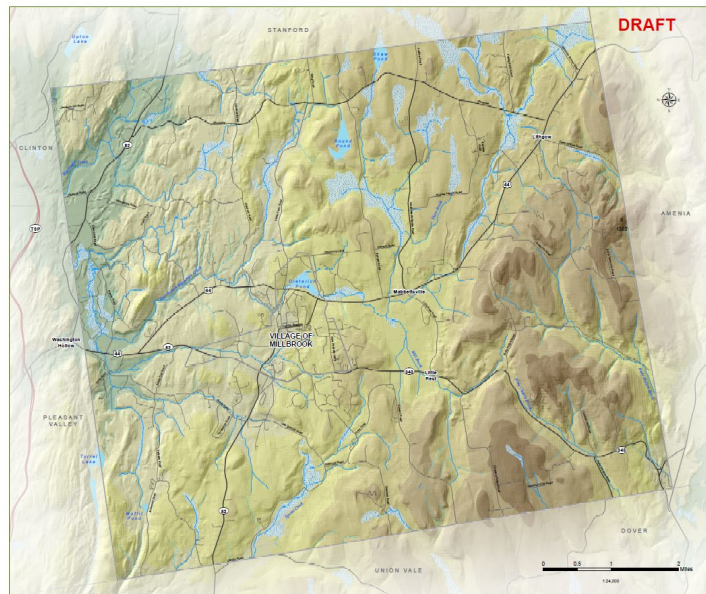




Department of
Environmental
Conservation

Hudson River
Estuary Program

Town of Washington Natural Resources Inventory Project



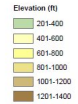
Town of Washington
Dutchess County, NY

Natural Resources Inventory - 2023

3. Topography & Elevation



X - Town High Point



DATASOURCES:
 Municipal Boundaries: Dutchess County Real Property, 2022
 Water Boundaries: Dutchess County Real Property, 2022
 Parcel Boundaries: Dutchess County Real Property, 2022
 Taconic State Parkway: NYS Department of Transportation, 2022
 Major Road: NYS Department of Transportation, 2022
 Local Road: NYS Department of Transportation, 2022
 Wetland: USFWS National Wetland Inventory, 2012

PREPARED BY: CORCORAN LAB, 2023

WARNING: This map is not a substitute for field checks or legal documents. No accuracy or completeness guarantee is intended.

The Dutchess County Natural Resources Inventory (NRI) Technical Assistance Project is a collaborative effort between the County of Dutchess, the Cornell University Department of Nature Resources, and funding from the Environmental Protection Fund through the New York State Department of Environmental Conservation Hudson River Estuary Program.

Ingrid Haeckel and Anna Palmer
Hudson River Estuary Program
September 21, 2023



Hudson River Estuary Program

Working to achieve key benefits:

- vital estuary ecosystem
- clean water
- healthy tributaries
- climate-adaptive communities
- conserved natural areas
- an informed & engaged public
- access for all to the Hudson

<https://www.dec.ny.gov/lands/4920.html>



identify what you have



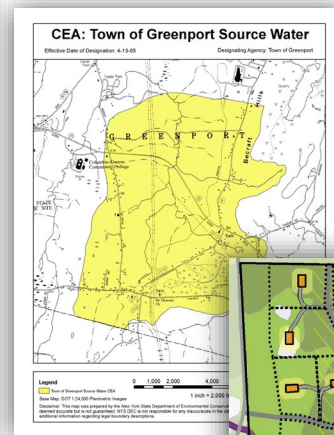
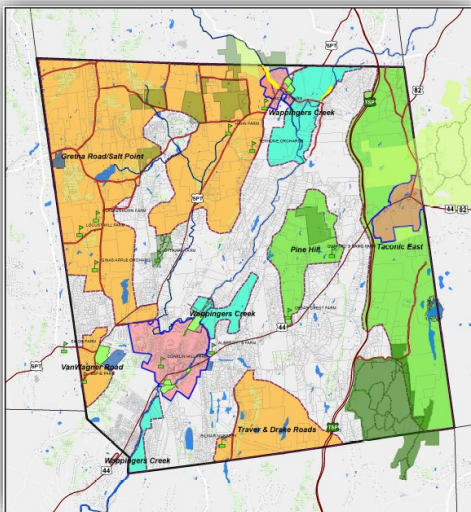
prioritize



