impact the source water, including the installation of educational signs (protection method 2a).

EPA, NYSDEC, and other agencies focused on source water protection have developed materials for public education. Providing information about source water protection in and around the Critical Source Area (particularly for those who live over it), sending out information in water bills, and holding public meetings to share the findings of the development of the DWSP2 and provide information on how to protect the water source is an important next step.

An increase in public awareness will support efforts to maintain clean water and help prevent the contamination of source water in Critical Source Areas. Signage along roadways to indicate when entering one of these areas is one way to do this, as are inserts about DWSP2 and water quality generally in quarterly water bills. Signage alerting the public in the Critical and Extended Source Areas is a common practice to alert the public of a protected area, and a method that the Village and Town should consider. Select signs could include the NYSDEC spill hotline phone number.

Figure 1: Examples of Water Supply Protection Area Signs

3.1.2 *Municipal Road De-icing Policy*

Individuals providing municipal services, such as operation and maintenance of the water sources, activities conducted at the municipal garage area near Well 2, and those applying salt to roadways in and around Allegany should receive continuous training on source water protection practices. The

stakeholder group recognizes that safe winter roads are a priority, but recommends refining best practices so necessary but not excessive road salt is applied within the Critical Source Area. Efforts and practices should be developed to minimize rock salt remaining on road margins beyond the duration of the snow season since such salt simply dissolves into the environment without providing de-icing benefits. Use of brine rather than spreading of rock salt (protection method 2c) is understood to de-ice roads more precisely, using less salt and leaving far less of a post-winter salt residue.

The Village and Town should post a de-icing road management policy to provide a common understanding about how these practices can be managed to minimize impacts to source water. A longer-range goal of converting road salting fleets from rock salt spreading to brining is something that the Village, Town, and its partners at the County and State level will be asked to consider.

The Town of Allegany is beginning a Comprehensive Plan process, and while such plans usually concentrate on practices to implement through zoning revisions, the stakeholder group felt the Town of Allegany's Comprehensive Plan revision could also include conversion to the Town's de-icing program to brine as an action item in its implementation plan.

An additional long-term road salt planning initiative would be revised curb and roadside drainage practices to minimize groundwater infiltration of road runoff (protection method 2b). Stormwater detention and infiltration practices generally required and beneficial on a wide range of development sites should not be prioritized along roadsides within the Critical Source Area. When roads in the Critical Source Area are periodically reformatted for maintenance purposes, drainage routes should be modified to prioritize overland flow for road meltwater to areas outside the Critical Source Area.

3.1.3 Partner Communication

The DWSP2 process has had a positive outcome already in that it has brought together partners and facilitated introductions among various property owners in the Critical and Extended Source Areas who recognize the benefits of regular communication. The Village should have regular communication with WNYP Railroad, St. Bonaventure, and State agencies, among other interested parties (protection method 3b).

The WNYP is a potential source of contamination with a rail line running near Wells 2 and 3 in the Critical Source Area. During this planning process, the Village and WNYP officials discussed the possibility of regular communication to ensure that the two have each other's current contact information and are aware of activities that could impact each other. The Village should consider scheduling an annual meeting with the railroad that includes a visual inspection of the well and railroad conditions.

The St. Bonaventure University Golf Club is a nine-hole course located northeast of Well 3 in the Critical Source Area. Due to the course's proximity to the well and the fact that the golf course requires regular maintenance with chemicals that could impact the water supply, the Village should consider implementing regular (annual) written communication with the course superintendent

regarding course operations and maintenance, as well as any plans the university has for this and nearby land (protection method 5). North of the golf course are lands of the St. Bonaventure Cemetery. The Village should confer at least annually with cemetery management to review land care practices and burial practices which might change over time and may influence groundwater quality (protection method 6).

Finally, the NYSDEC requires spill response reporting to NYS Spill Hotline within two hours of discovery for spills petroleum spills (spills of fewer than five gallons, are contained and under the control of the spiller, have not and will not reach NYS water or land, and/or are cleaned up within two hours of discovery are exempt). Various NYS regulations require the reporting of releases of petroleum, chemicals, and materials that may cause environmental damage. In all cases, the responsible party or the property owner is required to report the discovery of a release. NYSDEC recommends that *anyone with knowledge, report the discovery of any contamination or a release to the NYS Spill Hotline (1-800-457-7362) as soon as possible.* The Village should review these regulatory programs regularly to help ensure that spills are addressed quickly and appropriately (protection method 1b).

In addition, on an annual basis all emergency response agencies should be reminded of the Critical and Extended Source Areas contributing to the three public water supply wells to better ensure rapid response and mitigation activities if spills or other ground-based chemical releases occur in proximity to the Village's wells (protection method 3a). In conjunction with this annual notification, the Plan Management Team should confer with Village, Town, and County agencies to ensure that Emergency Response Plans include focus on the Village water supply wells and their Critical and Extended Source Areas. As appropriate, the Emergency Plans should be amended to include responses suited to these (protection method 3c).

An Important communication partner needs to be NYSDOT since interstate 86 passes through the margins of the Critical Source Area. Topics for communication and discussion with NYSDOT should include road margin stormwater management to minimize salt runoff entering the west-flowing stream east of the Critical Source Area and accident notifications to the Village if chemical cargo accidents occur in the Critical Source Area.

Finally, a notification and awareness program is recommended to monitor the prevalence, activity levels, and regulatory status of oil and gas wells existing in the Extended Source Area (protection method 9). As appropriate, responsive to potential groundwater threats associated with the gas wells and gas conveyance lines, release response plans should be developed to ensure prompt resolution of any release.

3.1.4 Housekeeping / Land Use and Control Around Wells

The Village of Allegany owns only limited land around the municipal wells, particularly Wells 1 and 3. The Village should engage with landowners owning property around Well 1 to inform them of their proximity to the well and request their care of land condition nearest the well. In addition, a meeting

with the owners of the ambulance corps building to educate them about the DWSP2 and its goals may be beneficial (protection method 1c).

The Village maintains the area around Well 2, which contains some sheds and areas for light vehicle repair. Local officials should consider expanding ownership acreage around this well if it is feasible in the future and engaging in attentive housekeeping of any materials which could influence well water quality if released to the ground (protection method 4). Care related to material storage and yard activity around this well can be directly implemented by Village personnel.

The railroad passes near Wells 2 and 3. Meetings with the railroad have determined that current cargoes do not include fluids, which, if discharged, could contaminate groundwater. Continued dialog with the railroad, annually at a minimum, is recommended to confirm cargo contents and to review railroad operations related to train travel speeds, rail bed repair, and vegetation control along the rail bed (protection method 3d).

3.1.5 Land Use Regulation and Management

While both the Village and Town have considered Aquifer Overlay Districts (AOD) to protect the water sources through zoning, neither have adopted one. The stakeholder group agreed that both municipalities could benefit from the adoption of local ordinance aquifer protections (protection method 1a) that include elements such as those described in Table 3.1a.

Table 3.1a - Zoning Modification for AOD

Zoning Modification	General Description
Aquifer Overlay District (AOD)	The AOD could preserve and maintain the quality and quantity of water found in the aquifer, thereby protecting these principal water supply sources.
Findings and purpose	Identify that the Village water supply is at risk from certain land uses and determine that special protection in necessary to preserve and protect.
Effect of district	Within AOD, all the underlying land use district rules shall remain in effect. In case of a conflict, the more restrictive regulation shall apply.
Delineation	Identify zones.
General provisions	Manufacture, use, storage, or discharge of any products, materials, or by-products subject to these regulations, such as wastewater, solid waste, hazardous materials, or any pollutant, must conform to requirements.
Specific regulations by zone	Ownership and Control Area / Critical Source Area / Extended Source Area
Inspection and enforcement	Regular and thorough inspections of identified protection zones to ascertain compliance. Enforcement action.
Definitions	The Village would need to update definitions to reflect a current standard.

Russell (2004) states that "Overlay zones can be a highly effective tool in local efforts to protect water quality. Used in combination with other planning and zoning tools, overlay zones can preserve and maintain a natural resource that is vital to health, quality of life, and economic well-being."

Development of an AOD includes establishing boundaries, developing standards, and developing review procedures. An AOD could provide a means of reviewing, on a case-by-case basis, actions or uses within the Critical and Extended Source Areas to prohibit uses or activities that may not align with the DWSP2 goals.

Examples:

- Town of Philipstown or Town of Amenia aquifer ordinances.(Town of Philipstown, NY Overlay District Regulations Search: § 175-16 Aquifer Overlay District (AQO). (ecode360.com))
- 2004 Article Planning Commissioners Journal[1]
- Town of Big Flats, NY[2]
- Town of Beekman, NY[3]
- Town of Dover, NY[4]

The Village of Allegany has not recommended designating the Critical and Extended Source Areas as Critical Environmental Areas (CEA), believing that the recommended aquifer protection ordinance is more specific and provides more detailed and clear protection of the groundwater source.

