Exhibit 5

Waterbodies of Concern

Rev 1: 2023 SWMP
Rev Date: 05/08/23
Rev By: EPW

The Town of North Greenbush has worked with The Laberge Group to identify Waterbodies of Concern and Pollutants of Concern that exist throughout the Town. Each of these items, while addressed in separate Exhibits, are closely related, particularly the way in which the Pollutants of Concern affect not only Waterbodies of Concern, but water quality and environmental and public health in general. This Exhibit will concentrate mainly on Waterbodies of Concern, but will slightly reiterate some of the discussion regarding Pollutants of Concern, which are more thoroughly discussed in Exhibit 2.

US EPA Stormwater Background

ñStormwater runoff is generated from rain and snowmelt events that flow over land or impervious surfaces, such as paved streets, parking lots, and building rooftops, and does not soak into the ground. The runoff picks up pollutants like trash, chemicals, oils, and dirt/sediment that can harm our rivers, streams, lakes, and coastal waters. To protect these resources, communities, construction companies, industries, and others, use stormwater controls, known as Best Management Practices (BMPs). These BMPs filter out pollutants and/or prevent pollution by controlling it at its source.ò

ñPopulation growth and the development of urban/urbanized areas are major contributors to the amount of pollutants in the runoff as well as the volume and rate of runoff from impervious surfaces. Together, they can cause changes in hydrology and water quality that result in habitat modification and loss, increased flooding, decreased aquatic biological diversity, and increased sedimentation and erosion. The benefits of effective stormwater runoff management can include:

- Protection of wetlands and aquatic ecosystems,
- Improved quality of receiving waterbodies,
- Conservation of water resources,
- Protection of public health, and
- Flood control.

Traditional stormwater management approaches that rely on peak flow storage have generally not targeted pollutant reduction and can exacerbate problems associated with changes in hydrology and hydraulics.ò

Waterbodies of Concern (WOCs)

The Town watersheds, waterbodies, land uses and Pollutants of Concern (POCs) have been identified based upon a worksheet type analysis. The Town has numerous small streams and water bodies, which drain to primarily four major waterbodies/streams that include:

- Mill Creek:
    - Mill Creek is located within the Wynants Kill watershed.
    - This watershed makes up approximately 12% of the MS4.

- Snyderôs Lake:

    - Snyderôs Lake is located within the Wynants Kill watershed. The lake is currently included on the NYS 2006 Section 303(d) List of Impaired Waters as a Total Maximum Daily Load (TMDL) designated waterway.
    - This watershed makes up approximately 6% of the MS4.

- Wynants Kill:

    - The Wynants Kill flows to the Hudson River collecting both the Mill Creek and Snyderôs Lake watershed discharges.
    - This watershed makes up approximately 53% of the MS4.

- Other Minor Tributaries to the Hudson River:

    - These un-named tributaries flow to the Hudson River.
    - The combined watershed of these un-named tributaries makes up approximately 35% of the MS4.

Pollutants of Concern and Associated Watersheds

The Pollutants of Concern identified in Exhibit 2 affect the Watersheds and Waterbodies of Concern within the Town to varying degrees. The following is a brief outline and summary table correlating the Townôs Waterbodies of Concern and Pollutants of Concern.

- Bacteria and Viruses:

    Potential sources of stormwater contamination include:

    - Animal waste (pets and wildfowl);
    - Agriculture site runoff (livestock waste); and
    - Septic systems (improperly functioning systems and system breakouts of untreated effluent).

    Bacteria and viruses are a concern in the watersheds for:

    - Mill Creek;
    - Wynants Kill; and
    - Tributaries to the Hudson River.

- Gross Solids:

    Potential sources of gross solids in stormwater include:

    - Improper disposal of garbage;
    - Landscape maintenance;

- Animal waste; and
- Street litter.

Gross solids are a concern in the watersheds for:

- Mill Creek;
- Wynants Kill; and
- Tributaries to the Hudson River.

- Nutrients:

  Potential sources of phosphorus and nitrogen (nutrients) in stormwater include:

  - Chemical fertilizers (residential, commercial, municipal and agricultural applications);
  - Detergents (septic systems, car washing);
  - Animal waste (pet waste, waterfowl; agricultural land use runoff);
  - Soil erosion (phosphorus resides naturally in soils); and
  - Atmospheric deposition.

  Nutrients are a concern in the watersheds for:

  - Mill Creek;
  - Wynants Kill;
  - Snyderõs Lake (part of the Wynants Kill but of particular concern since a TMDL); and
  - Tributaries to the Hudson River.

- Pesticides and Herbicides:

  Potential sources of pesticides and herbicides in stormwater include:

  - Chemicals (residential, commercial, municipal and agricultural applications); and
  - Soil erosion.

  Pesticides and herbicides are a concern in the watersheds for: :

  - Mill Creek;
  - Wynants Kill;
  - Snyderõs Lake; and
  - Tributaries to the Hudson River.

- Silt and Sediment:

  Potential sources of silt and sediment in stormwater include:

- Soil erosion;
- Road maintenance (winter sanding, regrading, etc.)
- Construction activities;
- Drainage channel erosion; and
- Atmospheric deposition.

Silts and sediments are a concern in the watersheds for:

- Mill Creek;
- Wynants Kill;
- Snyderôs Lake; and
- Tributaries to the Hudson River.

- Pools and Fountains:

  Potential sources of Pool and Fountain Pollution in stormwater include:

  - Pool filter cleaning activities;
  - Acid wash pool cleaning; and
  - Discharge of chlorinated water during draining.

  Pool and Fountain Pollution is applicable to the following watersheds:

  - Mill Creek;
  - Wynants Kill;
  - Snyderôs Lake; and
  - Tributaries to the Hudson River.

- Organics:

  Potential sources of Organics in stormwater include:

  - Deliberate dumping of chemicals;
  - Improper storage of chemicals; and
  - Improper disposal of chemicals.

  Organics are applicable to the following watershed:

  - Mill Creek;
  - Wynants Kill;
  - Tributaries to the Hudson River.

- Oil and Grease:

  Potential sources of Oil and Grease in stormwater include:

- Poorly maintained vehicles;
- Improper disposal of cooking oil; and
- Spills on impervious areas.

Oil and Grease are a concern in the watersheds for:

- Mill Creek;
- Wynants Kill;
- Tributaries to the Hudson River.