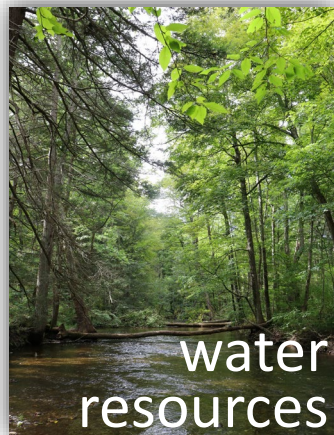
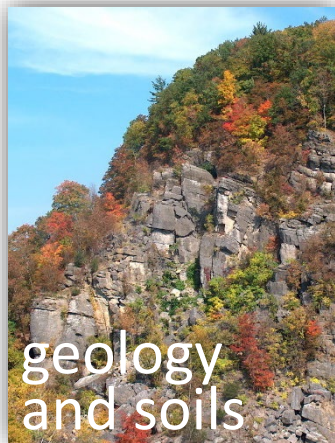
plan, protect, manage



Photo by Laura Heady



What is a Natural Resources Inventory (NRI)?



Why create an NRI?



- unified reference for planning, designing, and reviewing development proposals
- foundation for land use planning and policy
- promote stewardship of resources

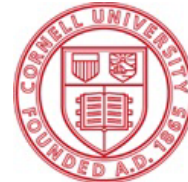
NRI Project Participants



- Ingrid Haeckel, Anna Palmer, and Christine Vanderlan, DEC Hudson River Estuary Program/Cornell University/NEIWPC
- Sean Carroll, Cornell Cooperative Extension Dutchess County
- Volunteers from:
 - Washington Town Board, Planning Board, CAC
 - Millbrook Village Board, CAC, Shade Tree Commission, Climate Smart Communities



*Town of
Washington*



Cornell University
Cooperative Extension
Dutchess County

Data Sources

- State/regional data
- Town and Village Comprehensive/ Master Plans
- Dutchess County Water Supply Protection Plan
- Wappinger Creek Watershed Characterization
- Hudsonia Habitat Map
- Cary Institute of Ecosystem Studies

SIGNIFICANT HABITATS
IN THE TOWN OF WASHINGTON,
DUTCHESS COUNTY, NEW YORK



Report to the Millbrook Tribute Garden, the
Dyson Foundation, the Town of Washington,
and the Dutchess Land Conservancy

By Jenny Tollefson and Gretchen Stevens
Hudsonia Ltd. PO Box 5000, Annandale, NY 12504
April 2004

Climate – Changes in Temperature



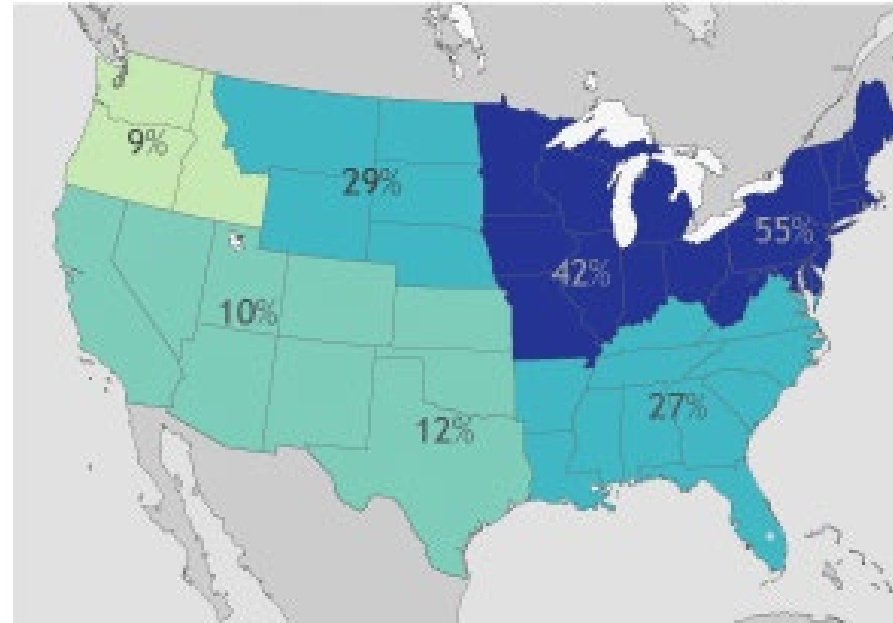
- Average temperatures in NYS have increased $>2.5^{\circ}\text{F}$ since 1900.
- Dutchess County has seen increases of:
 - 1.6°F in average temperature since 1970
 - 2.4°F in winter temperature 1991-2020
- Projected additional increase of $5.5\text{-}9.7^{\circ}\text{F}$ in annual average temperature by 2100
- Projected increase of 26-60 additional extreme heat days ($>90^{\circ}\text{F}$) per year by 2100

Climate – Changes in Precipitation

- Greater proportion of precipitation is occurring in heavy downpours/ extreme events
- Projected overall increase in precipitation
- However, increased variability (e.g., drought and wet periods)
- Decreased winter snow cover