Septic systems are also increasingly being recognized not only as points of nutrient distribution into shallow aquifers but also of trace concentrations of a wide range of household and personal care/medical residue releases. The Village and Town should model the potential influence of nutrient discharge potential from remaining land within the Critical and Extended Source Areas relative to septic density allowed under current building code and zoning, to estimate the potential threat to water quality, and to adjust allowed zoning densities or required municipal wastewater collection/treatment if influences may significantly modify existing well water quality (protection method 8a) and the Plan Management Team should remain alert to contaminant threat evaluations completed by academic or governmental agencies to determine when or how to respond to potential trace chemistry groundwater quality threats associated with domestic septic system waste discharges (protection method 8c).

3.1.6 Administrative Plan Elements

The Plan Management Team should periodically assess whether the DWSP2 plan warrants amendments or more substantive revisions (protection method 1d). The Plan Management Team should briefly review the plan annually, considering whether new sources, new potential contaminant sources, or new planning strategies should be addressed by the plan. Simple revisions can be managed as amendments. More significant changes may require revisitation of the DWSP2 planning process and updated plan approvals by NYSDEC and NYSDEC and the Village of Allegany.

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[1] overlay-zoning-to-protect-surface-water.pdf (verderiver.org)

[2] https://library.municode.com/ny/big_flats/codes/code_of_ordinances?nodeId=TIT17ZO_CH17.24OVDI_17.24.020AQPROVDIAP

[3] http://beekman-ny.elaws.us/code/coor_ptii_ch155_artiii_sec155-12

[4] https://ecode360.com/11750852

3.2 Implementation Timeline

The final column in Table 3.1/3.2 of Appendix 1 includes an approximate implementation schedule for when to begin work on each action element, assigning to Year 1 those actions that may be most urgent or may require less up-front investment of time or funding. Actions assigned to Years 2 and beyond are either less urgently needed or were recognized by the stakeholder group to require more budget or thought to implement.

Many of the actions on the implementation timeline should be refreshed annually, particularly those including coordination between local officials and project partners to ensure persisting potential contaminant source awareness or ongoing education practices.

3.3 Implementation Steps

The recommended implementation steps for each of the planning measures identified by the stakeholder group are sorted by protection category and method and are identified in Table 3.2a of Appendix 1.

4.0 PROGRESSION AND MAINTENANCE

4.1 Plan Management Team

The Plan Management Team is a designated group of local officials and other partners who will guide the DWSP2's implementation. The list of recommended Plan Management Team members was a topic of particular discussion by the stakeholder group, recognizing it should include a blend of practitioners and parties able to prioritize funding and schedules to ensure plan implementation.

The recommended Plan Management Team is listed in Table 4.1a, below. Each municipality or partner should establish a process by which they place rotating members on the team as time passes. The Chair and Vice Chair for the Plan Management Team will be Mr. Papasergi and Mr. Straub. The Plan Management Team Chair can be contacted at apapasergi@allegany.org.

Table 4.1a - Proposed Plan Management Team

Name	Title/Affiliation
Tony Papasergi **(Chair)**	Village of Allegany Water Operator
Greg Straub **(Vice Chair)**	Head Water Operator, Town of Allegany
Gregory Pearl	Mayor, Village of Allegany
Mike Higgins	Supervisor, Town of Allegany
Peter Hellier	Chair, Town of Allegany Planning Board
Tim Zerfas	Water Resource Specialist, Cattaraugus County
Kimberly Roth (Village Alternate)	Treasurer, Village of Allegany
Kathy Martin (Town Alternate)	Town of Allegany Planning Board

The Village of Allegany will place the DWSP2 plan on its website and incorporate the findings into any new land use regulations. The Town of Allegany is beginning a Comprehensive Plan process and would like to incorporate the findings into those plans and subsequent regulations, as well.

The Plan Management Team will use the scheduling tool in the Data Summary to track progress on plan elements and will use the update scheduler when the DWSP2 plan warrants meaningful amendment. This DWSP2 should be reviewed and updated, as needed, every five years or less.

5.0 REFERENCES

DeGaetano. *Division of Water Technical and Operational Guidance Series (2.1.3.) Primary and Principal Aquifer Determinations*. New York State Department of Environmental Conservation, 23 Oct. 1990, https://www.dec.ny.gov/docs/water_pdf/togs213.pdf.

Drew, Robert S. "Water Supply Application No. 5697." Received by Public Notice, 14 May 1969, Albany, New York.

"Fact Sheet Groundwater Cleanup & Monitoring Status Update, Village of Allegany." *Town Annual Water Quality Report 2005*, New York State Department of Environmental Conservation, May 2006, https://www.allegany.org/images/upload/2005_town_water_pdf.pdf.

"New York Codes, Rules and Regulations." *Title: Subpart 5-1 - Public Water Supplies | New York Codes, Rules and Regulations*, 26 Aug. 2020, https://regs.health.ny.gov/volume-title-10/content/subpart-5-1-public-water-supplies.

Recommended Standards for Water Works: Great Lakes - Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers Illinois Indiana Iowa Michigan Minnesota Missouri New York Ohio Ontario Pennsylvania Wisconsin. 2018 ed., Minnesota's Bookstore, 2018.

Russell, Joel S. "Overlay Zoning to Protect Surface Waters." *Planning Commissioners Journal*, vol. 54, 2004.

Water System Search Results, United States Environmental Protection Agency, Safe Drinking Water Information System, 3 Dec. 2021, https://sdwis.epa.gov/ords/sfdw_pub/f?p=108:103::::RP::

Zarriello, Phillip J, and Richard J Reynolds. USGS, Albany, NY, 1987, *Hydrogeology of the Olean Area, Cattaraugus County, New York Water Resources Investigations Report 85-4157*.

Village of Allegany
Drinking Water Source Protection Program (DWSP2) Plan
System Name: Village of Allegany
PWS Number: NY0400330

APPENDIX 1: Data Summary

DWSP2 Plan Checklist	
Component	**Status**
Phase 1. Stakeholder Group	**Complete**
1.1 Form a Stakeholder Group	Complete
1.2 Establish Goals and Formulate a Vision	Complete
Phase 2. Drinking Water Source Assessment	**Complete**
2.1 Develop an Overview of the Water System	Complete
2.2 Prepare a Drinking Water Source Protection Map	Complete
2.3 Create a Potential Contaminant Source Inventory	Complete
Phase 3. Protection and Implementation Strategies	**Complete**
3.1 Identify Protection and Management Methods	Complete
3.2 Develop an Implementation Timeline	Complete
Phase 4. Progression and Maintenance	**Complete**
4.1 Designate a Plan Management Team	Complete

Public Water Supply (PWS) Information		
PWS Name:	Village of Allegany	
PWS ID:	16-6002423	
Type of Sources identified in plan:	Groundwater	
Name(s) of sources being protected (if different than PWS Name):		

1.1b Stakeholder Group	
Date	**Topic(s) Covered**
6/24/21	Introduced water operators, Health Department employees, and consultants and discussed who to add to stakeholder advisory group and where to find information needed to begin the project. **Not a stakeholder group meeting**
9/8/21	Kickoff meeting with stakeholder group, DWSP2 overview, discussion of stakeholder group and recommendations, brainstormed vision and goals, and discussed water system overview.
10/21/21	Revised 1.2 Goals and Vision, discussed 2.1 Overview of Water System, 2.2 DWSP2 Map, and 2.3 PCS Inventory, and received stkaholder group feedback on progress.
1/13/22	Stakeholder group approved Data Summary, potential contaminant sources, and mapping. Introduced future planning tasks. Consultant team will review the draft zoning overlay amendment for discussion at the next meeting.
2/17/2022	Discussion of draft aquifer overlay district and other protection methods to potentially include in the program. Introduced discusion of Plan Management Team.
3/30/2022	Reviewed and discussed potential protection and implementation strategies; in particular, the zoning overlay and model zoning ordinance for aquifer protection. Briefly discussed implementation timeline and Plan Management Team.
5/3/2022	Discussed implementation strategies and edited the table for inclusion in draft report. Briefly discsussed Plan Management Team.
6/2/2022	Reviewed Draft Report and discussed Plan Management Team and timeframe.
8/4/2022	Reviewed final report draft, assigned leadership for Plan Management Team, and discussed mapping details.