Watershed/Main Tributary to Hudson	Bacteria & Viruses	Gross Solids	Nutrients	Pesticides and Herbicides	Silt and Sediment	Pools (Discharge Water)	Organics	Oil and Grease
Mill Creek	X	X	X	X	X	X	X	X
Wynants Kill	X	X	X	X	X	X	X	X
Snyderôs Lake			X	X	X	X		
Unnamed Tributaries to the Hudson River	X	X	X	X	X	X	X	X

Table 1: Town Watersheds and Associated Pollutants of Concern

Best Management Practices

Promoting the health of Waterbodies of Concern can be achieved through the implementation of Best Management Practices (BMPs) on a Town-wide basis. The BMPs currently in use or being updated to address Waterbodies of Concern, and all other waters within the Town, include:

- A Public Education and Outreach Program which discusses the components of stormwater management and the steps that residents, businesses and municipal personnel can take to improve the quality of all bodies of water within the Town.

- A reduction in Pollutants of Concern as discussed in Exhibit 2.

- The implementation of the Illicit Discharge Detection and Elimination Program as discussed in Exhibit 12.

- The regular monitoring of Waterbodies of Concern. The Town does not currently have a specific monitoring and testing program for Waterbodies of Concern, with the exception of Snyders Lake as discussed in Exhibit 6. Until such a program is developed and implemented, the Town will rely on input from residents and municipal personal, most notably in the form observations and the reporting of signs of visible distress within all waterbodies, including Waterbodies of Concern. The Town has developed a Public Concerns Investigation Procedure, which is discussed in detail in Exhibit 6, and will use this tool to record and investigate water quality issues observed and reported by Town residents, business owners, and municipal employees.

Waterbodies of Concern Outreach Audience

Given the number of watersheds (or sub-watersheds) within the Town and the reliance on people within the Town to assist with implementing the BMPs, the Town will target the following audiences:

- Residents, and particularly those individuals who live in close proximity to Waterbodies of Concern;
- Residential developments / Home Owners - Town-wide;
- Commercial businesses and restaurants Town-wide;
- New Construction & landscaping operations Town-wide; and
- Agricultural land use areas - Town-wide.

The MS4 General Permit, MCM 1: Public Education and Outreach, requires outreach to the general public and specific audiences to provide education on:

- The impacts of stormwater discharges on waterbodies;
- WOCs and their associated POCs; and
- Steps that contributors can take to reduce pollutants in stormwater runoff and improve the quality of WOCs.

Outreach efforts will be recorded periodically, assessed, and modified as needed with new, measurable goals established as necessary.

Measurable Goals

The Measurable Goals are applicable on a Town-wide basis. The following are measurable goals that the Town will work toward incorporating in a SWMP Plan update:

- Distribute handouts with information on WOCs and POCs to Town residents. Record the quantity of handouts distributed.
- Track Public Concerns submitted to the Town Stormwater Management Officer.
- Post or otherwise make available stormwater educational materials in other public places.
- Continue with providing educational stormwater pamphlets in routine Town-wide mailings or submitting editorials to local newspapers.

Town of North Greenbush

Rensselaer County

SPDES ID: NYR 20A191

TARGET AUDIENCE ANALYSIS WORKSHEET

A. Identified Watersheds within the Town of North Greenbush

1. Mill Creek
2. Wynants Kill (Lower)
3. Snyderôs Lake
4. Tributaries to the Hudson River

MCM 1: Identify Pollutants of Concern (POCs) and Develop and Implement a Public Educational and Outreach Program to describe to the general public and target audiences: (i.) the impacts of *stormwater discharges* on waterbodies; (ii.) *POC*s and their sources; (iii.) steps that contributors of these pollutants can take to reduce pollutants in *stormwater* runoff; and (iv.) steps that contributors of non-*stormwater discharges* can take to reduce pollutants

- Record, periodically assess, and modify as needed, *measurable goals*;
- Select and implement appropriate education and outreach *activities* and *measurable goals* to ensure the reduction of all *POC*s in *stormwater discharges* to the Maximum Extent Possible (*MEP*.)

B. List of Waterbodies of Concern (waterbodies within the identified watersheds) & their best use class

- Use the NYS DEC Waterbody Inventory/Priority Waterbodies List
- Use the NYSDEC online Environmental Resource Mapper to Identify the Best Use Class.

Waterbody	***Best Use Class***
1. Mill Creek	C (TS) = Non Contact Recreation / Trout Spawning
2. Wynants Kill	C (T) = Non Contact Recreation / Trout Habitat
3. Snyderôs Lake	B = Public Swimming & Contact Recreation
4. Tributaries to the Hudson River	C = Non Contact Recreation (fishing)

New York waterbodies are assigned a "best use" classification.
Best use classifications are:

- Class AA and A -- drinking water
- Class B -- public swimming and contact recreation activities
- Class C -- fishing and non-contact activities
- Class D -- does not support any of the uses listed above (this classification is rarely used)

Waterbodies with AA, A, B and C classifications may also have "T" or "TS" classifications, meaning they support trout populations or trout spawning.

C. Further refine the waterbodies of concern by listing them under the best use and indicate if they are Impaired with minor impacts, threatened, have possible threats or unknown or un-assessed.

- Use NYS DEC Water Inventory (WI) & Priority Waterbody List (PWL)

Additional Refinement of Waterbodies Best Use (Waterbody: WI/PWL classification)

A = Drinking	A (T) = Drinking Trout Habitat	A (TS) = Drinking /Trout Spawning Habitat	B = Contact Recreation (Swimming)	B (T) = Contact Recreation /Trout Habitat	C = Non Contact Recreation (Fishing)	C (T) = Non Contact Recreation (Trout Habitat)	C (TS) = Non Contact Recreation (Trout Spawning Habitat)	D = Lowest Classification
			Snyder's Lake Category: Minor impacts		**Tributaries to the Hudson River** Category: Un-assessed	**Wynants Kill** Category: Minor impacts	**Mill Creek** Category: No known impact	
			Uses Impacted: Recreation		**Uses Impacted:** None listed	**Uses Impacted:** Aquatic life	**Uses Impacted:** No use impairment	
			Pollutants: Algal/weed growth, nutrients (phosphorous)		**Pollutants:** None listed	**Pollutants:** Nutrients, silt/sediment, metals, priority organics, on-site septic systems, streambank erosion, sediment	**Pollutants:** None listed	
			Likely Pollutant Source: Nutrient recycling		**Likely Pollutant Source:** None listed	**Likely Pollutant Source:** Urban/storm runoff	**Likely Pollutant Source:** N/A	