Northeast: 55% increase in annual precipitation falling in extreme events

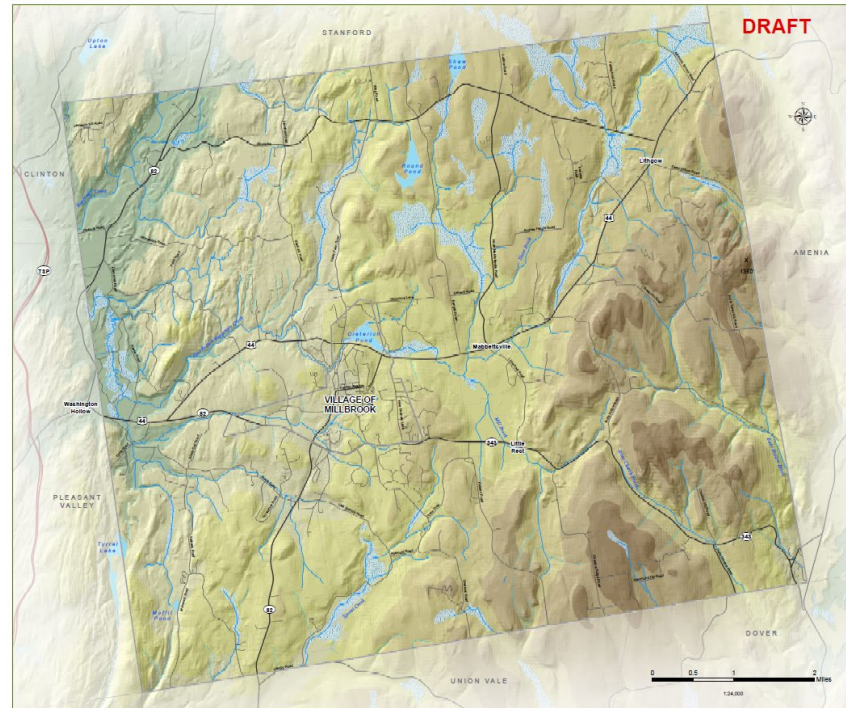
Observed recent change (1958–2016)



Physical Setting

Maps included in this section:

- Topography
- Steep Slopes
- Bedrock Geology
- Surficial Geology
- Soils



Town of Washington
Dutchess County, NY

Natural Resources Inventory - 2023

3. Topography & Elevation

- Washington Boundary
- Municipal Boundary
- Parcel Boundary
- Taconic State Parkway
- Major Road
- Local Road
- Waterbody
- Perennial Stream
- Intermittent Stream
- Wetland

X - Town High Point

Elevation (ft)

- 201-400
- 401-600
- 601-800
- 801-1000
- 1001-1200
- 1201-1400

DATA SOURCES

Municipal Boundaries: Dutchess County Real Property, 2022
Parcel Boundaries: Dutchess County Real Property, 2022
Roads: Dutchess County, 2021
Streams & Waterbodies: HydroUSA, LLC, 2007
Intermittent Stream Requirements: Pennsylvania, 2002
Elevation (DEM): USGS National Map 3D Elevation, 2017

Prepared by: CCEEC 018 Lab, 2023

WARNING: This map is not a substitute for land surveys or legal documents. No accuracy or completeness guarantee is implied or intended.

The Dutchess County Natural Resources Inventory (NRI) Technical Assistance Project is a partnership among the Town of Clinton, the State of New York, the Village of Millbrook, Cornell Cooperative Extension of Dutchess County, and Cornell University Department of Natural Resources, with funding from the Environmental Protection Fund through the New York State Department of Environmental Conservation Hudson River Estuary Program.

Water Resources

Maps included in this section:

