Drinking Water Source Protection Program

Cayuga Lake Watershed Network Fall Community Conference, December 4, 2023

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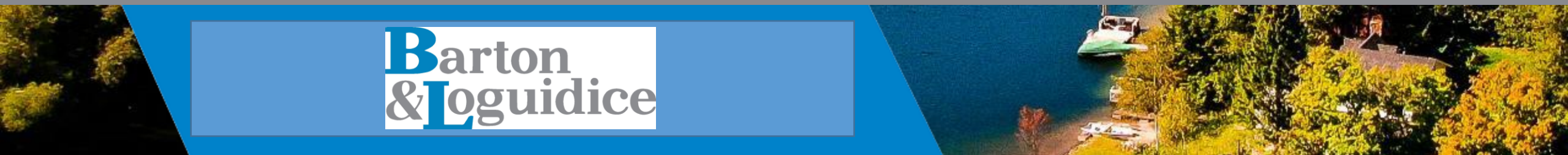
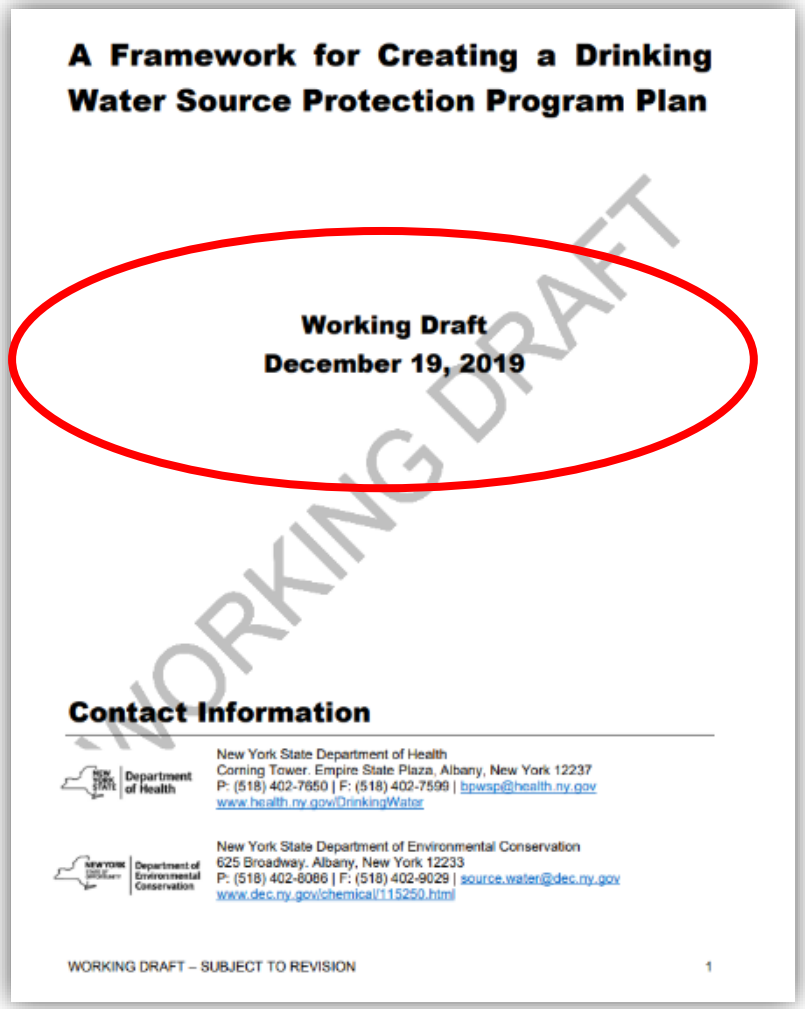
Barton & Loguidice



Presentation Outline

1. What is the DWSP2?
2. Who is it for?
3. What is the framework?
4. How is it implemented?
5. How can my community be involved?

Drinking Water Source Protection Program (DWSP2)



A Framework for Creating a Drinking Water Source Protection Program Plan

Working Draft
December 19, 2019

WORKING DRAFT

Contact Information

New York State Department of Health
Corning Tower. Empire State Plaza, Albany, New York 12237
P: (518) 402-7650 | F: (518) 402-7599 | bpwsp@health.ny.gov
www.health.ny.gov/DrinkingWater

New York State Department of Environmental Conservation
625 Broadway. Albany, New York 12233
P: (518) 402-8086 | F: (518) 402-9029 | source.water@dec.ny.gov
www.dec.ny.gov/chemical/115250.html

WORKING DRAFT – SUBJECT TO REVISION 1

- Safe Drinking Water Act (1996)
  - required state to evaluate source water
  - SWAP reports by the NYSDOH
  - "Top down" statewide assessment of public water supplies **did not lead to local protection**
- DWSP2 Framework (2017)
  - "Bottom up" voluntary program with focus on local stakeholders
  - State funding for Technical Advisor to develop Plan
  - City of Ithaca awarded funds in 1st round

