Project Profile 1: Private Septic System Database

TARGETED POTENTIAL CONTAMINANT SOURCE: Fecal bacteria entering the groundwater due to improperly managed septic systems and out of date septic system records.

While many of Orangetown's homes and businesses are served by a public sewer system, some remain on private septic systems. Currently available septic system records rely on assessor information by parcel, but this data may be outdated or incomplete. Missing data may include information on historic septic system, recently updated systems, or permanently closed systems.

Septic systems located within the critical areas may introduce fecal bacteria into the water supply if they are not properly maintained. Compiling up-to-date information on parcels with private septic systems will allow for targeted informational outreach that informs the public on proper septic system maintenance to avoid groundwater contamination. It will also enable outreach for financial assistance.

Landowners with active septic systems may be eligible for financial assistance for septic system upgrades through NYS EFC Septic System Replacement Fund. Those identified through this database will be encouraged to contact Liz Mello at the Rockland County Department of Health (RC DOH) to determine eligibility.

To develop this database, Orangetown, in collaboration with the RC DOH, will review historic septic systems records and cross check them with sanitary sewer system connection records. Historic septic system records are housed at the RC DOH. Orangetown maintains records of sewer connections.

There are at least two challenges with this data. First, sewer connection information is stored in paper files at the Town of Orangetown, making cross-checking parcels time consuming. Second, it is possible that some parcels may still have an active septic system even though they have been connected to the sanitary sewer system. These active septic systems may only receive waste from certain sections of the building plumbing, such as a washing machine, while the rest of the plumbing is on sewer.

One recommendation on how to account for this potential source of inaccuracy includes requiring parcels found to have historic septic systems but have since been converted to sewer to be inspected at the point of sale, this way the information in this database can be assessed and updated as it is made available.

GOALS AND PRIORITIES:

- Update Orangetown's records regarding the number of parcels on private septic systems.
- Ensure proper maintenance information is provided for the public
- Manage the influence of septic systems present or proposed in proximity to the municipal wellfields and throughout the upstream source watershed.

Priority Level: High

SUMMARY OF PROTECTION AND MANAGEMENT METHODS:

Methods to reduce the risk and mitigate the threat include:

- Update records regarding parcels served by a private septic system.
    - Work with RC DOH to obtain historic septic system data

    - Review Orangetown's records of sewer connections, and
    - Overlay data to determine which parcels are still on septic
- Developed targeted outreach materials on septic system maintenance to property owners on septic
    - Work with RC DOH for a shared messaging campaign
- Upgrade of septic systems that do not meet current design requirements.
    - Work with RC DOH to address upgrades for existing septic systems in the watershed
    - Determine if residents are able to apply for the NYS EFC Septic System Replacement Fund
    - Set up procedure for interacting/collaborating with partners and sharing information and materials.

POTENTIAL COSTS:
Estimated cost: $10,000
Potential costs include staff time to develop, distribute, and analyze survey results; staff time to review records and determine if there are any gaps; staff time to update and/create a septic system database; staff time to develop and distribute informational pieces.

Cost Classification: Medium

POTENTIAL FUNDING SOURCES:
- **Town of Orangetown Budget**
- **Rockland County Department of Health Budget**

POTENTIAL PARTNERSHIPS - PEOPLE AND AGENCIES INVOLVED:
- Plan Management Team
- Town of Orangetown
- Rockland County Department of Health, primary contact:
    - Liz Mello, Senior Public Health Engineer; melloe@co.rockland.ny.us; 845-364-2616

SUGGESTED TIMELINE:
Short Term: 1 year for planning
Medium Term: 1 to 3 years for database completion
Ongoing: Annually assess database and update as necessary. Annually distribute informational pieces

POTENTIAL BARRIERS:
- Communication with landowners
- Historic information may not be available
- Older homes that might have both a septic system and a sewer connection

IMPLEMENTATION STEPS:
1. Plan Management Team, Town of Orangetown, and RC DOH determine what information is needed for the septic system database and where to find this information.
2. Identify methods to gather this data, potentially though historic record search or through field surveys and inspections.
3. Identify what the best platform for recording this data will be
4. Identify who will be gathering and inputting this data into the database.