Town of North Greenbush

Rensselaer County

SPDES ID: NYR 20A191

Pollutants of Concern (POC) Worksheet

Name of Watershed: Mill Creek - Hudson River

Total Area of MS4: 19.5 Sq. Mi. Watershed Area = 2.3 Sq. Mi. 12 % of MS4

	Built Areas	% of Land Use Within Watershed	Possible POCs	Target Audience
X	Impervious (Paths only: Roads, Sidewalks, Parking Lots, Driveways, etc.)	1%	S	Town Streets
	Residential (Large lots/1 single family per 1 to 5 acres)	%		
X	Residential (Small lots/1 single family/duplex per 1/8 to 1 acre)	6.49%	PF, S, BV, N	Pool Owners, Contractors, Homes with Septic Systems
	Residential (Apts/multi family 1 building per 1/8 to 1 acre)	%		
X	Retail and/or Mixed Use	0.01%	GS, O, OG	Businesses, Restaurants
	Industrial	%		
	Office Professional/Office Space/Schools/Universities	%		
	Green Areas			
	Man-made:			
X	Lawns/turf	5.93%	PH, N	Homeowners
	Golf Courses/Parks			
	Urban Tree Canopy	%		
X	Agriculture, Livestock, Nurseries, Tree Farms	41.45%	PH, N, BV	Farms
	Stormwater Management	%		
	Natural:			
X	Forest	33.99%		
X	Grassland	0.24%		
X	Wetlands	10.61%		
X	Water-Lakes, Ponds, Streams	0.29%		

Measurable Goals for this Watershed

List any Measurable goals to establish that will assist in education for the Target Audience in this Watershed

Measurable Goal 1:	Continue with providing educational stormwater pamphlets in routine Town-wide mailings.
Measurable Goal 2:	Post or otherwise make available stormwater educational materials in other public places.

Pollutants of Concern Table

Likely Pollutant	Prompt Questions	Land Use Category
Bacteria and Viruses (BV)	Septic System Present? Aging Infrastructure? High Concentration of pet waste or goose droppings?	Residential; Lawns/turf; Golf Courses; Livestock
Gross Solids (GS)	Any Restaurants or stores producing trash? High Concentration of poorly maintained dumpsters? Known area for sloppy pick up of trash	Retail
Nutrients (N)	Are there lawns or golf courses using extra fertilizers? Pet Waste? Goose Droppings?	Lawns/Turf; Golf Courses; Agriculture; Office Professional/Office Space/Schools
Organics (O)	Any businesses producing or using paint thinner, solvents, cleaners, etc.	Industrial; Retail
Sediment (S)	Any active construction sites? Parking lots collecting sediments? Catch basins loaded with sediment?	Impervious Pathways; Residential
Pools and Fountains (PF)	High concentration of swimming pools or fountains?	Residential; Parks; Retail
Vectors (V)	Any Stormwater infrastructure with standing water in need of cleaning or maintenance"	Stormwater Management
Thermal Stress (TS)	Are there exposed parking lots or roads near trout streams?	Impervious; Residential; Retail; Industrial
Metals (M)	Any junk/scrap yards or car shops near waterbodies?	Retail; Industrial; Office Professional/Office Space; Residential; Impervious
Pesticides and Herbicides (PH)	High concentration of property owners using lawn care services? Particularly well kept lawns and turf?	Office Professional/Office Space; Residential; Lawns/turf; Golf Courses; Agriculture
Oil and Grease (OG)	High concentration of car repair shops? Food service business or restaurants dumping cooked oil?	Residential; Retail; Impervious

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Town of North Greenbush

Rensselaer County

SPDES ID: NYR 20A191

Pollutants of Concern (POC) Worksheet

Name of Watershed: Wynants Kill – Hudson River

Total Area of MS4: 19.5 Sq. Mi. Watershed Area = 10.4 Sq. Mi. 53 % of MS4

	Built Areas	% of Land Use Within Watershed	Possible POCs	Target Audience
X	Impervious (Paths only: Roads, Sidewalks, Parking Lots, Driveways, etc.)	2%	S	Town Streets
	Residential (Large lots/1 single family per 1 to 5 acres)	%		
X	Residential (Small lots/1 single family/duplex per 1/8 to 1 acre)	15.96%	S, PF, BV, N	Pool Owners, Contractors, Homes with Septic Systems
	Residential (Apts/multi family 1 building per 1/8 to 1 acre)	%		
X	Retail and/or Mixed Use	0.45%	GS, O, OG	Businesses, Restaurants
	Industrial	%		
	Office Professional/Office Space/Schools/Universities	%		
	Green Areas			
	Man-made:			
X	Lawns/turf	11.57%	PH, N	Homeowners
	Golf Courses/Parks	%		
	Urban Tree Canopy	%		
X	Agriculture, Livestock, Nurseries, Tree Farms	17.30%	PH, N, BV	Farms
	Stormwater Management	%		
	Natural:			
X	Forest	39.43%		
X	Grassland	4.92%		
X	Wetlands	6.06%		
X	Water-Lakes, Ponds, Streams	2.34%		

Measurable Goals for this Watershed

List any Measurable goals to establish that will assist in education for the Target Audience in this Watershed

Measurable Goal 1:	Continue with providing educational stormwater pamphlets in routine Town-wide mailings.
Measurable Goal 2:	Post or otherwise make available stormwater educational materials in other public places.