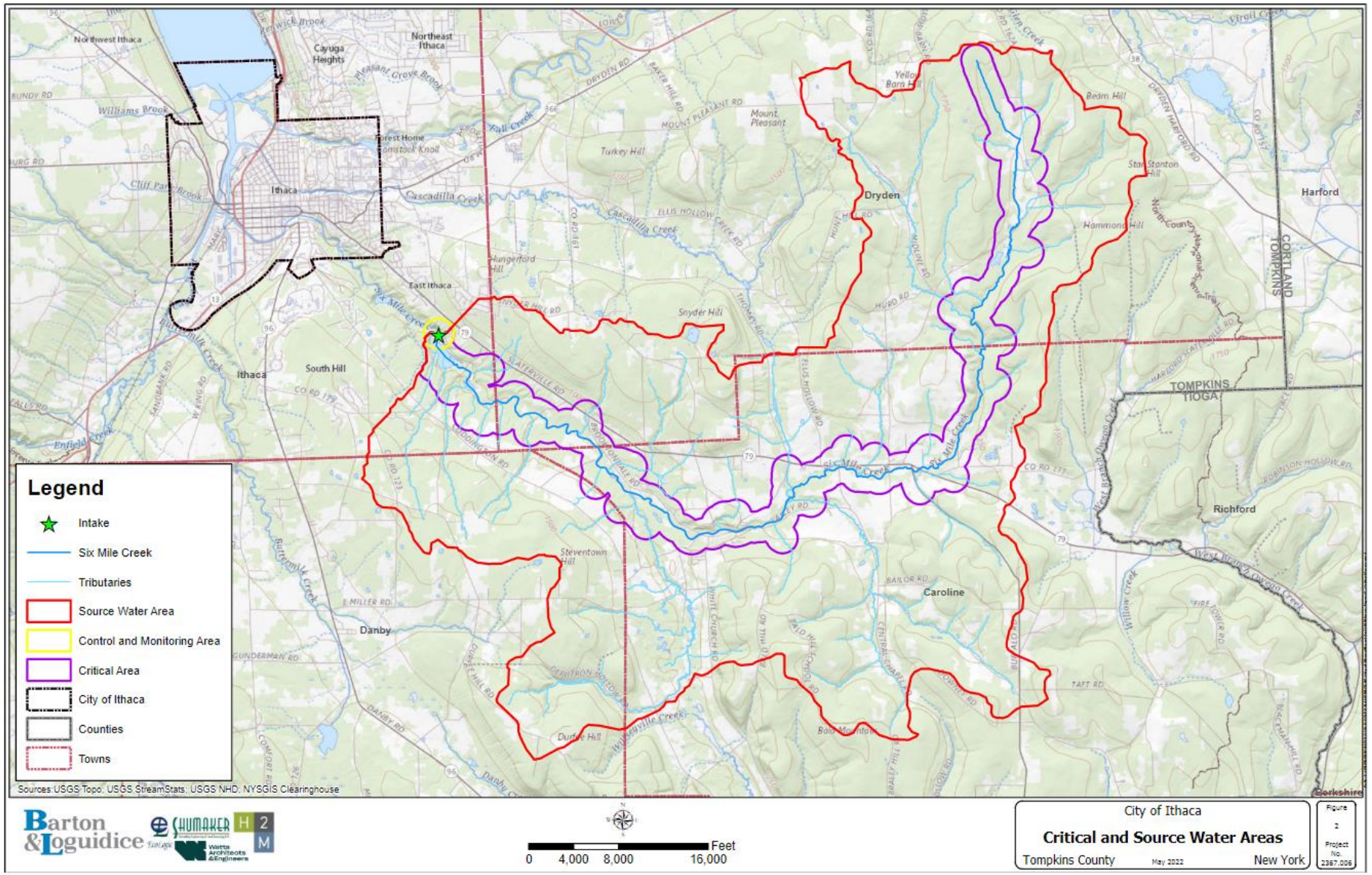
Who is DWSP2 for?

- Small, Medium, Large Public Water Supplies
- Rural and urban communities
- Public water supplies who **don't have updated maps**
- Municipalities who have:
  - Groundwater, surface water, or both
  - **Limited staff capacity**
  - A source within or **outside of their administrative boundaries**
  - **Disadvantaged** communities

DWSP2 Framework's Key Components

A. Prepare source water map
B. Form stakeholder group
C. Formulate the vision and goals
D. Inventory potential contaminant sources
E. Complete GIS mapping
F. Identify protection strategies
G. Develop implementation timeline
H. Finalize plan

A. Source Water Area Map



B. Stakeholder Group

City of Ithaca DWSP2:

City of Ithaca (City Council, Planning, Water Treatment Plant, Department of Public Works)
Tompkins County Department of Health
Town of Caroline
Finger Lakes Land Trust
Tompkins County Soil and Water Conservation District
Town of Dryden
Agricultural Representatives
Tompkins County Planning