5. Create the database.
6. Develop any materials needed to assist in data collection.
7. Begin gathering and inputting information into the database
8. Annually, assess and update the database as needed.

Project Profile 2: Countywide Coordinated Municipal Outreach Pieces (Intermunicipal Coordination)

TARGETED POTENTIAL CONTAMINANT SOURCE:

Veolia sources, treats, and distributes drinking water in Orangetown. This water is sourced from and distributed throughout much of Rockland County. Therefore, all 5 of the Towns and 15 out of the 18 Villages in Rockland County also receive water from the Veolia's system.

Due to the scale of the system, this DWSP2 plan is only able to cover the portion of the water supply sourced from Orangetown. So, educational materials and land use protections implemented as part of this plan will not be consistent across the whole system, leaving a portion of Orangetown's water to the protection of neighboring municipalities.

The establishment of a coordinated Countywide meeting with Rockland municipalities would allow for a designated space to work towards municipal water quality protection goals across the system. This unified group will enable the pooling of ideas and resources towards addressing drinking water quality.

One of the goals for this coordination would be to encourage other municipalities in Rockland County to develop a DWSP2 plan of their own. Another goal would be to engage with Veolia, Rockland County, and other local and regional organizations working on water quality concerns.

Coordinated outreach to other Rockland municipalities can be facilitated by [HVRC, Rockland County DOH, Orangetown] through outreach events such as the Rockland County Supervisors and Mayors meeting, the Rockland Water Taskforce, and through email communications.

Once interest is established, those in attendance can decide on the best platform to host the meetings and the frequency of the meetings.

GOALS AND PRIORITIES:

- Connect with other municipalities served by the Veolia water system in Rockland County
- Establish shared goals and priorities related to water quality
- Develop shared actions and messaging regarding water quality protection for the Veolia system

Priority Level: High

SUMMARY OF PROTECTION AND MANAGEMENT METHODS:

Methods to reduce the risk and mitigate the threat include:

- Maintain a good working relationship with neighboring municipalities
- Maintain a good working relationship with Veolia
- Periodic coordination with neighboring municipalities
- Establish a shared messaging campaign and outreach schedule

POTENTIAL COSTS:

Estimated Cost: $5,000

Potential costs include staff time [including time for other Organizations such as Rockland County DOH and HVRC] to meet with municipal staff, discuss the benefits of establishing this collaborative meeting, coordinate a meeting time and place, gather information, set an agenda and host the meeting.

Cost Classification: Low

POTENTIAL FUNDING SOURCES:

- **Town of Orangetown Budget** [or other municipal/County budgets]
- **Hudson River Greenway Community Grant** (for educational material development)
    - Funds natural resource protection, regional planning, and environmental education

POTENTIAL PARTNERSHIPS - PEOPLE AND AGENCIES INVOLVED:

- Rockland County Towns and Villages served by Veolia
    - Towns of Clarkstown, Haverstraw, Ramapo, and Stony Point
    - Villages of Airmont, Chestnut Ridge, Grand View-on-Hudson, Haverstraw, Kaser, Montebello, New Hempstead, New Square, Piermont, Pomona, Sloatsburg, Spring Valley, Upper Nyack, Wesley Hills, and West Haverstraw
- Veolia
- Rockland Water Task Force
- Cornell Cooperative Extension Rockland County

SUGGESTED TIMELINE:

Short Term: approximately 1 year for planning and initial communication with municipalities
Medium Term: approximately another 1-2 years to set up regular meetings
Ongoing: Meetings to discuss specific topics, messaging, and frequency of messaging

POTENTIAL BARRIERS:

- Communication with all municipalities
- Communication with Veolia
- Establishing a messaging campaign that meets all municipal needs
- Potential efficiency issues in intermunicipal collaboration

IMPLEMENTATION STEPS:

1. Establish and maintain relationships with municipalities served by the Veolia water system. Emphasize the importance of communication to protect drinking water quality.
2. Determine the best platform in which to host a drinking water coordination meeting with other Rockland municipalities.
3. Request regular meetings to develop a shared messaging campaign around drinking water quality protection.
4. Communicate the importance of the use of best management practices near well fields to avoid/mitigate contamination of groundwater.
5. Identify other topics for discussion at these meetings based on discussions with all participating municipalities.
6. Determine messaging information and schedule.
7. Develop messaging materials.
8. Send out messaging on agreed upon schedule.