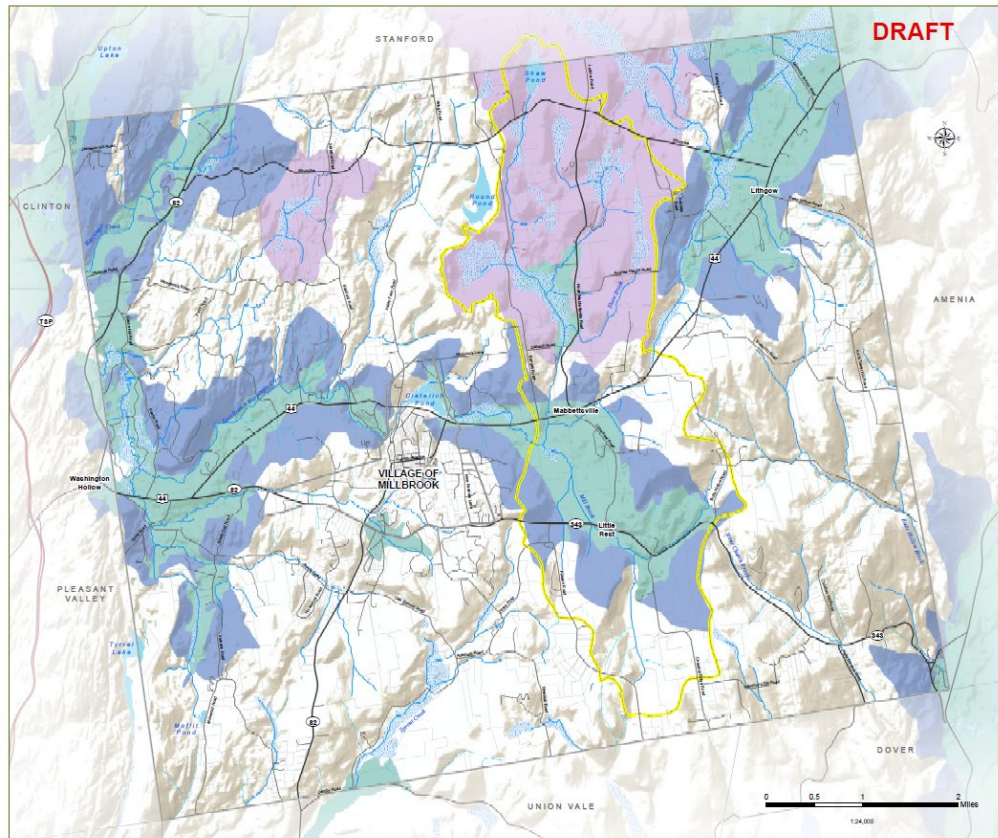
- Drinking Water Resources
- Watersheds
- Water Quality Classifications
- Floodplains and Riparian Areas
- Wetlands



Drinking Water Resources

SOURCE WATER

water that can be used for drinking or cooking



Town of Washington

Dutchess County, NY

Natural Resources Inventory - 2023

8. Drinking Water Resources

- Washington Boundary
- Municipal Boundary
- Parcel Boundary
- Taconic State Parkway
- Major Road
- Local Road
- Waterbody
- Perennial Stream
- Intermittent Stream
- Wetland

Aquifer Recharge Areas

- 1- Primary Recharge- permeable deposits, directly overlying aquifer
- 2- Secondary Recharge- less permeable deposits, up gradient from aquifer, contributes to recharge through infiltration and groundwater flow
- 3- Tertiary Recharge - contributing area around streams that will subsequently seep into aquifer through infiltration
- Village of Millbrook Drinking Water Source Watershed

In order of sensitivity, Zones 1-3 demonstrate Aquifer Recharge Zones that are important to protect by preventing pollution for continued access to clean water. Boundaries are directly related to the natural geographic distribution of geologic materials which yield water.

Delimitation of the Source Watershed for Millbrook Village's Public Water Supply was prepared by the NYSD DOH's Source Water Assessment Program (SWAP) for Millbrook's Public Water Supply NY 12277. Assessment area borders are created using topography (high points and ridgelines) to define the land area that drains water to each drinking water source.

DATA SOURCES

Municipal Boundaries: Dutchess County Real Property, 2022
 Parcel Boundaries: Dutchess County Real Property, 2022
 Roads: Dutchess County OGIS, 2019
 Wetlands: WetlandWatch, 2007
 Wetlands: NY DEC Regulatory Freshwater Wetlands, 2002
 Aquifer Protection Areas: Water Supply Protection Program for Dutchess County, 1992
 Surface Water Protection Watersheds: NYSDOH, 2004