C. Vision and Goals

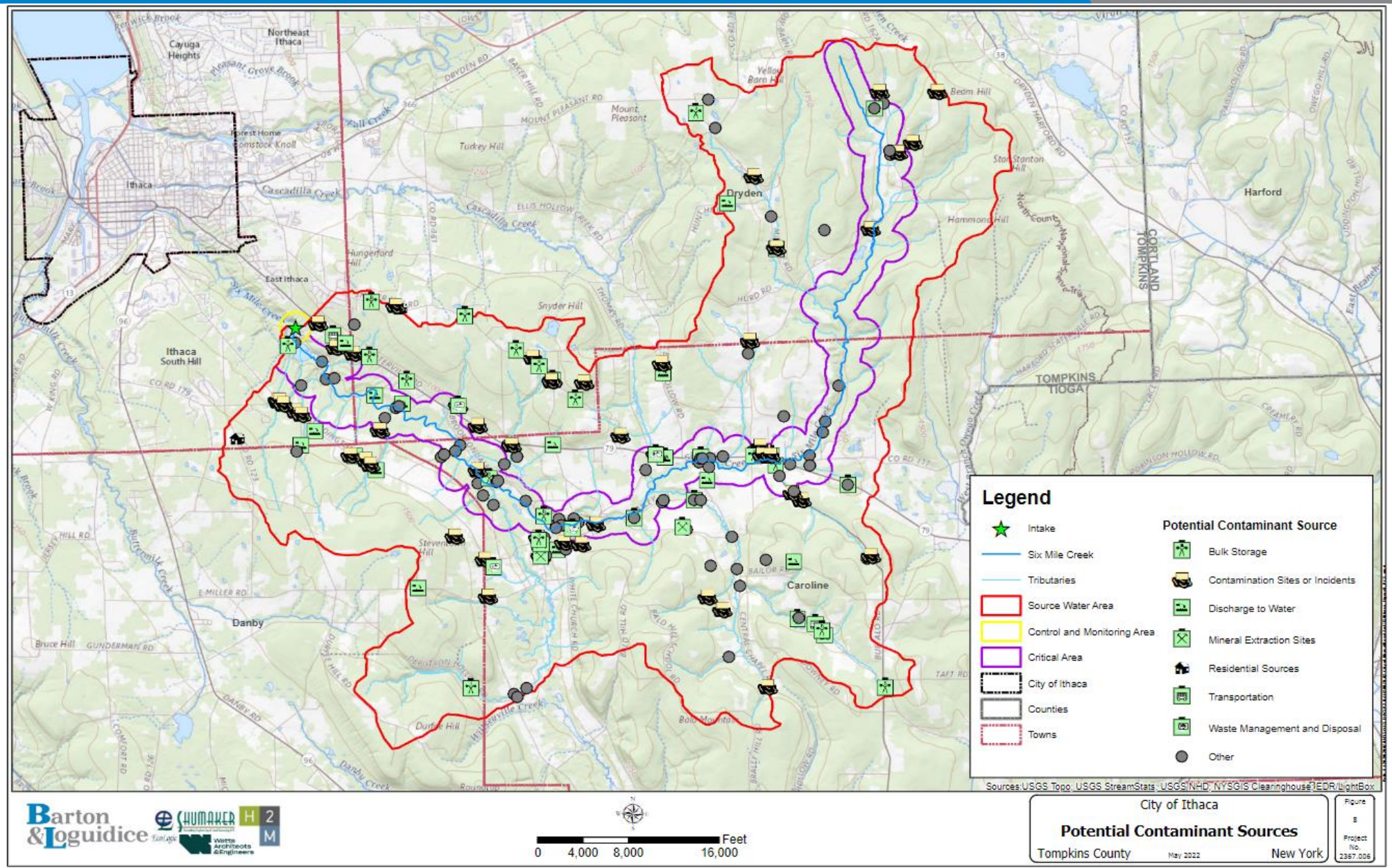
City of Ithaca DWSP2

Goal #1	Protect public health
Goal #2	Address existing water quality issues, including taste
Goal #3	Evaluate current land use and prepare for future land use
Goal #4	Create long-lasting partnerships
Goal #5	Early detection and rapid response to invasive species
Goal #6	Avoid treatment costs or the need to find a new supply