Pollutants of Concern Table

Likely Pollutant	Prompt Questions	Land Use Category
Bacteria and Viruses (BV)	Septic System Present? Aging Infrastructure? High Concentration of pet waste or goose droppings?	Residential; Lawns/turf; Golf Courses; Livestock
Gross Solids (GS)	Any Restaurants or stores producing trash? High Concentration of poorly maintained dumpsters? Known area for sloppy pick up of trash	Retail
Nutrients (N)	Are there lawns or golf courses using extra fertilizers? Pet Waste? Goose Droppings?	Lawns/Turf; Golf Courses; Agriculture; Office Professional/Office Space/Schools
Organics (O)	Any businesses producing or using paint thinner, solvents, cleaners, etc.	Industrial; Retail
Sediment (S)	Any active construction sites? Parking lots collecting sediments? Catch basins loaded with sediment?	Impervious Pathways; Residential
Pools and Fountains (PF)	High concentration of swimming pools or fountains?	Residential; Parks; Retail
Vectors (V)	Any Stormwater infrastructure with standing water in need of cleaning or maintenance"	Stormwater Management
Thermal Stress (TS)	Are there exposed parking lots or roads near trout streams?	Impervious; Residential; Retail; Industrial
Metals (M)	Any junk/scrap yards or car shops near waterbodies?	Retail; Industrial; Office Professional/Office Space; Residential; Impervious
Pesticides and Herbicides (PH)	High concentration of property owners using lawn care services? Particularly well kept lawns and turf?	Office Professional/Office Space; Residential; Lawns/turf; Golf Courses; Agriculture
Oil and Grease (OG)	High concentration of car repair shops? Food service business or restaurants dumping cooked oil?	Residential; Retail; Impervious

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Town of North Greenbush

Rensselaer County

SPDES ID: NYR 20A191

Pollutants of Concern (POC) Worksheet

Name of Watershed: Unnamed Tributaries – Hudson River

Total Area of MS4: 19.5 Sq. Mi. Watershed Area = 6.8 Sq. Mi. 35 % of MS4

	Built Areas	% of Land Use Within Watershed	Possible POCs	Target Audience
X	Impervious (Paths only: Roads, Sidewalks, Parking Lots, Driveways, etc.)	3%	S	Town Streets
	Residential (Large lots/1 single family per 1 to 5 acres)	%		
X	Residential (Small lots/1 single family/duplex per 1/8 to 1 acre)	29.07%	PF, S, BV, N	Pool Owners, Contractors, Homes with Septic Systems
	Residential (Apts/multi family 1 building per 1/8 to 1 acre)	%		
X	Retail and/or Mixed Use	4.44%	GS, O, OG	Businesses, Restaurants
	Industrial	%		
	Office Professional/Office Space/Schools/Universities	%		
	Green Areas			
	Man-made:			
X	Lawns/turf	19.28%	PH, N	Homeowners
X	Golf Courses/Parks	0.51%	PH, N	Golf Course
	Urban Tree Canopy	%		
X	Agriculture, Livestock, Nurseries, Tree Farms	18.43%	PH, BV, N	Farms
	Stormwater Management	%		
	Natural:			
X	Forest	21.97%		
	Grassland	%		
X	Wetlands	1.93%		
X	Water-Lakes, Ponds, Streams	1.37%		

Measurable Goals for this Watershed

List any Measurable goals to establish that will assist in education for the Target Audience in this Watershed

Measurable Goal 1:	Continue with providing educational stormwater pamphlets in routine Town-wide mailings.
Measurable Goal 2:	Post or otherwise make available stormwater educational materials in other public places.

Pollutants of Concern Table

Likely Pollutant	Prompt Questions	Land Use Category
Bacteria and Viruses (BV)	Septic System Present? Aging Infrastructure? High Concentration of pet waste or goose droppings?	Residential; Lawns/turf; Golf Courses; Livestock
Gross Solids (GS)	Any Restaurants or stores producing trash? High Concentration of poorly maintained dumpsters? Known area for sloppy pick up of trash	Retail
Nutrients (N)	Are there lawns or golf courses using extra fertilizers? Pet Waste? Goose Droppings?	Lawns/Turf; Golf Courses; Agriculture; Office Professional/Office Space/Schools
Organics (O)	Any businesses producing or using paint thinner, solvents, cleaners, etc.	Industrial; Retail
Sediment (S)	Any active construction sites? Parking lots collecting sediments? Catch basins loaded with sediment?	Impervious Pathways; Residential
Pools and Fountains (PF)	High concentration of swimming pools or fountains?	Residential; Parks; Retail
Vectors (V)	Any Stormwater infrastructure with standing water in need of cleaning or maintenance"	Stormwater Management
Thermal Stress (TS)	Are there exposed parking lots or roads near trout streams?	Impervious; Residential; Retail; Industrial
Metals (M)	Any junk/scrap yards or car shops near waterbodies?	Retail; Industrial; Office Professional/Office Space; Residential; Impervious
Pesticides and Herbicides (PH)	High concentration of property owners using lawn care services? Particularly well kept lawns and turf?	Office Professional/Office Space; Residential; Lawns/turf; Golf Courses; Agriculture
Oil and Grease (OG)	High concentration of car repair shops? Food service business or restaurants dumping cooked oil?	Residential; Retail; Impervious

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Laberge Group

Town of North Greenbush

Rensselaer County

SPDES ID: NYR 20A191

Measurable Goal 1:	Continue with providing educational stormwater pamphlets in routine Town-wide mailings.
Measurable Goal 2:	Post or otherwise make available stormwater educational materials in other public places.

Pollutants of Concern (POC) Worksheet

Name of Watershed: Snyder's Lake (included in Wynants Kill watershed)

Total Area of MS4: 19.5 Sq. Mi. Watershed Area = 1.1 Sq. Mi. 6 % of MS4

	Built Areas	% of Land Use Within Watershed	Possible POCs	Target Audience
X	Impervious (Paths only: Roads, Sidewalks, Parking Lots, Driveways, etc.)	0.5%	S	Town Streets
	Residential (Large lots/1 single family per 1 to 5 acres)	%		
X	Residential (Small lots/1 single family/duplex per 1/8 to 1 acre)	16.05%	PF, S, BV, N	Pool Owners, Contractors, Homes with Septic Systems
	Residential (Apts/multi family 1 building per 1/8 to 1 acre)	%		
X	Retail and/or Mixed Use	0.06%	GS, O, OG	Businesses, Restaurants
	Industrial	%		
	Office Professional/Office Space/Schools/Universities	%		
	Green Areas			
	Man-made:			
X	Lawns/turf	11.68%	PH, N	Homeowners
	Golf Courses/Parks	%		
	Urban Tree Canopy	%		
X	Agriculture, Livestock, Nurseries, Tree Farms	21.24%	PH, BV, N	Farms
	Stormwater Management	%		
	Natural:			
X	Forest	31.55%		
X	Grassland	0.85%		
X	Wetlands	2.45%		
X	Water-Lakes, Ponds, Streams	15.6%		

Measurable Goals for this Watershed

List any Measurable goals to establish that will assist in education for the Target Audience in this Watershed