Prepared by: COEDC GIS Lab, 2023

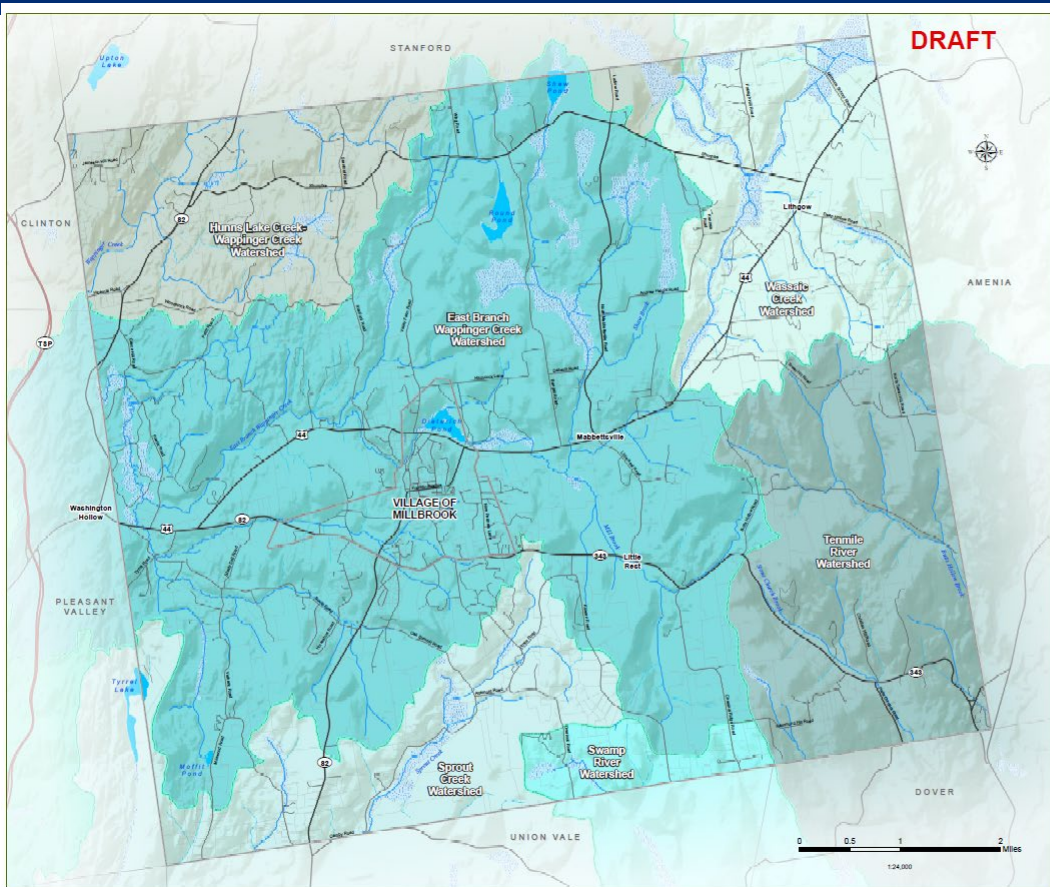
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The areas along Mill Brook and Shaw Brook are especially important because this recharge zone feeds the aquifer that is the source of the municipal water supply for the Village of Millbrook. It is important to protect drinking water sources, infiltration galleries, and wells from potentially contaminating land uses.

Watersheds



Town of Washington

Dutchess County, NY

Natural Resources Inventory - 2023

9. Streams & Watersheds

- Washington Boundary
- Municipal Boundary
- Parcel Boundary
- Taconic State Parkway
- Major Road
- Local Road
- Waterbody
- Perennial Stream
- Intermittent Stream
- Wetland

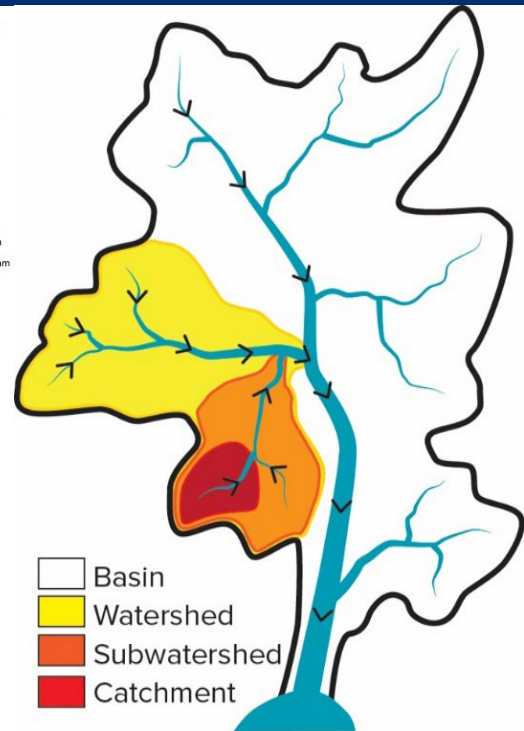
DATA SOURCES

Municipal Boundaries: Dutchess County Real Property, 2022
 Parcel Boundaries: Dutchess County Real Property, 2022
 Roads: Dutchess County OCIS, 2019
 Streams & Watersheds: Hydrologia, Ltd. 2007
 Wetlands: NYSDEC Regulatory Freshwater Wetlands, 2002
 Aquifer Protection Areas: Water Supply Protection Program for Dutchess County, 1992
 Surface Water Protection Watersheds:

Prepared by: CCEDC 9/18 Lab, 2023

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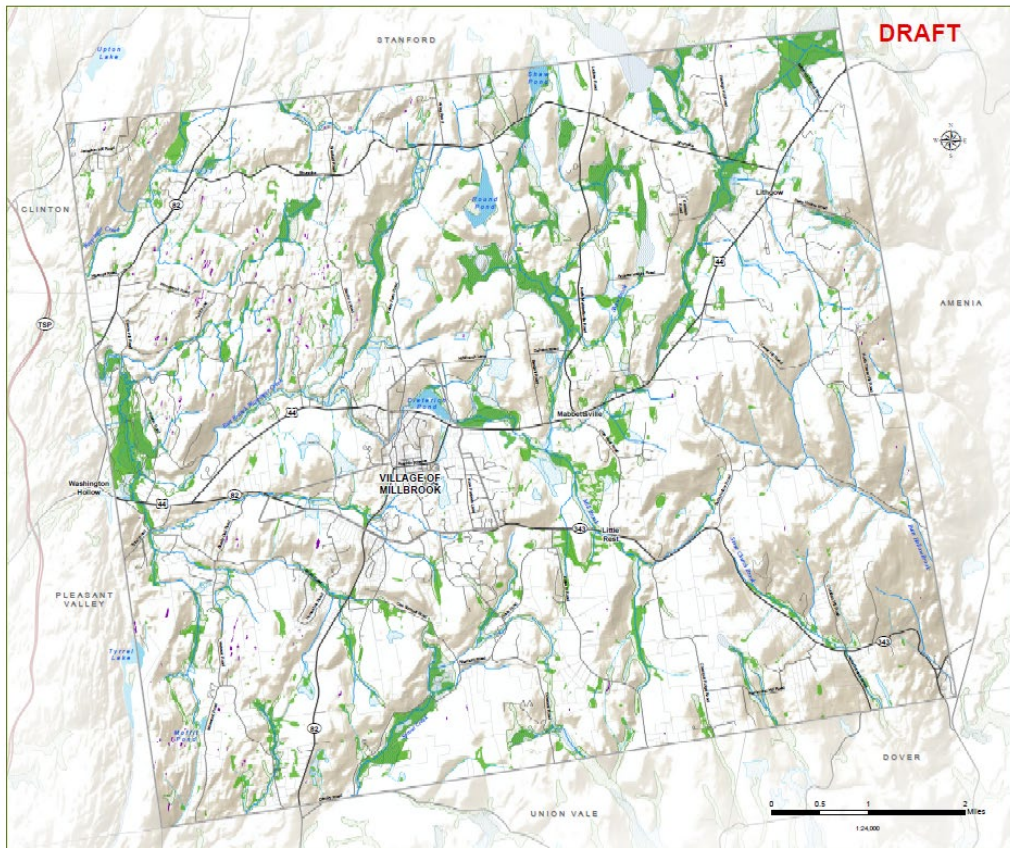


Receiving waterbody

- Basin
- Watershed
- Subwatershed
- Catchment

NESTED WATERSHEDS
 Source NYSDEC

Wetlands



Town of Washington

Dutchess County, NY

Natural Resources Inventory - 2023

12. Wetlands

- Washington Boundary
- Waterbody
- Municipal Boundary
- Perennial Stream
- Parcel Boundary
- Intermittent Stream
- Taconic State Parkway
- Wetland
- Major Road
- Local Road

- Known Vernal Pool
- DEC Regulatory Wetland
- Wetland (Hudsonian)
- Probable wetland area
- Possible wetland area

Wetlands (swamps, marshes, wet meadows, and similar areas) are areas saturated by surface or ground water sufficient to support distinctive vegetation adapted for life in a saturated soil condition. Wetlands serve as natural habitat for many species of plants and animals, control flooding, and help to clean water. Natural buffer areas surrounding wetlands are essential to the values and functions of wetlands.

The Town of Washington Zoning Law §328 regulates wetlands at least 0.25 acre or greater in size, as well as adjacent buffer areas.