Project Profile 3: Public Awareness Leading to Drinking Water Source Protection

TARGETED POTENTIAL CONTAMINANT SOURCE: Pesticides, Herbicides, Other Lawn and Garden Chemicals, and Any Unwanted Contamination of Source Water in Critical Areas

Practices on private properties can lead to impairment of nearby waterbodies by introducing chemicals into the environment through infiltration and runoff.

The application of pesticides, herbicides, and other lawn and garden chemicals and the improper disposal of lawn clippings and leaves on properties introduce pollutants such as nitrogen and phosphorus to the environment. Precipitation events can lead to washing these chemicals off lawns into nearby waterbodies and accelerate their infiltration into groundwater. Phosphorus is one of the leading causes of water pollution.

Any chemical spill could eventually end up in the groundwater supply. Residential properties may contain unknown or unlisted chemical storage. Any spill of these chemicals, known or unknown, could enter the groundwater.

Some instances of pollution may be preventable with increased education or awareness surrounding the importance of chemical maintenance and disposal. In order to increase awareness, informational materials on various chemical pollutants and their sources are recommended to be developed, compiled, and distributed to landowners, businessowners, and landscapers.

There are local and regional organizations and departments within Orangetown that have already constructed outreach and educational materials on some of these topics. In collaboration with these organizations and departments, an inventory of all the informational materials available can be created and assessed for relevance and gaps.

After the inventory of already available resources is established, additional informational materials can then be developed to fill any gaps. A webpage is recommended to house this inventory of resources with links to important information. This will help the target audience easily find all the information they are looking for.

For distribution, the inventory can be assed to determine the schedule and distribution method on which each piece should be sent to the target audience. A welcome packet is recommended to be put together to send to new homeowners when a property is sold. Road signs and other signage can be installed to inform the public.

All informational materials should include benefits of protecting our water source while also reminding the target audience of any federal, state, county, and local codes.

Currently available campaigns and information pieces:

- Orangetown Highway Department “only rain down the drain”
- Cornell Cooperative Extension Rockland County circulars
- Orangetown, Piermont, and Nyack send out information about leaf pick up and yard waste pick up

GOALS AND PRIORITIES:

- Increased public awareness for watershed protection
- Increased community action towards water quality protection

Priority Level: Medium

SUMMARY OF PROTECTION AND MANAGEMENT METHODS:

Methods to reduce the risk and mitigate the threat include:

- Collaborate with other organizations working in Orangetown/Rockland County on water quality protection
- Develop informational materials (i.e. road signage, mailings, etc.) that fill informational gaps
- Increased education for Town residents and businessowners

POTENTIAL COSTS:

Estimated Costs: $15,000

Potential costs include staff time collaborating with printing costs, signage, mailings and postage, and staff time spent planning and developing informational pieces. This would also be staff time spent developing, hosting, and updating an informational website and collaborating with other organizations.

Cost Classification: Medium

POTENTIAL FUNDING SOURCES:

- **Town of Orangetown Budget**
- **NYS DEC Hudson River Estuary Local Stewardship Planning Grant**
    - Funds Implement source water protection strategies or management methods identified in a DEC accepted DWSP2 source water protection plan. Activities that enhance protections for drinking water sources are eligible, tailored to local needs, with priority given to surface drinking water sources and watershed areas supplying community water systems.
- **Hudson River Greenway Community Grant**
    - Funds natural resource protection, regional planning, and environmental education.