2.1 Overview of the Water System

Water system name:	Village of Allegany		
NYS PWS ID:	NY0400330		
Type of water system (e.g. community, non-community, transient, non-transient):	Community		
Name of the community, or communities, served by the system:	Village of Allegany with service into the Town of Allegany and including St. Bonaventure University		
Population served by the system:	4,725 (2,000 in Village; 2,725 outside Village)		
# of service connections:	800 water connections in the Village and 227 outside the Village including the university		
Summary of wells, intakes, infiltration galleries, and/or springs including name, depth, screen length and pumping rates where applicable:	The Village has 3 wells: Well 1 "Fire Hall Well" at 50' depth, Well 2 "7th St.Well" at 90' depth, Well 3 "Union Street Well" at 91' depth		
General treatment information:	The Village's three wells provide groundwater requiring no corrective treatment. The sourcewater is flouridated and disinfected only, prior to distribution.		
Summary of hydrogeographic setting of drinking water sources including watershed information and/or type of aquifer and aquifer materials (this information may be gathered after delineating protection areas in section 2.2):	Three active municipal wells are located near the center of a linear valley filled with glacial outwash/lacustine sediments. The wells lie along the north Allegheny River bank. Total saturated thickness of the aquifer varies between 60 and 80 feet near the wells and thins to the valley walls. At the well sites the valley fill sediments are finegrained at grade and coarsen at depth.		
Water quality summary including any known ambient water quality information, finished water detections, and/or history of maximum contaminant level (MCL) violations*:	There is no history of recent water quality standard violations in the three wells.		
Water quantity summary:	Current Water Withdrawal Permit Expiration Date(s) - **No permit with an expiration date has been located.**		
	Total Permitted Water Withdrawal Capacity	2.61	MGD
	Average Daily Water Demand (= Yearly Usage / 365)	0.724	MGD
	Maximum Daily Water Demand (Unofficial 3-day average in peak month - e.g. July)	1.04	MGD
	Daily Water Losses (can be obtained from Water Conservation Program form)	0.239	MGD

*Refer to "Sources of Water Quality Information" in Drinking Water Source Assessment Resource Kit

2.2a DWSP2 Map		
Protection Areas	**Description**	**Delineation Method**
Ownership and Control Area (for groundwater) or Control and Monitoring Area (for surface water)	The Village of Allegany owns small parcels at their Well 1 and Well 2 locations. They do not own the land at Well 3. It appears all three wells were installed before New York State Department of Health's (NYSDOH's) requirement of 100-foot ownership and 200-foot control around public water system (PWS) wells.	Parcel boundaries
Critical Source Area	Between 2009 and 2012 the Village of Allegany worked closely with the Cattaraugus County Health Department to update their Source Water Assessment Program (SWAP) maps using the U.S. Environmental Protection Agency's (EPA's) Wellhead Analytic Element Model (WhAEM) wellhead protection software. The software was used to define recharge areas as well as the one-year time of travel (TOT) zone which extends under the full valley fill aquifer, to the hydrogeologic transition to valley wall fractured bedrock secondary recharge areas, so the one-year TOT zones are suitably considered to be the Critical Source Areas for these Source Water wells. In discussion the stakeholder group decided to widen the Critical Source Area pathways as they increase in distance from the three wells recognizing that mapping precision is less secure with distance; this modification widened the Critical Source Area to include an increasing share of the valley bottom north of the three wells.	Analytical element modeling (WhAEM and Groundwater Flow Analytic Element Model (GFLOW))
Extended Source Area	Surface topogaphic mapping completed delineation of the wellfield Source Water area consisting of valley-wall contributing areas flowing down into the valley bottom sediments. This recharge area extends northward to top of the contributing watershed, and includes surface topography draining to the Critical Source Area.	Hydrogeologic mapping

2.2b DWSP2 Map Data Sources		
Layer	**Date Created or Acquired**	**Description**
Bulk Storage Facilities - New York State (NYSDEC)	7/15/2021	Bulk Storage Facilities - New York State (NYSDEC) Obtained from NYS GIS Clearinghouse - NYSDEC - Bulk Storage Sites in New York State. Source: NYSDEC, 2010
Major Oil Storage Facilities	7/15/2021	Major Oil Storage Facilities Obtained from NYS GIS Clearinghouse - NYSDEC - Bulk Storage Sites in New York State. Source: NYS Department of Environmental Conservation, 2010
Petroleum Bulk Storage Facilities (i.e. gas stations)	7/15/2021	Petroleum Bulk Storage Facilities (i.e. gas stations) Obtained from NYS GIS Clearinghouse - NYDEC - Bulk Storage Sites in New York State. Source: NYSDEC, 2010
Active Landfills	7/22/2021	Active Landfills Obtained from ftp://ftp.dec.state.ny.us/dshm/SWMF/Information_Solid%20Waste%20Management%20Facility/Active%20%26%20Inactive%20Facility%20Lists/. Source: NYS Department of Environmental Conservation, 2010
Inactive Landfills (Title 12)	6/17/2021	Inactive Landfills (Title 12) Obtained from ftp://ftp.dec.state.ny.us/dshm/SWMF/Information_Solid%20Waste%20Management%20Facility/Active%20%26%20Inactive%20Facility%20Lists/. Source: NYS Department of Environmental Conservation
Land Application Sites	7/23/2021	Land Application Sites Obtained from ftp://ftp.dec.state.ny.us/dshm/SWMF/Information_Solid%20Waste%20Management%20Facility/Active%20%26%20Inactive%20Facility%20Lists/. Source: NYS Department of Environmental Conservation, 2010
Vehicle Dismantling Facilities (i.e. junk yards)	7/23/2021	Vehicle Dismantling Facilities (i.e. junk yards) Obtained from ftp://ftp.dec.state.ny.us/dshm/SWMF/Information_Solid%20Waste%20Management%20Facility/Active%20%26%20Inactive%20Facility%20Lists/. Source: NYS Department of Environmental Conservation, 2010
Environmental Remediation Site Boundaries	7/23/2021	Environmental Remediation Site Boundaries Obtained from http://gis.ny.gov/gisdata/inventories/details.cfm?DSID=1097. Source: NYSDEC, updated nightly. Downloaded 7/22/2021
Environmental Remediation Sites (Superfund Sites, Brownfield Sites, etc.)	7/23/2021	Environmental Remediation Sites (Superfund Sites, Brownfield Sites, etc.) Obtained from http://gis.ny.gov/gisdata/inventories/details.cfm?DSID=1097. Source: NYSDEC, 2010
Spill Incidents	7/23/2021	Spill Incidents Obtained from https://data.ny.gov/Energy-Environment/Spill-Incidents/u44d-k5fk. Source: NYSDEC, Division of Environmental Remediation, July 22, 2021
Oil, Gas, and Other Regulated Wells	7/22/2021	Oil, Gas, and Other Regulated Wells Obtained from https://www.dec.ny.gov/energy/1603.html. Source: NYSDEC. Files updated nightly. Downloaded 7/23/2021
Orphan Oil and Gas Wells	7/23/2021	Orphan Oil and Gas Wells Obtained from https://data.ny.gov/Energy-Environment/Abandoned-Wells/vgue-bamz. Source: NYSDEC
Mines	7/23/2021	Mines Obtained from https://www.dec.ny.gov/lands/5374.html. Source: NYSDEC
State Pollutant Discharge Elimination System (SPDES) Permitted Facilities	7/23/2021	SPDES Facilities Obtained from http://gis.ny.gov/gisdata/inventories/details.cfm?DSID=1010. Source: NYSDEC, revised December 2019.
Combined Sewer Overflows (CSOs)	7/23/2021	CSOs Obtained from https://www.dec.ny.gov/chemical/48595.html . Source: New York State Department of Environmental Conservation, Division of Mineral Resources, 2020
Airports of the United States, Puerto Rico, and Virgin Island	7/23/2021	Airports of the United States, Puerto Rico, and Virgin Islands. Obtained from https://ais-faa.opendata.arcgis.com/datasets/e747ab91a11045e8b3f8a3efd093d3b5_0/explore?location=14.980494%2C-1.633886%2C2.71&showTable=true. Source: Federal Aviation Administration, Aeronautical Information Services, June 17, 2021
NYS Railroads	7/23/2021	NYS Railroads Obtained from https://gis.ny.gov/gisdata/inventories/details.cfm?DSID=904. Source: New York State Department of Transportation (NYSDOT), 2013
North American Rail Lines	7/23/2021	North American Rail Lines Obtained from https://data-usdot.opendata.arcgis.com/datasets/usdot::north-american-rail-lines-1/about. Source: U. S. Department of Ttransportation Bureau of Transportation Statistics (BTS), July 20, 2021