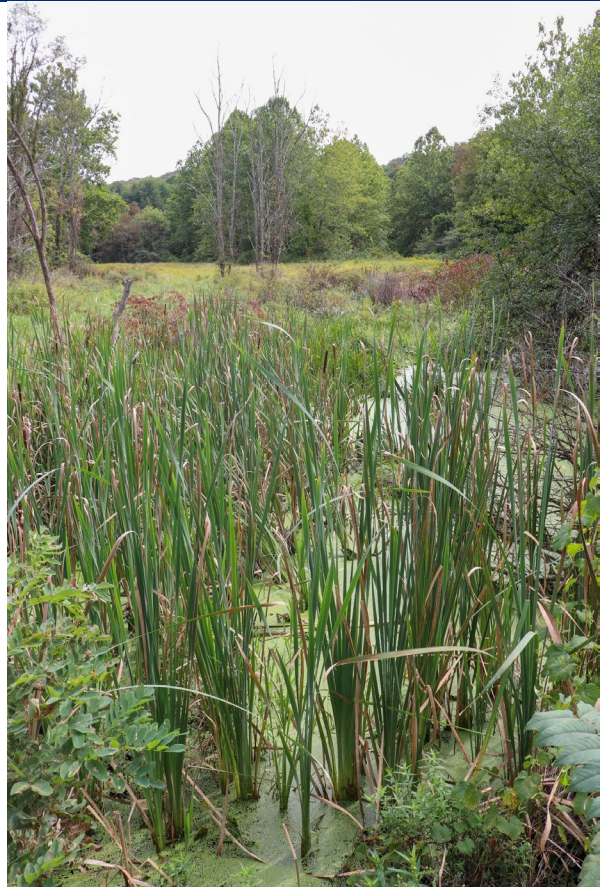
DATA SOURCES

Municipal Boundaries: Dutchess County Real Property, 2022
 Parcel Boundaries: Dutchess County Real Property, 2022
 Roads: Dutchess County GIS, 2019
 Vernal Pools, Streams & Waterbodies: Hudsonia, Ltd. 2004
 Wetlands: NY DEC Regulatory Freshwater Wetlands, 2002
 & Hudsonia, Ltd. 2007
 Probable & Possible Wetlands: USDA Soil Conservation Service 1978