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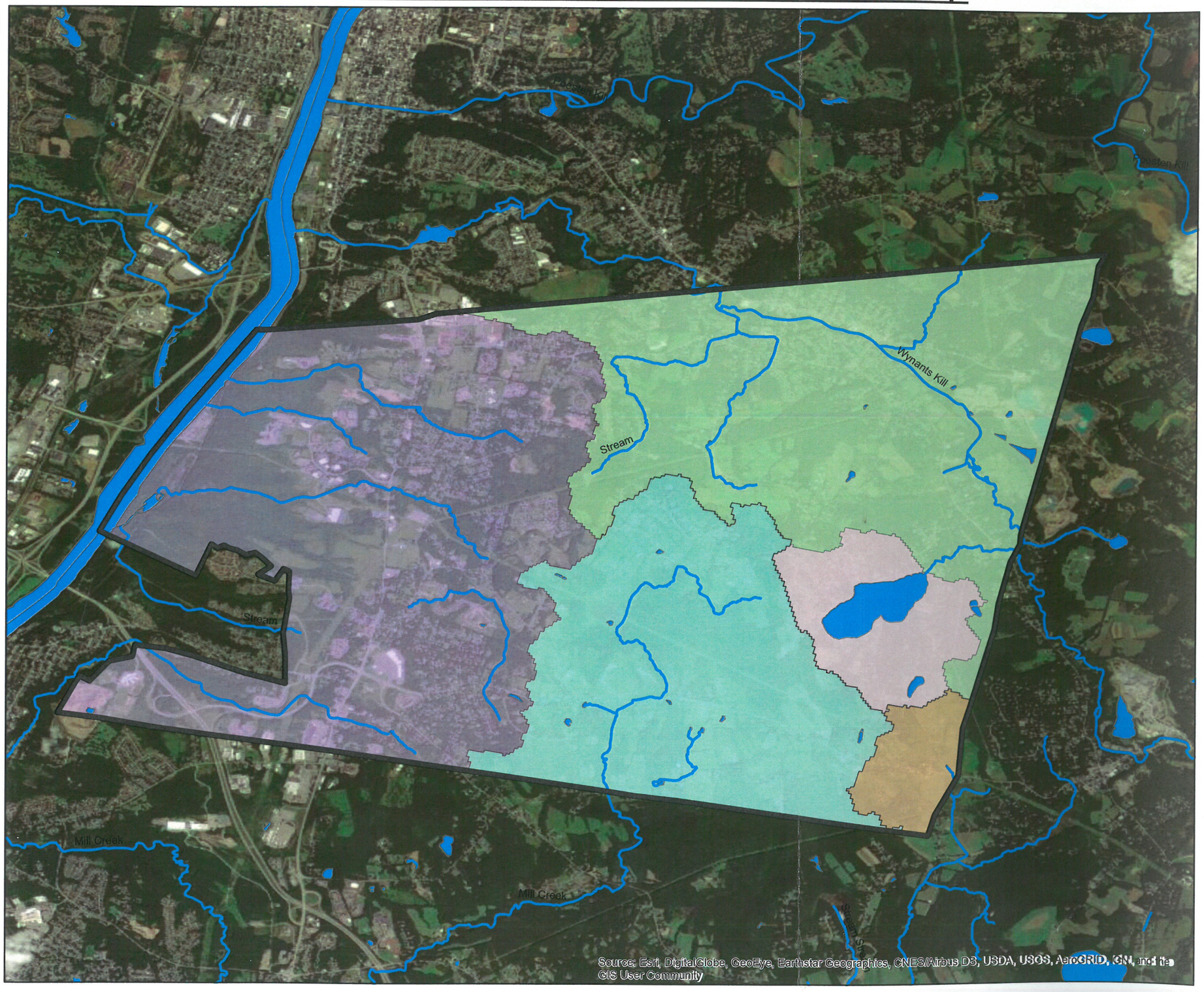
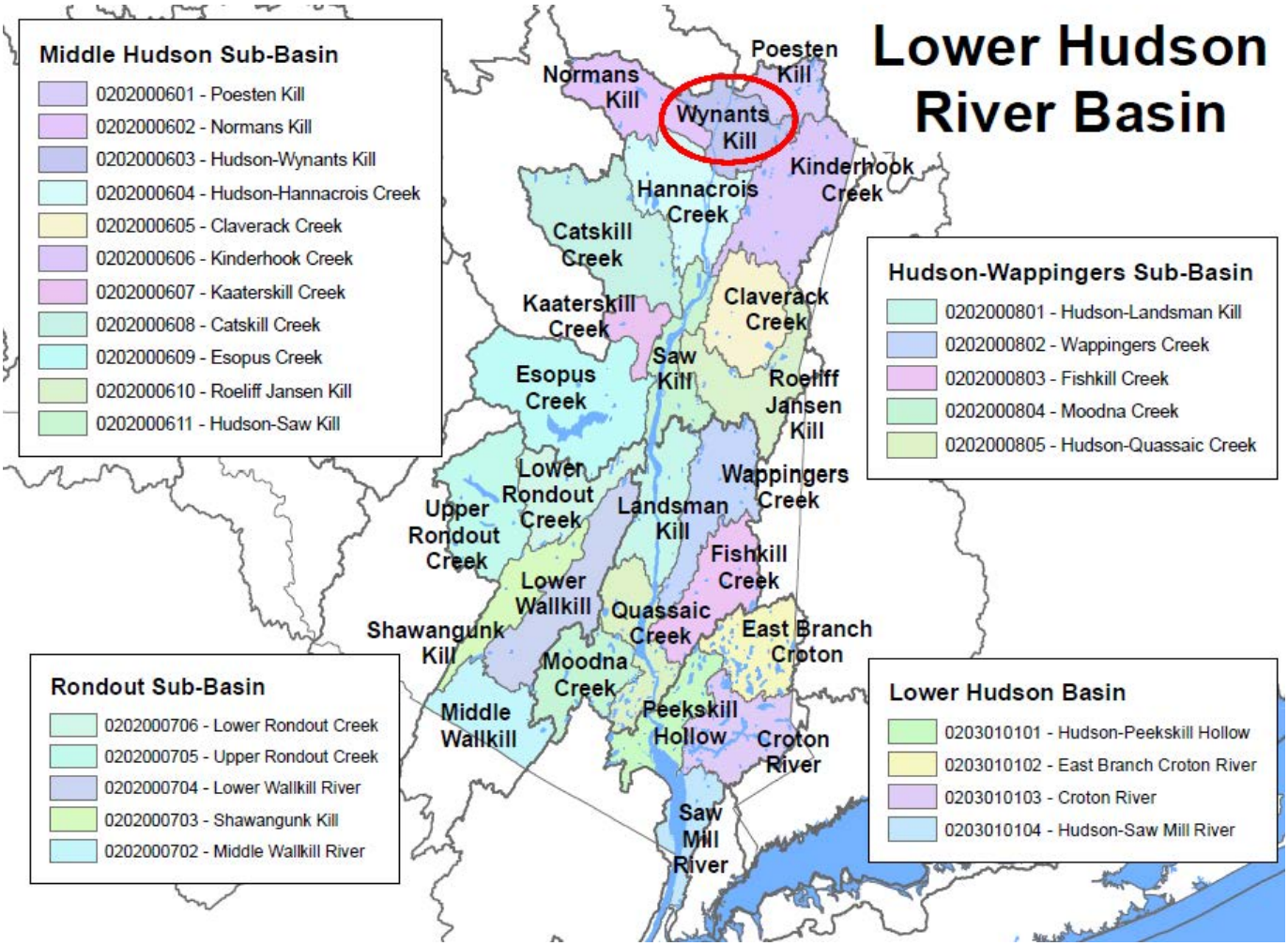
Town of North Greenbush Watershed Map