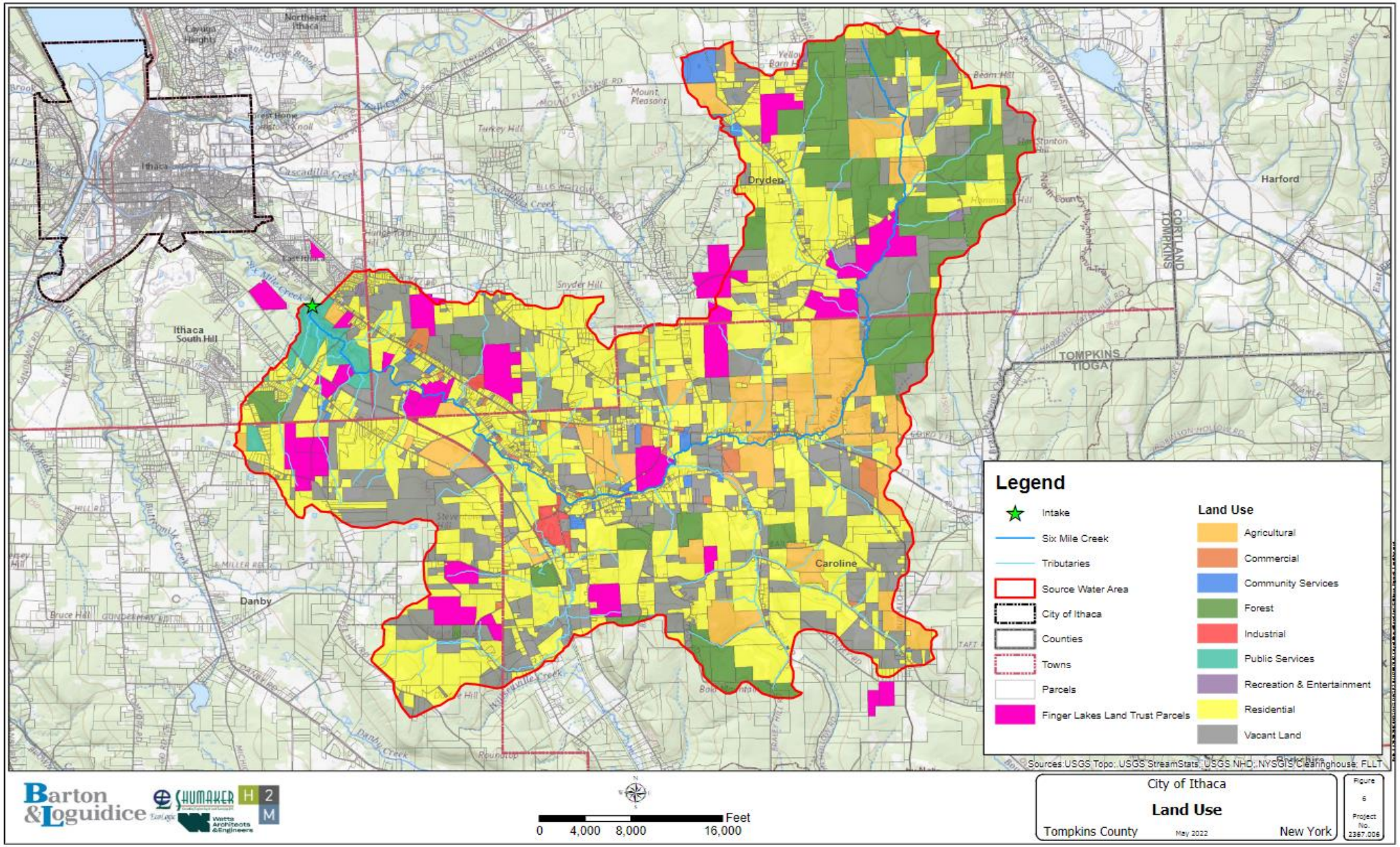
Vision

*"In collaboration with **neighboring municipalities** and our broad range of **community stakeholders**, the City of Ithaca commits to implementing effective measures for **protection and management** of the Six Mile Creek watershed along with **proactive measures for maintenance and surveillance** of the drinking water reservoir. These collective actions are intended to maintain the City's public water supply as a reliable and **cost-effective source** of excellent **quality potable water** that meets the **highest public health standards**"*

D. Inventory Contaminant Sources



E. Complete Mapping (e.g., Land Use)



F. Protection Strategies

1 Erosion and Sediment Control in the Critical Area

What is the Threat?

- Erosion and Sedimentation: Soil that washes into the drinking water containing contaminants affecting water quality and quantity.

What is the Goal?

- To reduce these impacts by stabilizing soils with vegetation and slowing down rainwater runoff.

2 New Development within the Source Water Area

What is the Threat?

- Impacts on the natural flow of rainwater runoff which leads to higher flows and an increase in pollutants the waler carries.

What is the Goal?

- Protect the drinking water source & areas surrounding through zoning & intermunicipal coordination.

3 Ditch Management and Transportation Related Runoff in the Critical Area

What is the Threat?

- Invasive species, pollutants, and erosion.
- Chemical, physical or biological contamination from spills.

What is the Goal?

- To reduce the likelihood of spills and deicing materials entering the waterbody.
- Hydrologic Resilience*

4 Nutrient Loading into the Creek/Reservoir within the Critical Area

What is the Threat?

- Overland flow brings excess nutrients into the waterbody which can cause harmful algal blooms.

What is the Goal?

- Reduce Overland flow through vegetative riparian buffers, reduce fertilizer application, and limit harmful algal bloom formation.

F. Protection Strategies (cont.)

5 Invasive Species

What is the Threat?

- Potential extinction of native plants and species.

What is the Goal?

- Mitigate Hemlock Wooly Adelgid, Japanese knotweed, water chestnuts and re-establish native vegetation.

6 Herbicides and Pesticides in the Critical Area

What is the Threat?

- Overland flow brings excess chemicals into the creek and reservoir which can contaminate soil, water, and non-target plants as well as be toxic to other organisms.

What is the Goal?

- Reduce the amount of herbicides and pesticides applied in the source water area to decrease the threat and help inhibit the formation of harmful algal blooms.

7 Management of Regulated Potential Contaminant Sources

What is the Threat?

- Chemical, biological or physical contaminants from spills, leaks or O&M activities entering the waterbody.

What is the Goal?

- Enhance communication with specific facilities and DEC staff to understand the risk and response efforts.

8 Vulnerability to Drought

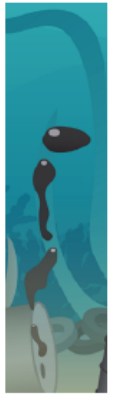
What is the Threat?

- Increases the risk for erosion and affects water quality.

What is the Goal?

- Reduce the risk of erosion and sedimentation.
- Hydrologic Resilience*

9 Emerging Contaminants



What is the Threat?

- Contaminants entering the waterbody affecting water quality.

What is the Goal?

- Protect the drinking water source from new or increased sources of contaminants.

* **Hydrologic Resilience:** Absorb disturbance and maintain or quickly regain hydrologic function.

G. Implementation Timeline

Implementation Project #1: Stormwater Protection for Solar Sites

Priority Issue	Goal	Protection Method and/or Management Method	Timeline
Erosion & Sediment Control in the Critical Area	Increase infiltration, decrease the velocity and erosive potential of overland flow, and mitigate erosion from exposed soils	Planting Vegetation and Creating Riparian Buffers	~3 years
		Winter cover crops	~3 years
		Create an erosion and sediment control plan	~3 months
		Create a buffer team to restore and create long-term functionality of the riparian areas.	~3 years
	Hydrologic Resilience	Partnership/Intermunicipal Agreement with the Town of Caroline and the Town of Dryden	1 year for plan, ongoing efforts
	Reduce the release of Fe and Mn from sediment	Install soil erosion control systems (examples: WASCOBs, bioswales, vegetated filter strips)	~1 year
		Dredge the reservoir to increase the depth and reduce the extent of Iron & Manganese release	~1 year
		Partnership/Intermunicipal Agreement with the Town of Caroline and the Town of Dryden	Ongoing
	Stabilize slopes, focus on areas with Hemlock Trees and Japanese knotweed	Treating, Monitoring, Inspecting, and Reporting HWA and Japanese knotweed	Ongoing, Concentrated efforts in three years.
		Educate waterfront property landowners on erosion and sediment control and how they can help: -How to manage Hemlock Woolly Adelgid and Japanese knotweed -pamphlet, newsletter, video, public meeting, -educate children in schools	Ongoing, Concentrated efforts in three months.