POTENTIAL PARTNERSHIPS - PEOPLE AND AGENCIES INVOLVED:

- Town of Orangetown
- Plan Management Team
- Local Environmental Groups or Organizations (i.e. Sparkill Creek Watershed Alliance, Cornell Cooperative Extension Rockland County)
- Rockland Water Task Force
- Adjacent Towns and Villages

SUGGESTED TIMELINE:

Short-term: Approximately 1 year for initial planning and idea identification for educational outreach; and an additional 1 year for inventory development and grant applications as needed
Medium term: Approximately 1 year for additional material development and distribution
Ongoing: Continued engagement with the community on the importance of source water protection through informational sessions and outreach events.

POTENTIAL BARRIERS:

- Need to maintain privacy for security reasons of exact well and reservoir locations.
- Balancing this privacy with need to prevent unwanted contamination of the water system.
- Public understanding of the materials presented and their connection to the need to protect water quality in the watershed.

IMPLEMENTATION STEPS:

1. Plan Management Team meet to identify methods to educate the public on potential contaminant threats (e.g. informational newsletter, public outreach events, etc.).
2. Identify potential collaborators (e.g. local environmental groups or organizations).
3. Plan Management Team to meet with potential collaborators to discuss already available informational materials.
4. Compile all resources on one webpage, with links to sources
5. Plan distribution methods and schedules
6. Identify if there are any gaps that need to be filled with additional materials
7. Apply for funding, if necessary
8. Develop and new informational materials and distribute to the public via social media, informational mailings, web postings, newspaper postings, public meetings, or workshops.

Project Profile 4: Update Town Code with Water Protection Methods

TARGETED POTENTIAL CONTAMINANT SOURCE: Any Unwanted Contamination of Source Water in Critical Areas

Since Orangetown relies on groundwater for approximately 70% of its water supply, it is important to protect the groundwater from contamination. Overlay zones identify areas on the surface that can affect the underlying groundwater and can offer water quality protection by setting additional standards for development in the identified areas.

This plan recommends that Orangetown develop an overlay district for the well critical areas focusing on regulating light and heavy industrial operations. An overlay zone overlays existing zoning districts and adds additional requirements to the underlying district zoning. The underlying zoning remains unless the overlay zone provisions specifically modify it. Any development, improvements, redevelopment, or subdivisions on a parcel within the well critical areas will be subject to planning board review for the new overlay requirements.

The first step in developing an overlay zone is to map the zone's boundaries. Orangetown's overlay zone will be for the source water critical areas defined by this plan, however it is recommended that the boundaries undergo a field investigation before they are established ensure accuracy.

We recommend that the Plan Management Team along with other important individuals from the Town of Orangetown convene to discuss the specific provisions that should be included in the overlay zone. Standards should reduce or mitigate the adverse impacts that development or other activities might have on the aquifer. When discussing which rules/limits to include in the overlay district, questions such as below should be considered:

- What are we limiting? How should we define those limits?
- What are the rules for new vs. existing businesses?
- What are the rules for if a business is sold?
- Are retrofits needed? What should the retrofits be based off?

Based on conversation with the DWSP2 Committee, potential ideas to include as part of the overlay are as follows:

- Protecting groundwater drinking sources and local waterbodies
- Developing and implementing stormwater management practices on new construction
- Creating buffer zones around waterbodies and well heads
- Requiring a zero-runoff ordinance on newly constructed properties
- Lower requirements for stormwater management from 1 acre in the critical area for specific land uses

GOALS AND PRIORITIES:

- Regulate zoning in well field critical areas
- Promote cleaner drinking water by limiting future development of manufacturing facilities

Priority Level: High

SUMMARY OF PROTECTION AND MANAGEMENT METHODS:
Methods to reduce the risk and mitigate the threat include:

- Develop new aquifer zoning overlay district for the well field critical areas

POTENTIAL COSTS:
Estimated Costs: $100,000
Potential costs include staff time to plan for the overly district, apply for potential grants, develop the overlay, staff time to update town code, hiring of a consultant to field test the critical area boundaries, hiring of a consultant to assist in defining appropriate standards and limits to employ in the overlay district