Legend

- Town Border
- Waterbodies
- Snyder's Lake Watershed
- Wynants Kill Watershed
- Mill Creek Watershed
- North Branch Moordener Kill Watershed
- Hudson River Tributaries Watershed



Wynants Kill – Hudson River
(0202000603)

Water Index Number	Waterbody Name	Category
H-222 thru 232, EOH (selected)	Minor Tribs to East of Hudson (1301-0245)	UnAssessed
H-222-P297	Hampton Manor Lake (1301-0077)	**MinorImpacts**
H-224	Mill Creek and tribs (1301-0246)	**NoKnownImpct**
H-226	Patroon Creek and tribs (1301-0030)	**Impaired Seg**
H-226-P336	Rensselaer Lake (1301-0247)	UnAssessed
H-228a thru 237, WOH	Minor Tribs to West of Hudson(1301-0027)	**Impaired Seg**
H-231-P355	Littles Lake (1301-0248)	UnAssessed
H-235	Wynants Kill, Lower, and tribs (1301-0066)	**MinorImpacts**
H-235	Wynants Kill, Upper, and tribs (1301-0249)	**NoKnownImpct**
H-235- 8-P374	Moules Lake (1301-0250)	UnAssessed
H-235-11-P377	Snyders Lake (1301-0043)	**MinorImpacts**
H-235-13-P382	Racquet Lake (1301-0251)	UnAssessed
H-235-P366	BurdensPond (1301-0252)	UnAssessed
H-235-P386	Burdens Lake (1301-0025)	**MinorImpacts**
H-235-P386-	Tribs to Burden Lake(1301-0253)	UnAssessed
H-235-P386- 1- 1-P391	Crystal Lake (1301-0041)	**Need Verific**
H-235-P386- 1- P397	Crooked Lake (1301-0254)	**NoKnownImpct**
H-235-P386- 1-P394	Glass Lake (1301-0042)	**Need Verific**

Mill Creek and tribs (1301-0246) NoKnownImpct

Waterbody Location Information

Revised: 11/05/2007

Water Index No: H-224
Drain Basin: Lower Hudson River
Hydro Unit Code:
Str Class: C(TS)
Waterbody Type: River
Reg/County: 4/Rensselaer Co. (42)
Waterbody Size: 40.9 Miles
Quad Map: TROY SOUTH (K-26-1)
Seg Description: entire stream and tribs

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
NO USE IMPAIRMNT		

Type of Pollutant(s)

Known: - - -
Suspected: - - -
Possible: - - -

Source(s) of Pollutant(s)

Known: - - -
Suspected: - - -
Possible: - - -

Resolution/Management Information

Issue Resolvability: 8 (No Known Use Impairment)
Verification Status: (Not Applicable for Selected RESOLVABILITY)
Lead Agency/Office: n/a
Resolution Potential: n/a
TMDL/303d Status: n/a

Further Details

Water Quality Sampling
A biological (macroinvertebrate) survey of Mill Creek at multiple sites between Rensselaer and Best was conducted in 2001. Sampling results indicated mostly non-impacted water quality conditions. At the most downstream end of the stream in the City of Rensselaer moderate impacts were indicated, likely the result of urban runoff and/or municipal/industrial sources. The assessment of this stream as having No Known Impacts reflects the condition in over 90% of the reach. Impacts in the lower mile of the creek are included in the receiving Hudson River (and tidal tributaries) segment. (DEC/DOW, BWAM/SBU, June 2005)

High turbidity was observed in the lower reach of Mill Creek in 2001. An investigation traced the turbidity to a construction site. Subsequent action by the DEC Regional Office resulted in a SPDES permit for the site, erosion and sedimentation controls and post-construction measures to limit future impacts. (DEC/DOW, BWAM/SBU, June 2005)

Segment Description
This segment includes the entire stream and all tribs. The waters of the stream are Class C,C(TS). Tribs to this reach/segment are also Class C,C(TS). Lower tidal portions of this trib are included with the Hudson Main Stem.

Wynants Kill, Lower, and tribs (1301-0066) MinorImpacts

Waterbody Location Information

Revised: 11/02/2007

Water Index No: H-235
Hydro Unit Code: 02020006/020 **Str Class:** C(T)
Waterbody Type: River
Waterbody Size: 4.0 Miles
Seg Description: stream and tribs, from mouth to Albia

Drain Basin: Lower Hudson River
Middle Hudson River
Reg/County: 4/Rensselaer Co. (42)
Quad Map: TROY SOUTH (K-26-1)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Aquatic Life	Stressed	Suspected

Type of Pollutant(s)

Known: - - -
Suspected: NUTRIENTS, SILT/SEDIMENT, Metals, Priority Organics
Possible: - - -

Source(s) of Pollutant(s)

Known: - - -
Suspected: URBAN/STORM RUNOFF
Possible: On-Site/Septic Syst, Streambank Erosion, Tox/Contam. Sediment, Other Sanitary Disch

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 3 (Cause Identified, Source Unknown)
Lead Agency/Office: ext/WQCC **Resolution Potential:** Medium
TMDL/303d Status: n/a

Further Details

Overview

Aquatic life support in Wynants Kill are thought to experience minor impacts due to metals, organics and nutrient loadings from urban runoff, past historical contamination and other nonpoint sources.