G. Implementation Timeline (cont.)

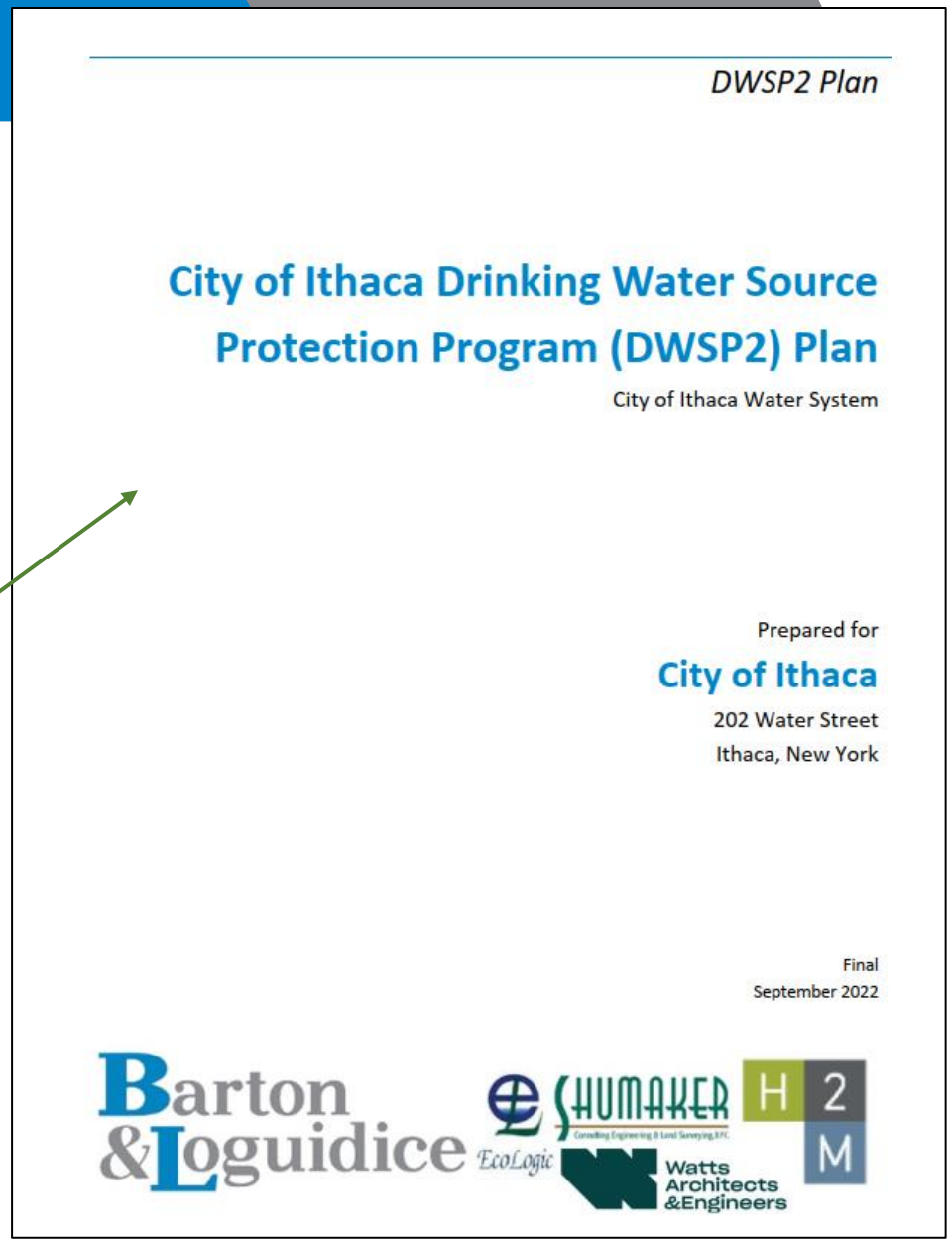
Priority Issue	Goal	Protection Method and/or Management Method	Timeline
		Designation of CEA's, other natural areas	~1 year
		Consideration of zoning amendments, changing zoning laws	~1-2 years
		Explore the possibily of a Shared Code Officer with Caroline and Danby	~3 months
New Development within the Source Water Area	Protect the drinking water source and the area around the drinking water source through zoning amendments. Zoning Coordination with the Town of Caroline	Future Land Plans: (focus on the lands that are a high priority/will contribute the most to the source water) -Conservation subdivisions -Critical environmental areas, check in with Cornell Botanic Gardens for overlap -Land acquisition, easements, purchase of development rights -Zoning restrictions and enforcement -planning and site development -Go after WQIP source water protection grants -secure areas where Ithaca doesn't want residential developement (prioirty areas),	~5 years, Ongoing

Implementation Project #2: Build-out Analysis (awarded NY Sea Grant)

Implementation Project #3: Comprehensive Stream Corridor Assessment (pending CFA Grant)

H. Adopt Final Plan

Reference projects in the plan for more competitive grant applications!



Implementation Phase

- Designate Plan Management Team (PMT) responsible for:
  - Implementation Timeline and Actions
  - Annual progress report to share with the community and DEC/DOH
  - Revise plan on a regular basis (5 years)

City of Ithaca DWSP2 Plan Management Team:	
City of Ithaca Common Council	City Water & Sewer Engineer
Town of Caroline, Dryden and Danby Representatives	Tompkins County Dept of Planning and Sustainability
Chief Water Plant Operator	Tompkins County Soil & Water Conservation District
Watershed Coordinator	Tompkins County Department of Health
Finger Lakes Land Trust	

Implementation Phase (cont.)