Hazmat Routes	7/23/2021	Hazmat Routes Obtained from https://koordinates.com/layer/22794-us-hazmat-routes/. Source: US BTS, 2018]
Road Maintenance Facilities (NYSDOT Facilities)	11/1/2020	Road Maintenance Facilities (NYSDOT Facilities) Obtained from https://gis.ny.gov/gisdata/inventories/details.cfm?DSID=391. Source: NYSDOT
Salt and Deicers Storage (NYSDOT Facilities)	11/1/2020	Salt and Deicers Storage (NYSDOT Facilities) Obtained from https://gis.ny.gov/gisdata/inventories/details.cfm?DSID=391. Source: NYSDOT
Petroleum Product Pipelines	7/23/2021	Petroleum Product Pipelines Obtained from https://www.eia.gov/maps/layer_info-m.php. Source: Created by U.S. Energy Information Administration (EIA) using publicly available data. 4/28/2020
Natural Gas Interstate and Intrastate Pipelines	7/23/2021	Natural Gas Interstate and Intrastate Pipelines Obtained from https://www.eia.gov/maps/layer_info-m.php. Source: Collected by EIA from Federal Energy Regulatory Commission (FERC) and other external sources. 4/28/2020
HGL Pipelines	7/23/2021	HGL Pipelines Obtained from https://www.eia.gov/maps/layer_info-m.php. Source: Collected by EIA from FERC and other external sources. 4/28/2020
Crude Oil Pipelines	7/23/2021	Crude Oil Pipelines Obtained from https://www.eia.gov/maps/layer_info-m.php. Source: Collected by EIA from FERC and other external sources. 4/28/2020
NYS Water Withdrawls	7/23/2021	NYS Water Withdrawls Obtained from https://gis.ny.gov/gisdata/inventories/details.cfm?DSID=1265. Source: NYSDEC Division of Wwater - Bureau of Water Resource Management, March 2021
New York State Boat Launches	7/23/2021	New York State Boat Launches Obtained from http://gis.ny.gov/gisdata/inventories/details.cfm?DSID=1268. Source: NYSDEC, 2009
Boat Launch Sites by State Parks or Marine Facility	7/23/2021	Boat Launch Sites by State Parks or Marine Facility Obtained from https://data.ny.gov/Recreation/Boat-Launch-Sites-by-State-Parks-or-Marine-Facilit/2gcg-hikh. Source: New York State Office of Parks, Recreation and Historic Preservation, 2020
USGS National Land Cover Data (NLCD) (2019)	7/23/2021	USGS NLCD (2019) Obtained from https://www.mrlc.gov/data?f%5B0%5D=category%3ALand%20Cover&f%5B1%5D=category%3Aland%20cover&f%5B2%5D=year%3A2019. Source: National Land Cover Database 2019 (NLCD2019)
NLCD Percent Developed Imperviousness (2019)	7/23/2021	NLCD Percent Developed Imperviousness (2019) Obtained from https://www.mrlc.gov/data?f%5B0%5D=category%3ALand%20Cover&f%5B1%5D=category%3Aland%20cover&f%5B2%5D=year%3A2019. Source: National Land Cover Database 2019 (NLCD2019)
Toxic Release Inventory (TRI) Facilities	7/23/2021	TRI Facilities Obtained from https://hifld-geoplatform.opendata.arcgis.com/datasets/2c4a0b5f85b945f8a67125e6a93fa7fe_23/explore?showTable=true. Source: EPA, 2020
Nutriant Loading (Lakes Only) (The Waterbody Inventory /Priority Waterbodies List)	7/26/2021	Nutriant Loading (Lakes Only) (The Waterbody Inventory /Priority Waterbodies List) Obtained from http://gis.ny.gov/gisdata/inventories/details.cfm?DSID=1117. Source: NYSDEC, Division of Water, Bureau of Water Assessment and Management, 2007
National Hydrology Dataset (NHD)	7/27/2021	NHD Obtained from https://www.usgs.gov/core-science-systems/ngp/national-hydrography/access-national-hydrography-products. Source: USGS NHD Data

2.3 Potential Contaminant Source Inventory			
Potential Source	**Contaminant(s) of Concern**	**Protection Area(s) Impacted**	**Relevant Information**
Petroleum spills at gas station across the intersection from Well 1 (southwest of Well 1)	Volatile Organic Compounds (VOCs), Semi-volatile Organic Compounds (SVOCs) (petroleum compounds)	Just outside Critical Source Area for Well 1	Several spills have been reported at this gas station. Active remediation has been reported. The Village reports that source water from Well 1 is not impacted by VOCs. This suggests the WhAEM is correct and the Critical Source Area for Well 1 does not include this property and associated spills.
Underground Storage Tank (UST) near Well 2	VOCs, SVOCS (petroleum compounds)	Critical Source Area to Well 2	An underground heating oil tank is present at a Roman Catholic church immediately north of Well 2. Status of the tank is unknown but no spill is noted and Well 2 water quality is not affected by VOCs.
Railroad passing within 100 feet of Wells 2 and 3	herbicides used for track vegetation maintenance; locomotive or cargo derailment.	Control Area and Critical Source Areas for Wells 2 and 3.	Well water from Wells 2 and 3 does not reflect presence of herbicides so current railroad (RR) management practices appear accepable but may warrant review; this RR line conveys primarily wax products. Wax, if ever spilled, would pool on the ground and not infiltrate the underlying aquifer, so the primary deraliment hazard may be the locomotive with its fuel. If this were to occur, the Village has sufficient wellfield capacity to meet its peak daily demands with either Well 2 or 3 out of service.
Septic sytem discharges	nutrients, trace pharmaceuticals/ Per- and polyfluoroalkyl substances (PFAS), irregular discharges.	There are limited numbers of septic systems 0.5 miles or further from the Critical and Extended Source Water Areas of Wells 2 and 3.	Septic system density is low and no septics adjoin the wellfield parcels. Annual water quality reports do not identify nutrient water quality defects and the Village emerging contaminant (PFOA, PFOS) sampling has not detected elevated presence.
Other spills	VOCs, SVOCS (petroleum compounds)	There are various closed or open surface spills in both the Critical and Extended Source Areas.	These are mostly closed, and many are surface spills. Regulatory processes are being folllowed which can be reinforced by the DWSP2 management team in future. None appear siginficant to qulaity of water currently provided by Wells 1-3.
Road De-Icing (salt)	Salt	Village and Town Roads in the Critical Source Area and an Interstate at the margin of the Critical /Extended Source Area	Sodium and Chlroide concentrations are not elevated in Allegany wells, suggesting that current Village, Town, and NYSDOT de-icing programs, road drainage which discourages infilitration, and high precipitation recharge rates across the river valley is providing adequate dilution for any infiltrating salt
Agricultural Uses	Chemicals, excess phospherous and nitrogen.	North margin of the Critical Source Area	Agricultural products contain chemicals and sometimes include pesticides. When fertlizer or pesticides are not properly applied, it can runoff or move throughout the ground to contaminate the drinking water.
Oil, Gas, and other Regulated wells	Petroleum compounds (VOCs, SVOCs)	Extended Source Area	Active and inactive gas wells are situated on the mountain ridgeline at the uppermost margins of the Extended Source Area. No spills have been reported and no wells have documents VOCs or SVOCs attributable to these wells.
Former sand and gravel pit that is closed and repurposed.	Equipment fueling during mining, post-mining informal land uses.	Just outside Critical Source Area for Well 1	The town owns an inactive sand and gravel pit north of the flow area for Well #1, which they use for leaves, brush, and storage only. The stakeholder group does not perceive the mine to be a potential contaminant threat to groundwater quality
St. Bonaventure University Golf Club	Pesticides and herbicides	Critical Source Area to Well 3	St. Bonaventure Golf Club is located in and around the Critical Source Area with a green immediately upgradient across I-86. Course superintendent said they utilize a typical golf course management protocol with weed killer, fertilizer and the like.

3.1 Protection and Management Methods & 3.2 Develop an Implementation Strategy Timeline									
Rank	**Protection Category**	**Targeted Potential Contaminant Source(s)**	**Protection Method and/or Management Method**	**Ease to Implement**	**Goal**	**Potential Cost**	**Potential Funding Sources**	**Project Leader and Partnerships Needed**	**Implementation Timing**
Moderate risk	1. Future growth and changes in land use near wells and Critical and Extended Source Areas.	A range of point and non-point source contaminants	1a. Adopt a protective zoning overlay district in both the Village and Town.	Moderate	Determine proper land use regulations.	$20,375	NYS Department of State (NYSDOS) Zoning Grant and Smart Growth Planning Programs, Municipal Budgets	Village Board lead, in partnership with Village and Town officials	Year 1-2 (1 year duration)
			1b. Conduct a municipal review of regulatory programs to help ensure that spills are addressed quickly.	Moderate	Develop risk mitigation strategies.	$9,900	Municipal Budgets	Village Board, Town Board	Year 2 (1 year duration)
			1c. Educate property owners about the presence of Critical and Extended Source Areas.	Moderate	Educate residents in vulnerable areas.	$2,475	NYS (Office of General Services or other grant source), Municipal Budgets	Village in partnership with Town, County	Year 2-3 (ongoing)
			1d. Maintain this DWSP2 as a living document and update it as needed, every five years or less, to address new potential contaminant threats such as climate, new chemical awareness or other issues.	Easy	Communicate and coordinate regularly.	$1,485	Municipal Budgets (funding and time)	DWSP2 Stakeholder Group members	Year 2 (ongoing)
	2. Use of road de-icing compounds (local, county, state, I-86) in Critical and Extended Source Areas.	Salt (sodium chloride)	2a. Develop education about salt impact on wells and increase general awareness about where to dump road salt. Signage along Village and Town roads.	Moderate	Educate local leaders on source water protection.	$2,545	Local general fund.	Village DPW in partnership with Town DPW, County DPW, NYSDOT	Year 2 (ongoing)
			2b. Update infrastructure and plan for directing road runoff into culverts and the river as opposed to promoting infiltration.	Complex	Build in resiliency to manage future potential contaminant threats.	$825	NYSDOT BRIDGE NY program, other NYS grant programs, such as WQIP	Village DPW in partnership with Town DPW, County DPW, NYSDOT	Year 3 or longer (duration TBD)
			2c. Upgrades of municipal road de-icing equipment to reduce salt, either by deploying more targeted salt use, converson to brine, or conversion to non-sodium alternatives.	Complex	Build in resiliency to manage future potential contaminant threats.	$508,250	NYSDOT Snow and Ice Pilot Program, other NYS or federal resiliency grants	Village DPW in partnership with Town DPW, County DPW, NYSDOT	Year 5 or longer (ongoing)