Water Quality Sampling

A biological (macroinvertebrate) survey of Wynants Kill at multiple sites between West Sand Lake and Troy was conducted in 2001. Sampling results indicated slightly impacted water quality conditions in the two sites along the lower reach. At these sites urban and municipal inputs as well as more general nonpoint sources were identified as likely source of impacts. Previous sampling at the downstream site in Troy found moderately impacted conditions and elevated levels of metals and PAHs in tissue samples. These contaminants were thought to be the result of past historical contamination and urban runoff. Although aquatic life is supported in the stream, nutrient biotic evaluation indicates impacts are sufficient to stress aquatic life support. (DEC/DOW, BWAM/SBU, Wynants Kill Biological Stream Assessment, February 2002)

Previous Assessment

Previously local agencies have expressed concerns about gravel mining operations, suburban residential growth and other development activities in the Wynants Kill watershed that result in increased sediment loads and thermal changes that may affect the fishery and aesthetics of the stream. The stream appears to satisfactorily support a stocked trout

fishery. However high sediment and turbidity has been noted in the stream. Streambank erosion, urban/stormwater runoff and area landfills have also been cited as possible contributing sources. (Rensselaer County WQCC, 1996)

Segment Description

This segment includes the portion of the stream and all tribs from the mouth to the outlet of unnamed pond (P372) in Albia. The waters of this portion of the stream are Class C,C(T). Tribs to this reach/segment are primarily Class C,C(T),C(TS), with one small trib designated Class A. Upper Wynants Kill is listed separately. Lower tidal portions of this trib are included with the Hudson Main Stem.

Snyders Lake (1301-0043) MinorImpacts

Waterbody Location Information

Revised: 04/25/2008

Water Index No:	H-235-11-P377			**Drain Basin:**	Lower Hudson River
Hydro Unit Code:	02020006/020	**Str Class:**	B		Middle Hudson River
Waterbody Type:	Lake			**Reg/County:**	4/Rensselaer Co. (42)
Waterbody Size:	108.1 Acres			**Quad Map:**	TROY SOUTH (K-26-1)
Seg Description:	entire lake				

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Recreation	Stressed	Suspected

Type of Pollutant(s)

Known:	ALGAL/WEED GROWTH (algal blooms, vegetation)
Suspected:	NUTRIENTS (phosphorus)
Possible:	D.O./Oxygen Demand

Source(s) of Pollutant(s)

Known:	- - -
Suspected:	OTHER SOURCE (nutrient recycling)
Possible:	- - -

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: ext/WQCC **Resolution Potential:** Medium
TMDL/303d Status: 1/4c->n/a

Further Details

Overview
Recreational uses in Snyders Lake are thought to experience minor impacts due to occasional algal blooms and weed growth related to seasonal phosphorus releases from lake bottom sediments.

Water Quality Sampling
Snyders Lake has been sampled as part of the NYSDEC Citizen Statewide Lake Assessment Program (CSLAP) beginning in 1997 and continuing through 2001. An Interpretive Summary report of the findings of this sampling was published in 2002. These data indicate that the lake continues to be best characterized as mesotrophic, or moderately productive. These conditions have been relatively stable during the sampling period. Phosphorus levels in the lake only occasionally exceed the state guidance values indicating impacted/stressed recreational uses. However corresponding transparency measurements meet what is recommended for swimming beaches. Measurements of pH typically fall within the state water quality range of 6.5 to 8.5; occasional high pH does not appear to result in ecological impacts. (DEC/DOW, BWAM/CSLAP, November 2002)

Recreational Assessment
Public perception of the lake and its uses is also evaluated as part of the CSLAP program. This assessment indicates recreational suitability of the lake to be very favorable since the lake was first evaluated and continuing through the most recent assessment. The recreational suitability of the lake is best characterized as "excellent" to "slightly"

impacted for most uses. The lake itself is most often described as between "not quite crystal clear," an assessment that is consistent with the perceived water quality conditions in the lake and its measured water quality characteristics. More recent assessments have noted that rooted aquatic plants grow to the lake surface but do not impact recreational use. Native and less invasive plants have replaced Eurasian milfoil, a result attributed to 1998 herbicide treatment of the lake. The greatest impact of recreational assessments continues to be sporadic but occasionally intense algal blooms. (DEC/DOW, BWAM/CSLAP, November 2002)

Lake Uses

This lake waterbody is designated class B, suitable for use as a public bathing beach, general recreation and aquatic life support, but not as a water supply. Water quality monitoring by NYSDEC focuses primarily on support of general recreation and aquatic life. Samples to evaluate the bacteriological condition and bathing use of the lake or to evaluate contamination from organic compounds, metals or other inorganic pollutants have not been collected as part of the CSLAP monitoring program. Monitoring to assess public bathing use is generally the responsibility of state and/or local health departments.