- State funding for Technical Advisor to assist implementation

City of Ithaca Implementation Actions

- Develop model solar law
- Write grant applications:
  - NY Seaway Grant: Build-out Analysis
  - Non-Ag Nonpoint Source (NPS) Grant: Stream Corridor Assessment

Implementation Project #1 – Model Solar Law

1. Gap Analysis of protections within existing laws
2. Draft example clauses for stormwater protection
3. Meet with municipal representatives
4. Recommend options to fit within the context of existing local laws

Example Stormwater Protections for Model Solar Law

A. Permitted locations.

i. Overlay districts for source water protection area, waterways/wetlands, steep slopes with additional protections

ii. Floating Solar Overlay District with criteria for rezoning to solar

B. Site Plan Review.

Submittal requirements include the following information:

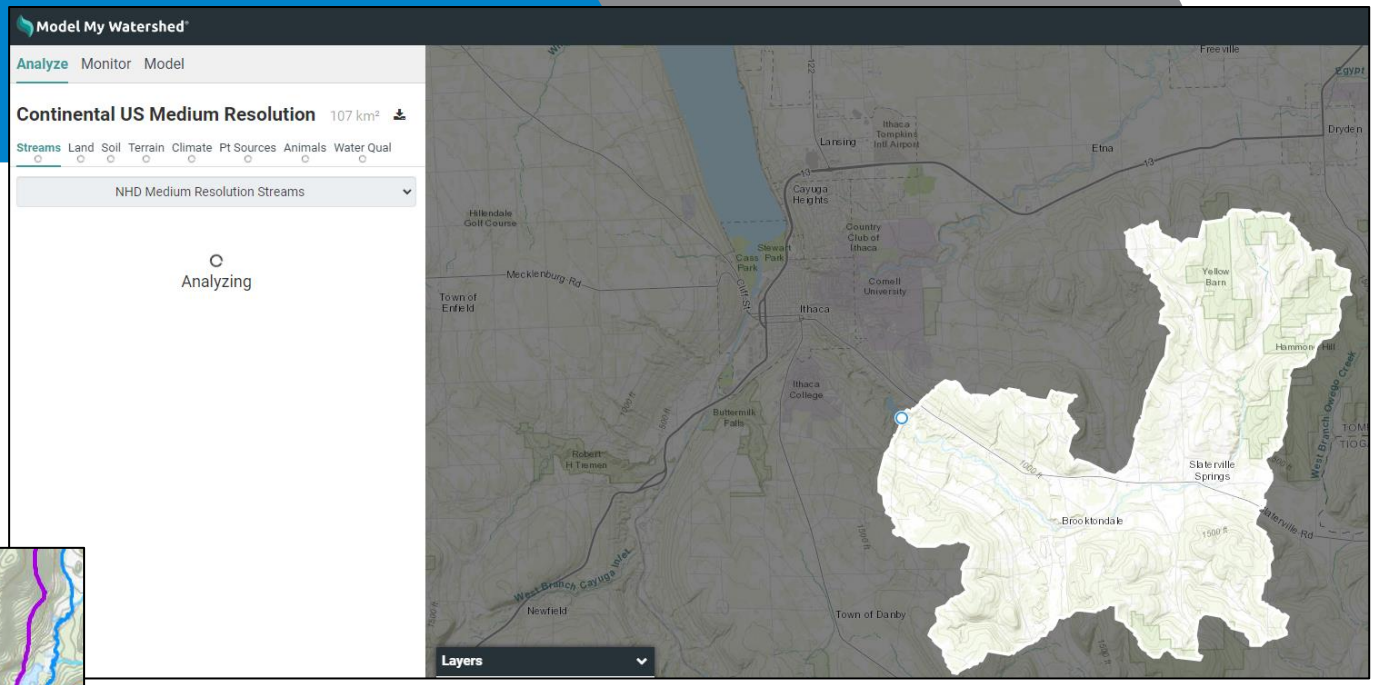
1. Environmental Review
   i. Require alternatives analysis demonstrating that disturbance of environmentally sensitive areas have been avoided

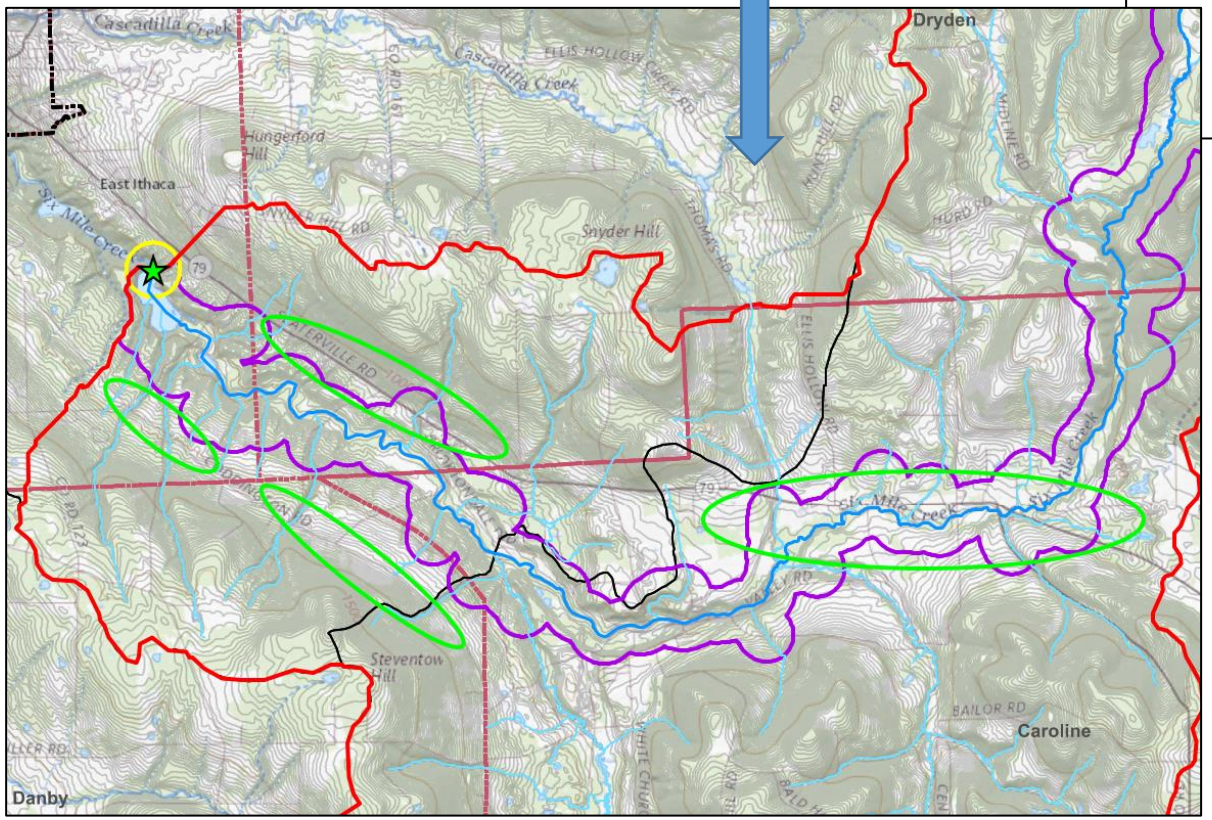
2. Site Plans including, but not limited to:
   i. Existing topography and slopes analysis (greater than 5%, 10%, 15%, 20% and 25%)
   ii. Geotechnical investigation (informs foundation/post design and impacts impervious surface) - require as part of construction documents to be submitted for review in advance of building permit issuance.