3.1 Protection and Management Methods & 3.2 Develop an Implementation Strategy Timeline									
Rank	**Protection Category**	**Targeted Potential Contaminant Source(s)**	**Protection Method and/or Management Method**	**Ease to Implement**	**Goal**	**Potential Cost**	**Potential Funding Sources**	**Project Leader and Partnerships Needed**	**Implementation Timing**
Moderate risk	3. Railroad and highway maintenance, as well as risk of accidental releases in Critical and Extended Source Areas.	Herbicides used along highways and railroads; accidental releases including cargo and vehicle fuels	3a. Create a plan for enhanced preparedness for spill response with local responders. Schedule an annual advisory communication to regional entities influencing Critical/Extended Source Areas to remind them of the water supply and process for reporting spills (this should include notifying the water operator).	Complex	Heighten awareness from emergency responders to spills in Critical or Extended Source Areas.	$9,750	Local municipal budgets	Village Board, partner with Village / Town / County DPW, STW, NYS DOT, Fire Departments, NYSDEC (Spills, Petroleum Bulk Storage), WNYP Railroad	Begin Year 1 (ongoing)
			3b. Develop regular communication protocols with WNYP Railroad, NYSDOT, and NYSDEC Spill and Response teams.	Easy	Communicate and coordinate regularly.	$413	Local municipal budgets	Village, WNYP Railroad, NYSDOT, NYSDEC, STW	Year 1
			3c. Update Emergency Response Plans for the water system and ask Cattaraugus County to include Critical and Extended Source Areas in any County Hazard Mitigation and Emergency Management Plans.	Moderate	Develop risk mitigation strategies.	$1,238	Village DPW in-kind	DPW lead, partner with County agencies (water, EMS, others)	Year 2
			3d. Evaluate herbicide alternatives, such as manual weed trimming around wells.	Easy	Develop risk mitigation strategies.	$10,000	WNYP Railroad	DPW, WNYP Railroad	Year 2
	4. Housekeeping around wells.	Hydrocarbons, herbicides and pesticides	Implement meticulous housekeeping where possible by the Village, acknowledging that the three wells do not satisfy ownership and control criteria (100' and 200').	Moderate	Ensure the safety of all wells.	$10,725	Village General Fund	DPW lead, partnership with others who store goods around well heads.	Year 1

3.1 Protection and Management Methods & 3.2 Develop an Implementation Strategy Timeline									
Rank	**Protection Category**	**Targeted Potential Contaminant Source(s)**	**Protection Method and/or Management Method**	**Ease to Implement**	**Goal**	**Potential Cost**	**Potential Funding Sources**	**Project Leader and Partnerships Needed**	**Implementation Timing**
Low risk	5. Effect of St. Bonaventure University Golf Club and other properties in proximity to Well 3.	Landscaping fertilizer and other chemicals used for routine maintenance.	Engage in regular communication between Village and university facilities regarding periodic sampling and coordination as needed.	Easy	Communicate and coordinate regularly.	$825	Town / County	Village/Town DPW, County and St. Bonaventure	Begin Year 1, ongoing
	6. St. Bonaventure Cemetery in the Critical Source Area.	Landscaping chemicals, embalming and pathogen byproducts.	Engage in regular communication and review of landscaping and burial practices with cemetery staff.	Easy	Communicate and coordinate regularly.	$825	Village and St. Bonaventure	DPW lead, St. Bonaventure partner	Begin Year 1, ongoing
	7. Excess nutrients and pesticides from formal and informal agricultural practices in the Critical and Extended Source Areas.	Nitrogen, phosphorus, pesticides, herbicides	Alert Cattaraugus County Soil and Water Conservation District (CCSWCD) to the presence of the Critical and Extended Source Areas. General education to landowners.	Easy	Educate residents in vulnerable areas.	$825	CCSWCD	CCSWD lead, partner with agricultural community	Year 2
	8. Septic systems in the Critical and Extended Source Areas.	Nutrients, trace pharmaceuticals/per- and polyfluoroalkyl substances (PFOA, PFOS), irregular discharges.	8a. Review of septic density proposed in Critical and Extended Source Areas.	Moderate	Limit contamination of water supply.	$0	Planning Board review fees	County Health Department lead, partner with Village and Town	Year 1
			8b. Conduct homeowner education.	Easy	Educate residents in vulnerable areas.	$825	CCSWCD	CCSWCD lead, partner with Town/Village	Begin Year 1, ongoing
			8c. Follow industry data about tracking contaminants and responding as appropriate.	Easy	Manage future potential contaminant threats to maintain water quality	$825	Village General Fund	Cattaraugus County Health Department	Begin Year 1, ongoing
	9. Oil and gas wells in Extended Source Area.	Hydrocarbons	Develop simple response plan and maintain awareness of permitting and industry trends.	Moderate	Communicate and coordinate regularly.	$825	Division of Homeland Seculrty and Emergency Services Hazardous Materials Emergency Preparedness Grant Program	Village Board with Town Board partnership	Year 2

TABLE 3.2A
IMPLEMENTATION STEPS

Protection Category 1: Future Growth and Changes in Land Use

1a. Adopt a protective zoning overlay district in both the Village and Town.

1. Gather necessary information to apply for the NYS Department of State (NYSDOS) Zoning Grant and Smart Growth Planning Programs.
2. Apply for the NYSDOS grant through the Consolidated Funding Application (CFA) in summer 2023. Implement the following when grant funding is received or other funding is available.
3. Identify zoning overlay boundaries.
4. Identify proper land use regulations to protect critical/source areas.
5. Draft land use land use regulations for zoning amendment to create overlay district.
6. Adopt zoning amendments.

1b. Conduct a municipal review of regulatory programs to ensure that spills are addressed quickly.

1. Identify relevant departments/agencies responsible for overseeing programs.
2. Create working group with relevant stakeholders from each department/agency.
3. Review current programs to identify gaps in spill reporting and mitigation.
4. Draft recommendations to improve regulations and processes.
5. Adopt regulatory amendments per working group recommendations.

1c. Educate property owners about the presence of Critical and Extended Source Areas.

1. Establish working group with Village, Town, and County representatives.
2. Identify all property owners in the Critical and Extended Source Areas
3. Develop educational materials for issues that property owners should be aware of.
4. Distribute educational materials to property owners.

1d. Maintain this DWSP2 plan as a living document and determine annually if it requires updates.

1. The Plan Management Team should annually discuss whether any aspect of the DWSP2 plan warrants updating. Indicators of significance could include, for example, new land uses and potential contaminant sources identified in the Critical or Extended Source Areas, a new public water supply source brought on-line warranting new source water contribution areas and potential threats analysis, or any revisions to goals or select protection plan elements.
2. For plan elements identified as needing revision, the Plan Implementation Team should either draft suggested modifications if changes are simple or seek funding to more comprehensively revise the plan. Significant changes or amendments to the DWSP2 plan should be approved by NYSDEC/NYSDOH and approved by the Village of Allegany.

Protection Category 2: Use of Road De-Icing Compounds

2a. Develop education about salt impact on wells and increase general awareness about where to dump road salt. Signage along Village and Town roads.

1. Determine key educational points regarding salt impacts with Village, Town, and County DPW and NYSDOT.
2. Develop road salt educational materials.
3. Develop road salt sign designs in collaboration with NYSDOT and other relevant agencies.
4. Distribute road salt educational materials to relevant stakeholders and property owners.
5. Install signs on roadways within the Critical and Extended Source Areas.

2b. Update infrastructure and plan for directing road runoff into culverts and the river as opposed to infiltration.

1. Identify roads where salt diversion would mitigate potential threats to drinking water.
2. Determine feasibility of road alterations and construction of drainage/runoff channels for each road.
3. Create cost estimates for feasible projects.
4. Establish implementation schedule or project phasing if necessary.
5. Gather information (budget worksheet, project map, etc.) to apply for the NYSDEC Water Quality Improvement Project (WQIP) Program through the CFA.
6. Apply for funding through the CFA for the NYSDEC WQIP.
7. Implement all feasible projects.

2c. Upgrade of municipal road de-icing equipment to reduce salt, either by deploying more targeted salt use, conversion to brine, or conversion to non-sodium alternatives.

1. Review brine-based alternatives to road salts, including necessary vehicle and equipment upgrades.
2. Conduct cost feasibility analysis to determine the most-viable alternatives to salt.
3. Gather information to apply for the NYS Environmental Facilities Corporation (EFC) Green Innovation Grant Program (GIGP) or the NYSDEC Water Quality Improvement Project (WQIP) Program through the CFA.
4. Apply for funding through the CFA for the NYSEFC GIGP or the NYSDEC WQIP.
5. Convert fleet to brine-based ice removal.

Protection Category 3: Railroad/Highway Maintenance and Accidental Releases

3a. Create a plan for enhanced preparedness for spill response with local responders. Schedule an annual advisory communication to regional entities influencing Critical/Extended Source Areas to remind them of the water supply and process for reporting spills (this should include notifying the water operator).