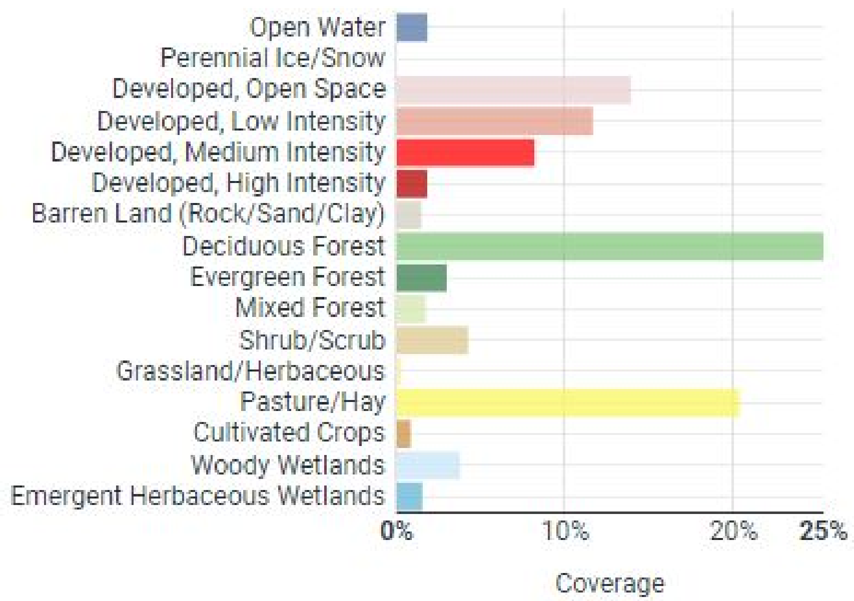
Previous Assessment

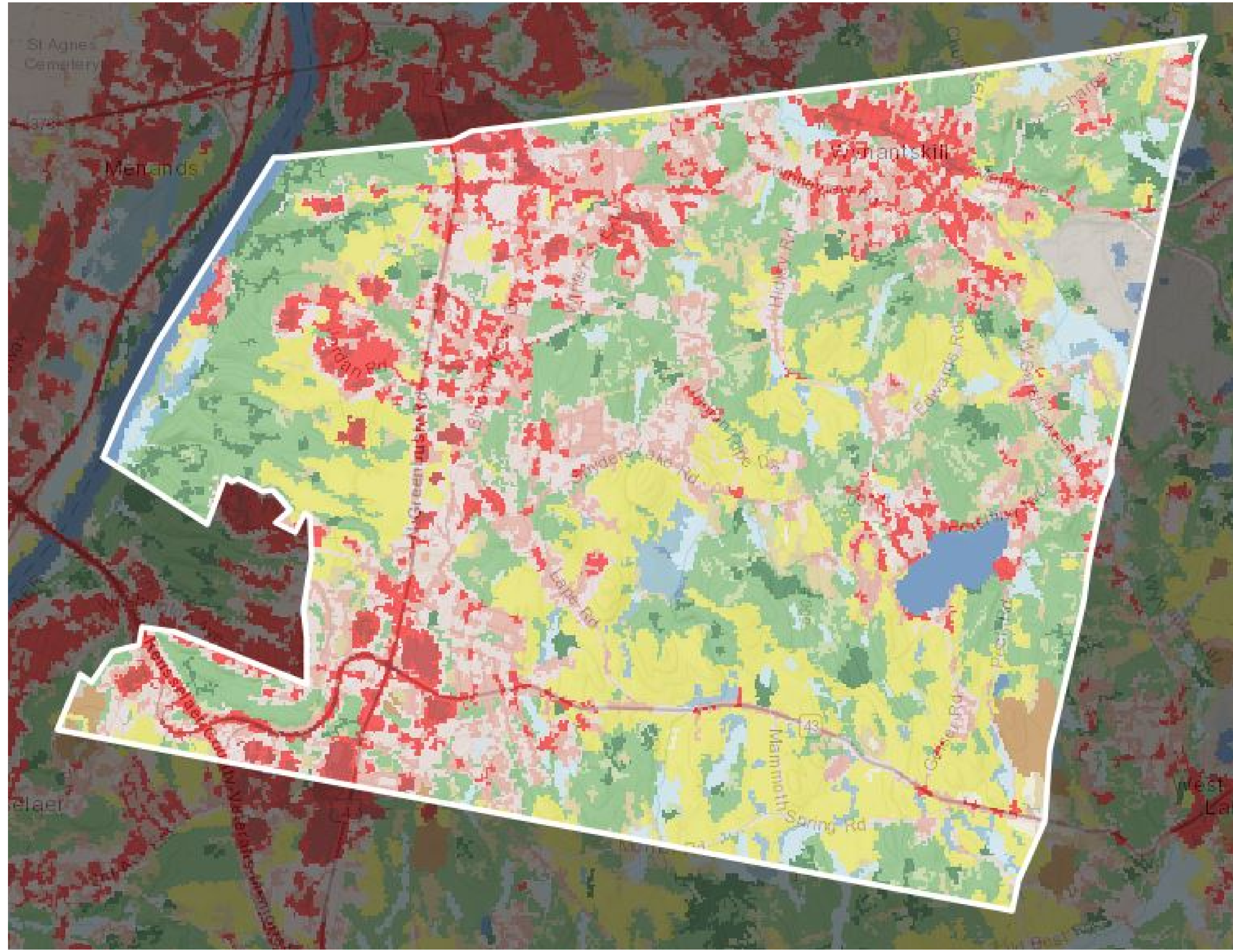
Recreational use impacts due to excessive aquatic weed growth and algal blooms, have been cited in previous assessments. Treatment of the lake with aquatic herbicide (Sonar) has been used to control Eurasian milfoil and curly-leaf pondweed. Historically, failing and/or inadequate on-site septic systems serving homes along the lake were a significant sources of water quality impairment. Construction of a sewer system for lakeshore residents to address this source was completed in 1980s. (DEC/DOW, BWAM/SWMS, 2007)

Section 303(d) Listing

Snyders Lake is currently included on the NYS 2006 Section 303(d) List of Impaired Waters. The lake is included on Part 1 of the List as a Water Requiring a TMDL for phosphorus, however this updated assessment indicates that phosphorus levels only occasionally exceed the criteria reflecting stressed recreational uses and along with recreational assessment do not suggests that these impacts to water quality and uses are sufficient to warrant continued listing. (DEC/DOW, BWAM/WQAS, March 2008)

Town of North Greenbush Land Cover Map





Type	Area (km²)	Coverage (%)
Open Water	0.89	1.76%
Perennial Ice/Snow	0	0.00%
Developed, Open Space	6.87	13.55%
Developed, Low Intensity	5.76	11.36%
Developed, Medium Intensity	4.04	7.97%
Developed, High Intensity	0.9	1.77%
Barren Land (Rock/Sand/Clay)	1.63	3.21%
Deciduous Forest	12.51	24.67%
Evergreen Forest	1.48	2.92%
Mixed Forest	1	1.97%
Shrub/Scrub	2.28	4.50%
Grassland/Herbaceous	0.25	0.49%
Pasture/Hay	10.05	19.82%
Cultivated Crops	0.42	0.83%
Woody Wetlands	1.87	3.69%
Emergent Herbaceous Wetlands	0.76	1.50%
Total	50.71	100.00%

Type	Coverage (%)
Agricultural	±20%
Developed	±33%
Retail/Mixed	±2%
Forests & Wetlands	±40%