3. SWPPP and ESC Plan prepared to meet all current and applicable NYSDEC standards and guidance documents, including:
   i. Winter stabilization plan
   ii. Town (or third party) E&SC inspections at construction milestones
   iii. Limit disturbance to 5-acres (particularly on slopes greater than 15%) and

Implementation Project #2 – Build-out Analysis

1. Literature Review / Data Collection
2. Model Build and Test
3. Define Assessment Areas





4. Establish future land use scenarios
5. Identify feasible land use control scenarios
6. Final recommendations

Implementation Project #3 – Stream Corridor Assessment

NONPOINT SOURCE PLANNING GRANT

NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

Comprehensive Stream Corridor Assessment Study Outline

The following report outline must be used for comprehensive stream corridor assessment studies. The studies must identify areas of erosion across a watershed area. The comprehensive stream corridor study must be completed for a minimum of a HUC 12 size watershed area and must identify and/or prioritize opportunities for streambank stabilization, riparian buffer restoration, floodplain reconnection and/or culvert replacement and repair. Flood risk assessment and modeling may be included as part of the comprehensive study but are not required. Studies should follow the Stream Corridor Assessment Guide. For flood risk assessment and modeling, studies should follow the same outline as studies completed under the Resilient NY Program.

Required Elements

I. **Cover Page** (project title, owner, prepared by, and date)

II. **Executive Summary**: Overview of the assessments purpose, the assessment location, HUC 12 name, and the receiving body of water

III. **Projective Objectives:** Describe goals for stream corridor assessment. Indicate whether the elements are a portion of a larger project. Include a project background description and history/problem statement.

IV. **Existing Conditions:** Include an inventory of the stream corridor. Information collected must include but is not limited to:

1) **Geospatial Information**

a. Assessment location
b. HUC 12 name
c. Nearby gage stations (if applicable)
d. Receiving body of water