1. Establish a working group with stakeholders (including responders and water operator) to evaluate current spill reporting processes.
2. Establish additional reporting processes within Critical/Extended Source Areas.
3. Develop protocols and guidance documents to clearly outline reporting processes.
4. Distribute protocols and guidance document annually to all relevant entities.

3b. Develop regular communication protocols with WNYP Railroad, NYSDOT, and NYSDEC Spill and Response teams.

1. Identify points of contact at all relevant organizations for spill response actions.
2. Determine frequency of communication needs – quarterly, bi-annually, annually, etc.
3. Establish a recurring meeting among relevant parties.

3c. Update Emergency Response Plans for the water system and ask Cattaraugus County to include Critical and Extended Source Areas in any County Hazard Mitigation and Emergency Management Plans.

1. Coordinate with representatives for Cattaraugus County and share information related to Critical and Extended Source Areas.
2. Review current emergency response plans and identify gaps in existing plans and protocols.
3. Draft recommended updates to the emergency response plan.
4. Adopt updated emergency response plan.

3d. Evaluate herbicide alternatives, such as manual weed trimming around wells.

1. Inform WNYP railroad of potential threats and identify a point of contact to discuss alternatives to herbicide.
2. Collaborate with WNYP to establish new protocols for herbicide use around wells.
3. Draft a Memorandum of Understanding outlining new protocols.
4. Implement new protocols.

Protection Category 4: Housekeeping Around Wells

4a. Implement meticulous housekeeping where possible by the village, acknowledging that the three wells do not satisfy ownership and control criteria (100' and 200').

1. Draft and adopt a resolution identifying specific areas where ownership and control criteria are not met.
2. Establish new DPW maintenance protocols in areas the village does have ownership and control.
3. Identify property owners adjacent to areas where ownership and control criteria are not met.
4. Collaborate with property owners to draft new maintenance protocols.
5. Establish a Memorandum of Understanding with each property owner to ensure protocols are followed.

Protection Category 5: : St. Bonaventure University Golf Club

5a. Engage in regular communication between Village and university facilities regarding periodic sampling and coordination as needed.

1. Establish a point of contact at the university facilities for collaboration.
2. Establish basic understanding of maintenance practices and their potential threat to drinking water.
3. Identify type and frequency of sampling needs and sign a Memorandum of Understanding with the university.
4. Schedule bi-annual recurring meeting to discuss annual maintenance plans at the start and close of each season to determine additional sampling needs.

Protection Category 6: St. Bonaventure Cemetery

6a. Engage in regular communication and review of landscaping and burial practices with cemetery staff.

1. Establish a point of contact at the cemetery facilities for collaboration.
2. Establish basic understanding of landscaping and burial practices, and their potential threat to drinking water.
3. Schedule recurring meetings to discuss ongoing burial and landscaping practices.

Protection Category 7: Excess Nutrients and Pesticides

7a. Alert CCSWD to the presence of the Critical and Extended Source Areas. General education to landowners.

1. Establish a point of contact at the CCSWCD.
2. Share all relevant materials regarding Critical and Extended Source Areas with contact at CCSWCD.
3. Identify potential threats from common agricultural practices.
4. Create educational materials to mitigate potential agricultural threats to water quality.
5. Collaborate with CCSWCD to distribute educational materials to landowners.

Protection Category 8: Septic Systems

8a. Review of septic density proposed in Critical and Extended Source Areas.

1. Review current building code standards regarding septic systems.
2. Review building permit data to estimate current septic density.
3. Model septic density with current building code standards and septic density estimate to determine the potential threat to water quality.

8b. Conduct homeowner education.

1. Review building permit data to identify parcels with septic systems within the Critical/Extended Source Areas.
2. Create educational materials regarding septic system functionality and maintenance as it pertains to potential water quality threats.
3. Distribute educational materials to property owners with septic systems within the Critical/Extended Source Areas.

8c. Update property owner list and educational materials for annual redistribution8c. Follow industry data about tracking contaminants and responding as appropriate.

1. Identify all potential regulating bodies for new contaminants (PFOA, PFOS)
2. Establish an annual process of checking with regulating bodies for potential updates to contaminants.
3. Sign up for all mailing lists and regular communication options from regulating bodies.

Protection Category 9: Oil and Gas Wells

9a. Develop simple response plan and maintain awareness of permitting and industry trends.

1. Evaluate current permitting process against industry trends to identify potential threats to the Extended Source Area from existing oil and gas wells and their collection lines
2. Update local regulations and permit process to mitigate for potential threats within the Extended Source Area.
3. Collaborate with industry professionals to stay current on industry trends that may mitigate potential current threats or introduce new potential threats and develop release response plans as appropriate.
4. Update regulations and permit process, as necessary.

Table 3.3 - Village of Allegany DWSP2 Implementation Cost Analysis

Applicable Protection Method and/or Management Method	Task Requirements, for either entire assignment or per year (indicate which)		Weekly Hourly Requirements from Municipal personnel	Total Hours Required from Municipal personnel over period (total project, or annual)	Labor Cost per Hour (NYSDOL Wages) (or blended rate if multiple personnel will participate)	Cost of Total hours required from Municipal Personnel, including 50% for benefits	Non-Personal Costs (e.g. equipment/materials, land, hardware, consultants)		Total Potential Cost (columns F + G)
1a. Adopt a protective zoning overlay district in both the Village and Town.	Review meetings with Planning Board members, political leaders, and Village and Town attorneys to confirm ordinance language, complete State Environmental Quality Review (SEQR). Adopt ordinances.	One time effort	6	150	$ 55.00	$12,375.00	$8,000	Consultant support to facilate meetings, help deliberate over model ordinance details, prepare draft documents and SEQR Negative Declaration statements. ($4,000 per municipality)	$20,375.00
1b. Conduct a municipal review of regulatory programs to help ensure that spills are addressed quickly.	Review existing spill response programs, prepare new standard operating procedures, as needed, enare that fire departments, DPW, and others understand first responder tactics.	Annual	2.5	120	$ 55.00	$9,900.00	$0	None	$9,900.00
1c. Educate property owners about the presence of Critical and Extended Source Areas.	Mailings to property owners and school handouts about point and non-point sources of goundwater contamination.	Annual	0.5	30	$ 55.00	$2,475.00	$0	None	$2,475.00
1d. Maintain this DWSP2 plan as a living document and update it as needed, every five years or less, to address new potential contaminent threats such as climate, new chemical awareness or other issues.	Plan Management Team reviews and updates plan every 5 years or less	Annual	0.3	18	$ 55.00	$1,485.00	$0	None	$1,485.00
2a. Develop education about salt impact on wells and increase general awareness about where to dump road salt. Signage along Village and Town roads.	Assemble best practice training materials and meet with with DPW personnel and municipal leadership for annual trainings and to secure buy-in.	Annual	0.5	26	$ 55.00	$2,145	$400	Budget for "low salt area" road signage.	$2,545.00
2b. Update infrastructure and plan for directing road runoff into culverts and the river as opposed to promoting infiltration.	Ensure that Village and Town programs avoid and/or remove stormwater infiltration practices within the Critical Source Area during future road improvement projects	Annual	0.25	10	$ 55.00	$825	$0	Changes may be "no cost" for any significant road rebuild programs, or may require significant one-time costs where drainage changes would be being made solely tosupport this DWSP2 initiative.	$825
2c. Upgrades of municipal road de-icing equipment to reduce salt, eitehr by deploying more targeted salt use, conversen to brine, or conversion to non-sodium alternatives.	Track ongoing research on equipment and strategy to minimize sodium-baed de-icers. Convert equipment as appropriate.	Annual tracking, periodic equipment investments	1	100	$ 55.00	$8,250	$500,000	Annual cumulative allowance available to convert municipal equipment as new techniques are validated.	$508,250
3a. Create a plan for enhanced preparedness for spill response with local responders. Schedule an annual advisory communication to regional entities influencing Critical/Extended Source Areas to remind them of the water supply and process for reporting spills (this should include notifying the water operator).	Develop communication plan for emergency responders when spills occur in Critical or Extended Source Areas.	One time communication plan, followed by annual refreshers (see 3b)	2	100	$ 55.00	$8,250	$1,500	Allowance for mapping or consultation fees.	$9,750
3b. Develop regular communication protocols with WNYP Railroad, NYSDOT, and NYSDEC Spill and Response teams.	Identify points of contact, determine frequency of contact, and establish a recurring meeting.	Annual	<1	5	$ 55.00	$413	$0	None	$413
3c. Update Emergency Response Plans for the water system and ask Cattaraugus County to include Critical and Extended Source Areas in any County Hazard Mitigation and Emergency Management Plans.	Develop risk mitigation strategies.	Annual	<1	15	$ 55.00	$1,238	$0	None	$1,238