Cost Classification: High

POTENTIAL FUNDING SOURCES:

- **Town of Orangetown Budget**
- **Hudson River Estuary Program Local Stewards Planning Grant**
    - Provides funding for planning a conservation overlay zone or natural resource protection regulations for priority lands and waters identified as important in a municipal or inter-municipal plan.
- **NYS DOS Smart Growth Program Community Planning and Zoning Grant Program**
    - Provides funding for preparation and local adoption of new or updated community wide zoning regulations or the amendment of existing zoning regulations for part of town, village, or city. Zoning must integrate smart growth principals.

POTENTIAL PARTNERSHIPS - PEOPLE AND AGENCIES INVOLVED:

- Town of Orangetown
- Plan Management Team

SUGGESTED TIMELINE:
Short-term: Approximately 1-2 years for initial planning and grant application
Medium-term: Approximately another 2-3 years for development and finalization

POTENTIAL BARRIERS:

- Balancing well location privacy with need to prevent unwanted contamination of the water system.
- Additional funding is needed to assist with verifying the overlay district boundaries and identifying standards to implement.

IMPLEMENTATION STEPS:

1. Plan Management Team meet to identify the areas to include in the new zoning overlay district
2. Plan Management Team discuss update with Orangetown Planning and Zoning Boards
3. Apply for grant funding
4. Develop a committee to work on the creation of the new overlay district
5. Hire a consultant to field test the critical area boundaries and assist with determining which standards to include in the overlay district
6. Discuss and determine which standards to include

7. Update the Town Code with the new overlay district
8. Develop informational materials on the update that can be distributed to the public via social media, informational mailings, web postings, newspaper postings, public meetings, or workshops.
9. Distribute materials to the Town

Project Profile 5: Host and Maintain Source Water Mapping

TARGETED POTENTIAL CONTAMINANT SOURCE: Any Unwanted Contamination of Source Water in Critical Areas

Source water maps will be hosted and maintained by Orangetown moving forward, allowing for ease of access to the potential contaminant source database and the ability to update maps as needed. Future updates to the maps will enable Orangetown to adjust and respond to any emerging contaminant sources.

Source water maps are recommended to be converted to an online format so that the maps can be easily viewed and digested by all audiences.

GOALS AND PRIORITIES:

- Mange source water and critical area potential contaminant sources
- Continue to adapt to a changing landscape

Priority Level: Low

SUMMARY OF PROTECTION AND MANAGEMENT METHODS:
Methods to reduce the risk and mitigate the threat include:

- Continue to keep track of identified and emerging contaminant sources
- Host source water maps in a format that is accessible to the community

POTENTIAL COSTS:
Estimated Costs: $20,000
Potential costs include staff time to set up the source water maps in the mapping platform, staff time to maintain the database and answer any inquiries, staff time to update the source water maps as needed with additional contaminant sources. Costs also include annual fees to use and maintain the software where the data is housed.

Cost Classification: Medium

POTENTIAL FUNDING SOURCES:

- Town of Orangetown

POTENTIAL PARTNERSHIPS - PEOPLE AND AGENCIES INVOLVED:

- Town of Orangetown
- Plan Management Team

SUGGESTED TIMELINE:
Short-term: Approximately 1 year for planning and data transfer
Ongoing: Continuous hosting and updating of the database

POTENTIAL BARRIERS:

- Identifying which platform to host the maps on
- Managing the cost of hosting the data

- Identifying staff member(s) to maintain and update the database

IMPLEMENTATION STEPS:

1. Plan Management Team and Town of Orangetown obtain source water map data from HVRC
2. Plan Management Team and Town of Orangetown identify the platform in which to host the maps
3. Determine where the hosted maps and database will be listed
4. Plan Management Team and/or Town of Orangetown staff member upload data into the mapping platform and develop maps
5. Determine who will be responsible for maintaining the database and what sort of access will be given to the general public
6. Determine a schedule for updating the database and maps
7. Publish the maps