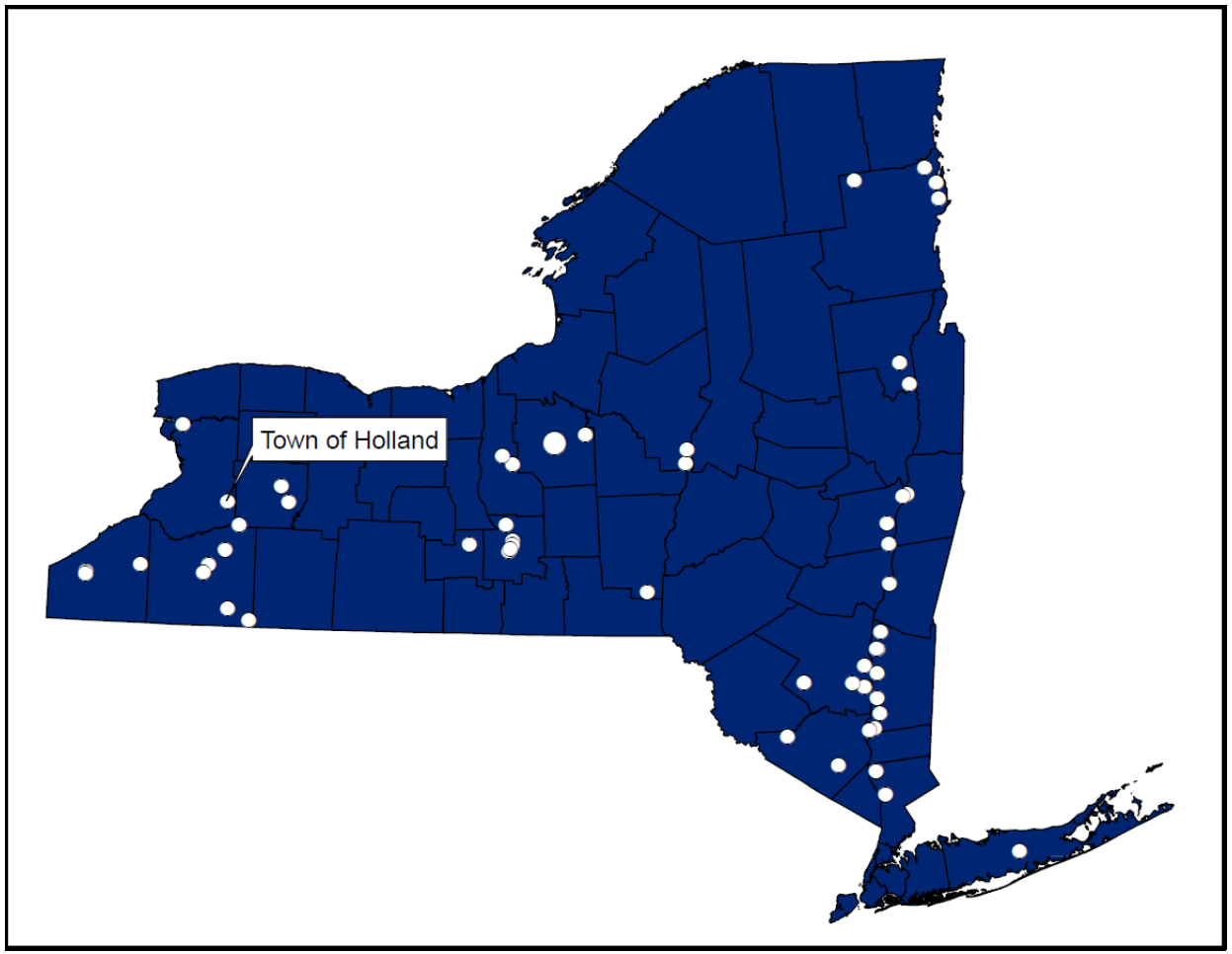
2) **Stream Channel Data**

a. Bankfull width
b. Bankfull depth
c. Floodplain Width
d. Any stream channel obstructions (e.g. culverts, bridges, crossings, gravel, woody debris)
e. Channel slope
f. Channel pattern
g. Stream channel avulsions
h. Stream channel habitat

- Potential Project
- CFA Awards anticipated end 2023 / early 2024

Implementation Example (Town of Holland)

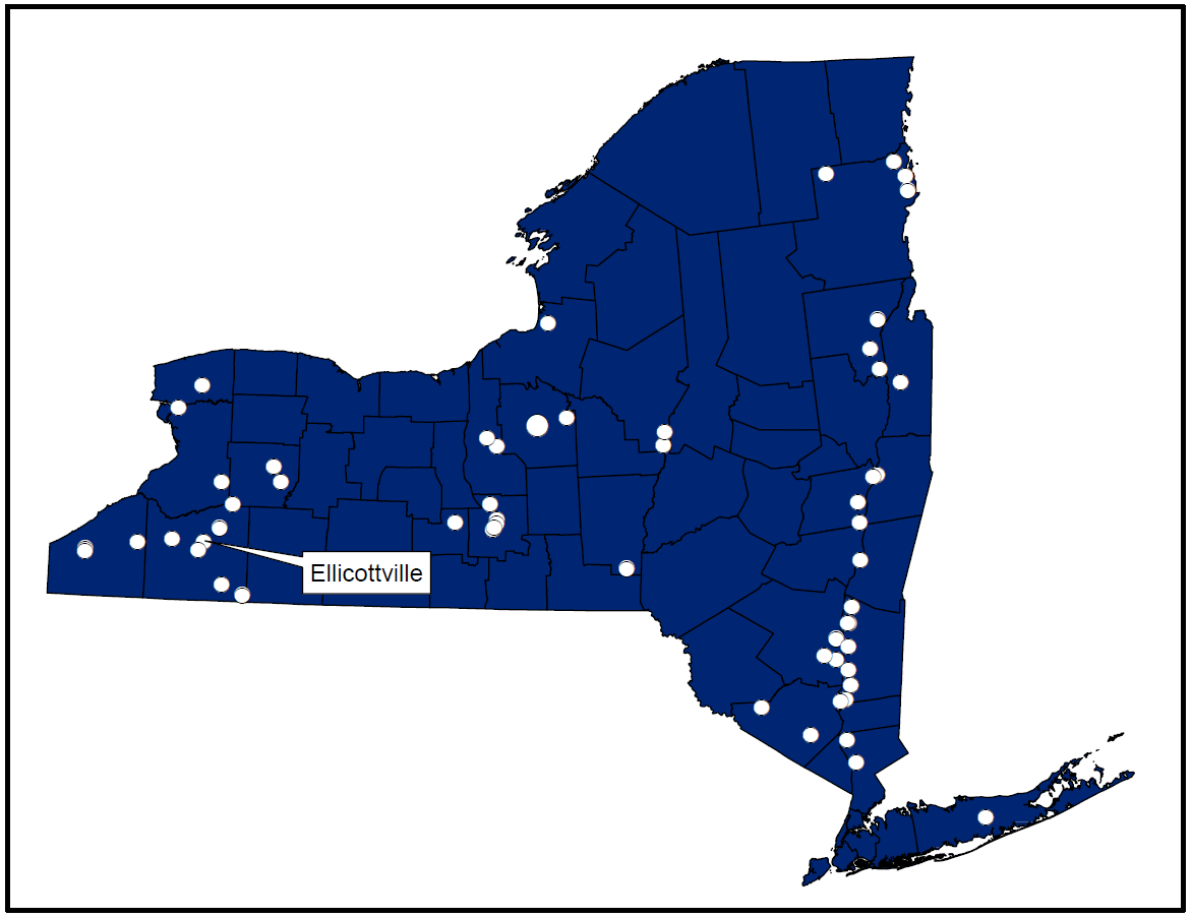
Non-regulatory Tool: Local Law Gap Analysis



Goal: Identify where local law could be strengthened to protect the source water from potential contaminants.

Implementation Example (Town and Village of Ellicottville)

Outreach and Education: Webpage



Goal: An educational resource to serve as an engagement tool for the community.

Future Rounds of DWSP2

- To be eligible for DWSP2 applicants must have:
  1. Active community water supply, as defined by NYS DOH
  2. Need for **source water protection (not infrastructure improvements)**
  3. Desire to protect community water supply
  4. More than one municipality may apply together with shared source water

- Round 2 closed November 2023
- Annual enrollment anticipated

DWSP2 Application Form

- Application Instructions: https://www.dec.ny.gov/docs/water_pdf/dwsp2.app.guide.pdf

- Access application form online (requires creation of NY.gov Account)

Questions?

Please reach out to Rebecca Minas at rminas@bartonandloguidice.com

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