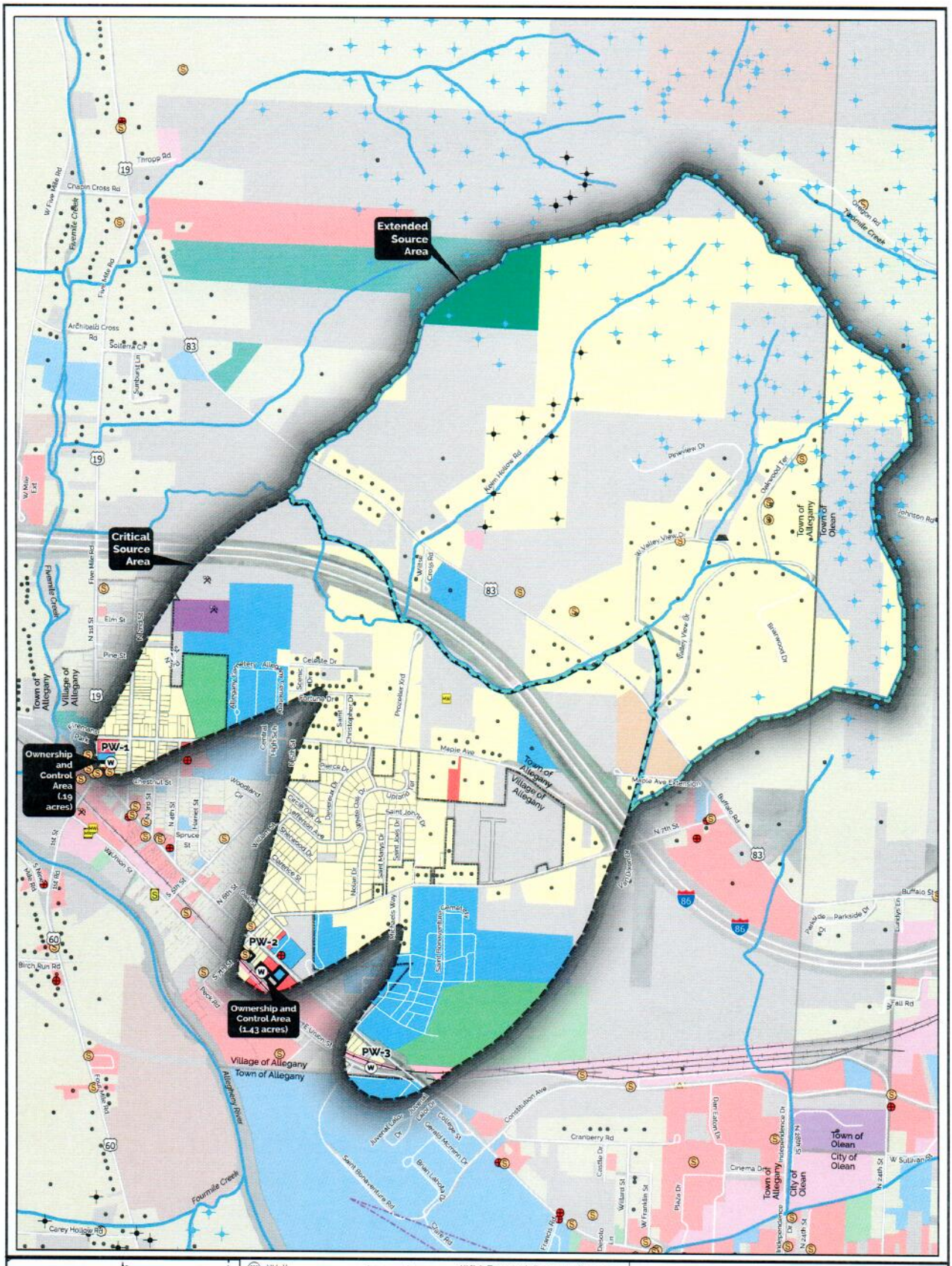
Table 3.3 - Village of Allegany DWSP2 Implementation Cost Analyses									
Applicable Protection Method and/or Management Method	Task Requirements, for either entire assignment or per year (indicate which)		Weekly Hourly Requirements from Municipal personnel	Total Hours Required from Municipal personnel over period (total project, or annual)	Labor Cost per Hour (NYSDOL Wages) (or blended rate if multiple personnel will participate)	Cost of Total hours required from Municipal Personnel, including 50% for benefits	Non-Personal Costs (e.g. equipment/materials, land, hardware, consultants)		Total Potential Cost (columns F + G)
3d. Evaluate herbicide alternatives, such as manual weed trimming around wells.	Budget for railroad to use mechanical weed removal rather than herbicides near wells.	Annual	0	0	$ 55.00	$0	$10,000	Potential cost for RR to use mechanical measures to control plant growth along its railroad near wells.	$10,000
4. Implement meticulous housekeeping where possible by the Village, acknowledging that the three wells do not satisfy ownership and control criteria (100' and 200').	DPW personnel exercising particular care to manage land carefully around Wells 1 and 3, and particularly near well 2 which abuts DPW facilities.	Annual Administration and implementation on a project basis.	3	130	$ 55.00	$10,725	$0	None	$10,725
5. Engage in regular communication between Village and university facilities regarding periodic sampling and coordination as needed.	Communication and response, as necessary. Annual site visit from Village to golf course for observation and discussion.	Annual	<1	10	$ 55.00	$825	$0	None	$825
6. Engage in regular communication and review of landscaping and burial practices with cemetery staff.	Communication and response as necessary with cemetery owners. Annual site visit by Village to review and discuss.	Annual	<1	10	$ 55.00	$825	$0	None	$825
7. Alert Cattaraugus County Soil and Water Conservation District (CCSWCD) to the presence of the Critical and Extended Source Areas. General education to landowners.	Regular communications with CCSWD. Awareness visits to agricultural sites in Critical and Extended Source Areas.	Annual	<1	10	$ 55.00	$825	$0	None	$825
8a. Review of septic density proposed in Critical and Extended Source Areas.	Confirm that new development does not overload local aquifer areas with wastewater discharges near Village wells.	Annual	0	0	$ 55.00	$0	$0	These are program costs that an applicant should pay, or perhaps the Cattaraugus County Health Department carries during project review.	$0
8b. Conduct homeowner education.	Annual education program, mailers, school programs.	Annual	<1	10	$ 55.00	$825	$0	None	$825
8c. Follow industry data about tracking contaminants and responding as appropriate.	Attend continuing education classes about non-point septic system contaminants. Respond as needed.	Annual	<1	10	$ 55.00	$825	$0	None	$825
9. Develop simple response plan and maintain awareness of permitting and industry trends.	Develop simple communication/response plan including familiarization of well owners and their contact details, and maintain awareness of permitting and industry trends.	Annual	<1	10	$ 55.00	$825	$0	None	$825

Note: Indicated costs are estimates.

4.1b Plan Mangement Summary	
Plan Management Summary	
Item	**Status**
Designate a Plan Management Team	Complete
Determine progress report frequency Months Quarterly	Complete
Share progress reports	Complete
Review and share the plan	Complete
Verification from NYS DOH and DEC for completeness	In Process
Create a revision schedule	Complete

Village of Allegany
Drinking Water Source Protection Program (DWSP2)
Plan System Name: Village of Allegany
PWS Number: NY0400330

APPENDIX 2: Maps



Legend

- Well
- Extended Source Area
- Critical Source Area
- Ownership and Control Area
- Parcel Boundary
- Village of Allegany Boundary
- NYSDEC Dam

Land Use

- Agricultural
- Residential
- Vacant
- Commercial
- Recreation & Entertainment
- Community Services
- Industrial
- Public Services
- Wild, Forested, Conservation Lands & Public Parks

Potential Contaminant Sources

- Underground Oil/Gas Tanks
- NYSDEC Spill Incidents
- NYSDEC Remediation Site Borders
- Private Septic Systems
- Abandoned Wells
- Oil and Gas Wells
- Mined Lands
- SPDES Permits
- Toxic Release Inventory (TRI) Facility
- Inactive Regulated Facilities
- Solid Waste Management Facilities
- Major Natural Gas Pipeline
- Railroad

Allegany Water Protection

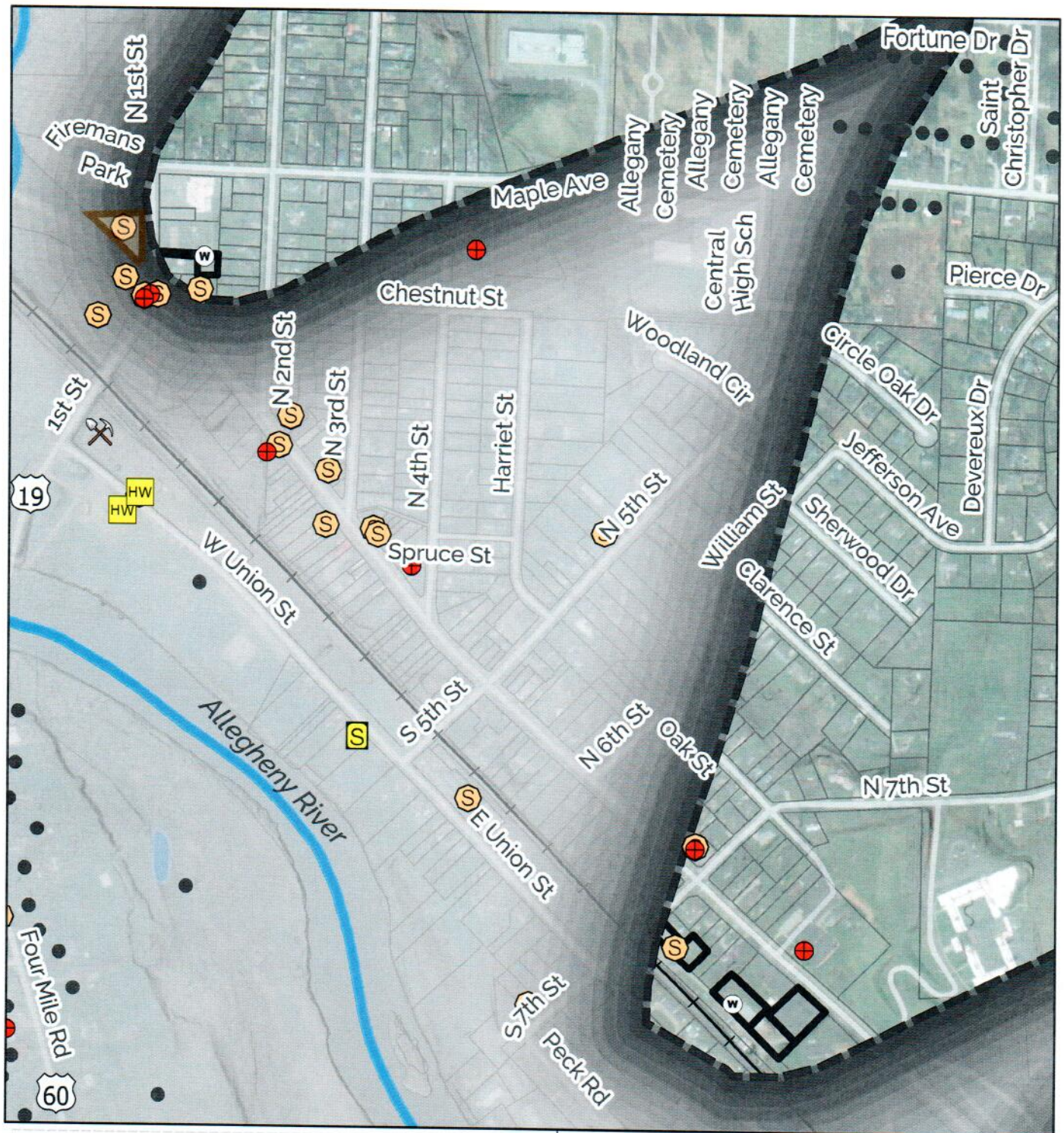
Allegany Water Source Land Uses

Village of Allegany, Cattaraugus County, NY

Drawn:	STP
Date:	01/27/2023
Scale:	1:15,000
Project:	42020.04
Figure:	1

Sources: Cattaraugus County; NYS DEC; NYS GPO; NYS ORPTS; Village of Allegany; US DOT; US EIA; USGS; ESRI.

N Scale: 0 0.13 0.25 Miles



Legend:

- Well
- Critical Source Area
- Parcel Boundary
- Ownership and Control Area

Potential Contaminant Sources

- Underground Oil/Gas Tanks
- NYSDEC Spill Incidents
- NYSDEC Remediation Site Borders
- Private Septic Systems
- Mined Lands
- Inactive Regulated Facilities
- Solid Waste Management Facilities
- Railroad

Allegany Water Protection

Ownership and Control Areas

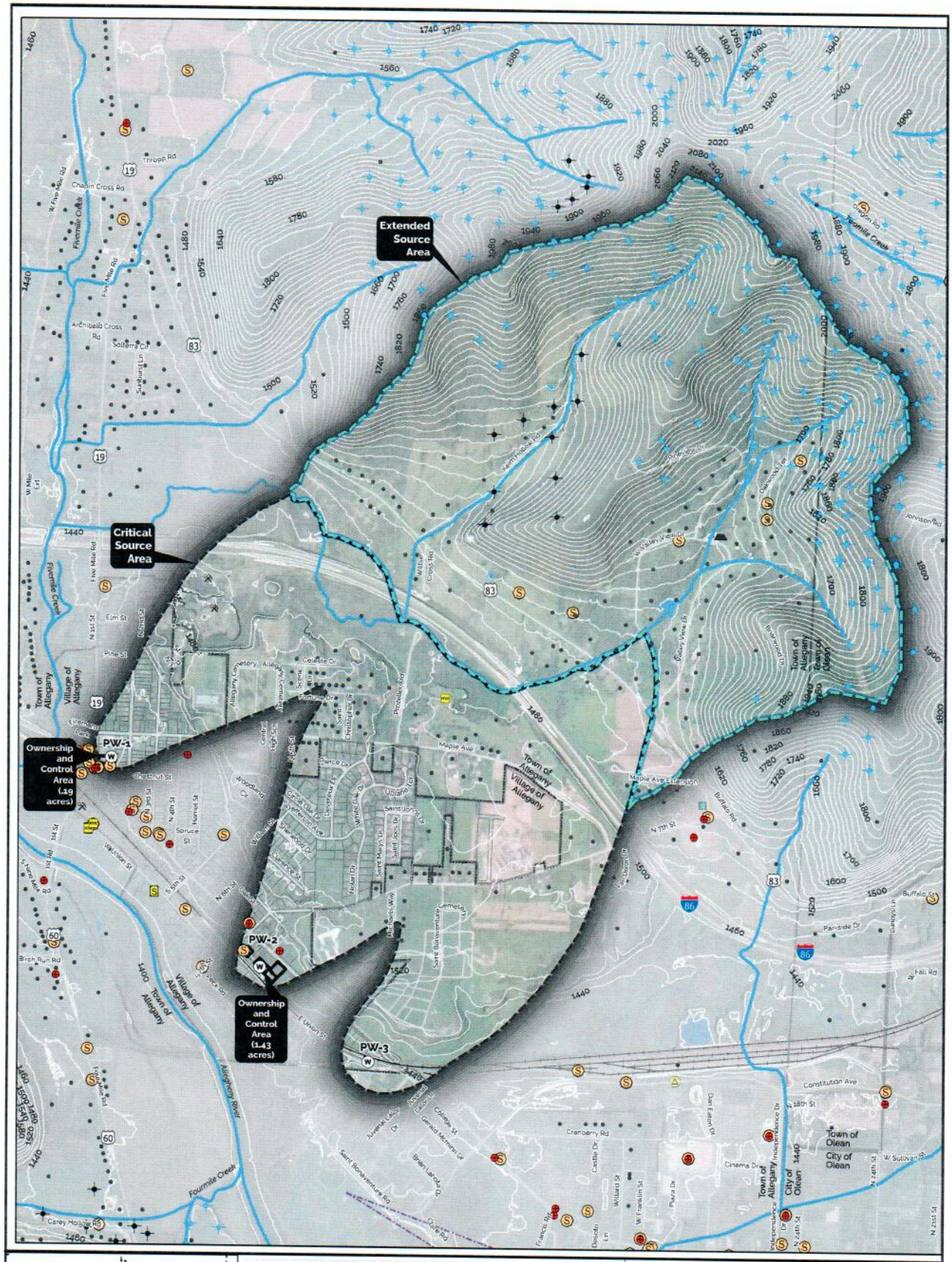
Village of Allegany, Cattaraugus County, NY

Drawn:	STP
Date:	1/13/2023
Scale:	1:6,600
Project:	42020.04
Figure:	2

Sources: Cattaraugus County; NYS DEC; NYS GPO; NYS ORPTS; Village of Allegany; US DOT; US EIA; USGS; ESRI.

N

Scale: 0 0.05 0.1 Miles


Extended Source Area
Critical Source Area
Ownership and Control Area (.19 acres)
Ownership and Control Area (1.43 acres)
PW-1
PW-2
PW-3
Village of Allegany
Town of Allegany
City of Olean
Town of Olean
Fourmile Creek
Allegheny River
Erie Co.
Wyoming Co.
Cattaraugus Co.
Allegany Co.
Village of Allegany
Legend:
Well
Extended Source Area
Critical Source Area
Parcel Boundary
Ownership and Control Area
Underground Oil/Gas Tanks
NYSDEC Spill Incidents
NYSDEC Remediation Site Borders
Private Septic Systems
Abandoned Wells
Oil and Gas Wells
Mined Lands
SPDES Permits
Toxic Release Inventory (TRI) Facility
Inactive Regulated Facilities
Solid Waste Management Facilities
Major Natural Gas Pipeline
Railroad
NYSDEC Dam
Contour (20 ft)
Allegany Water Protection
Potential Contaminant Source Inventory
Village of Allegany, Cattaraugus County, NY
Drawn: STP
Date: 01/27/2023
Scale: 1:15,000
Project: 42020.04
Figure: 3
Sources: Cattaraugus County; NYS DEC; NYS GPO; NYS ORPTS; Village of Allegany; US DOT; US EIA; USGS; ESRI.
N
Scale:
0 0.13 0.25 Miles