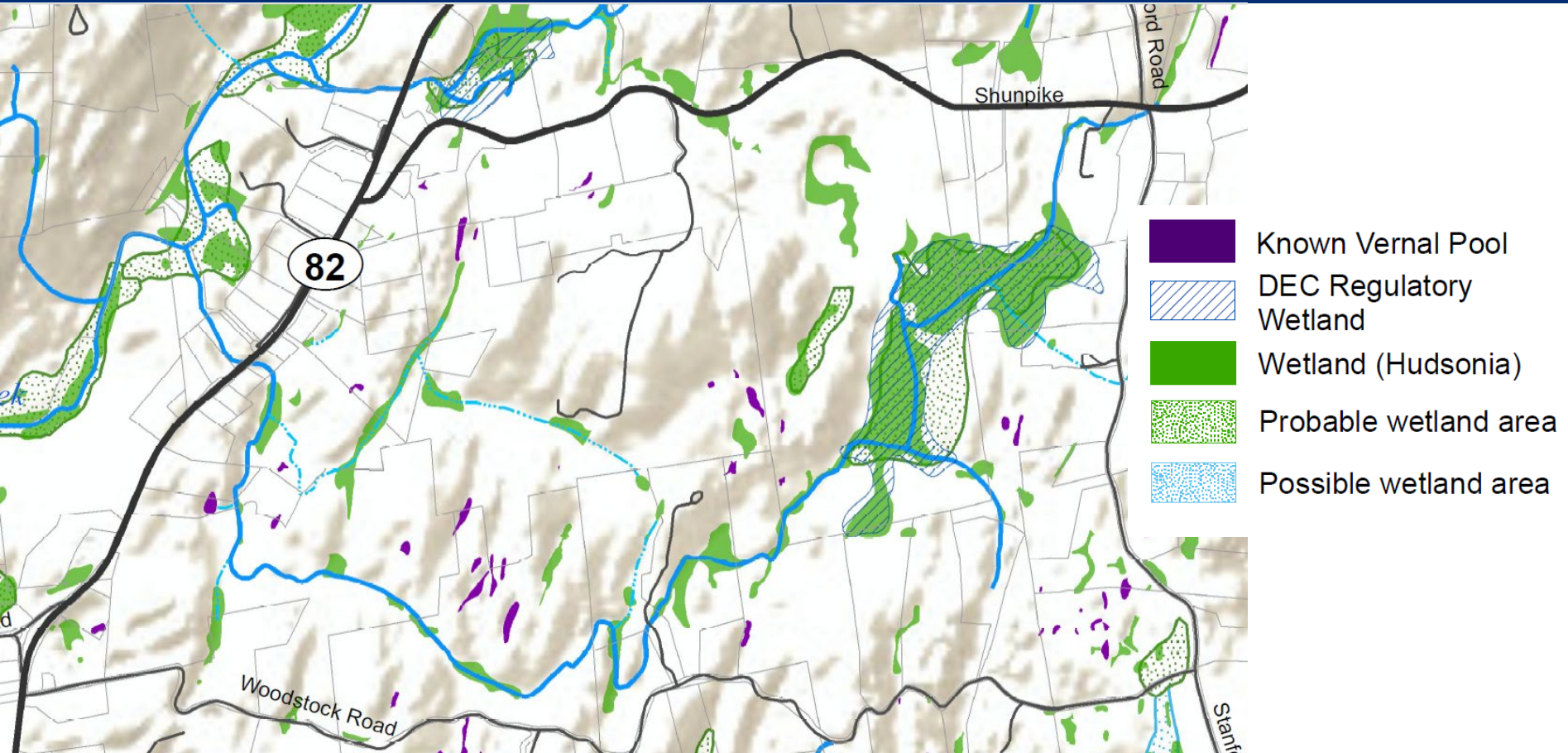
Prepared by: CCEDC GIS Lab, 2023

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Wetlands



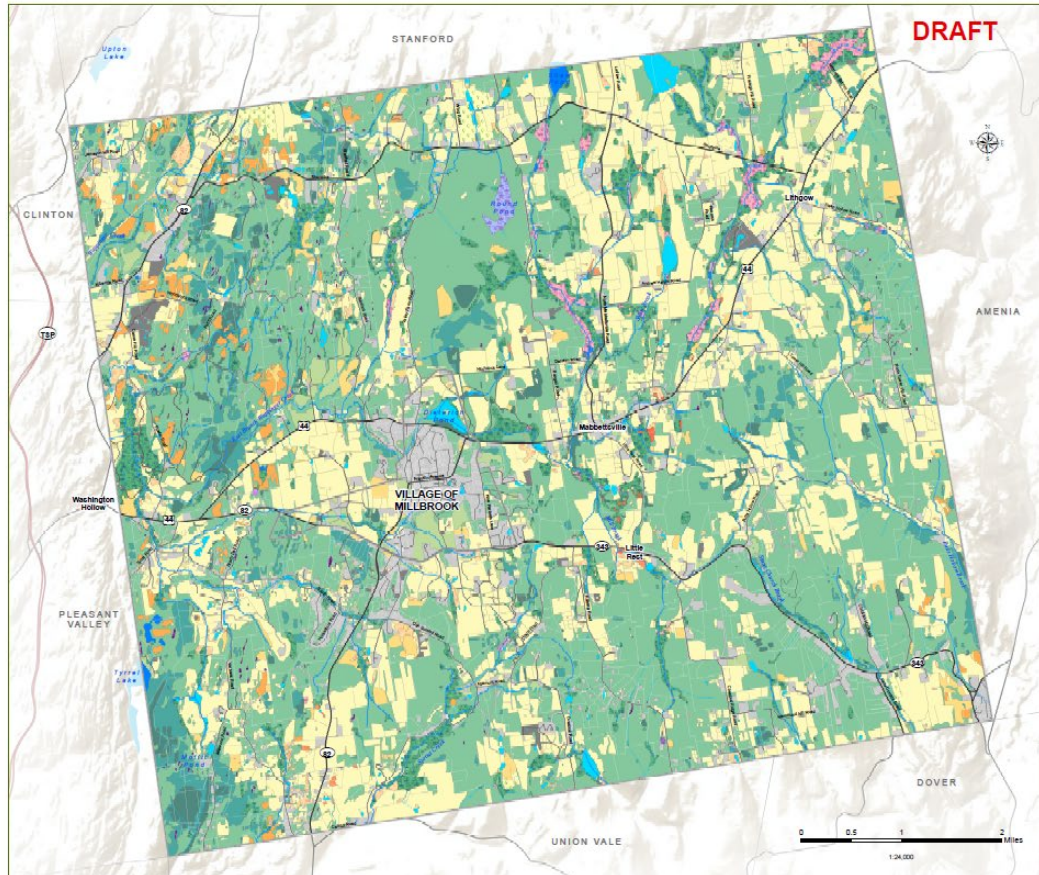
Biodiversity

Maps included in this section:

- Habitats
- Important Biodiversity Areas
- Large Forests
- Regional Forests



Habitats

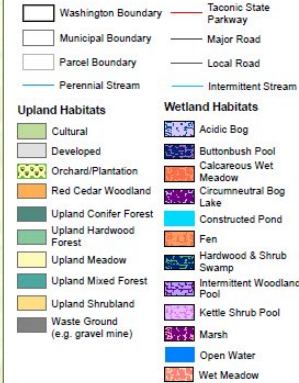


Town of Washington

Dutchess County, NY

Natural Resources Inventory - 2023

14. Habitats



Habitats were identified by Hudsonia biologists through map analysis and aerial photograph interpretation, and as many locations as practicable were field-verified. The map is suitable for general land-use planning, but is not suitable for detailed planning and the design, or for jurisdictional determinations. Boundaries of wetlands and other habitats depicted are only approximate. The Significant Habitats in the Town of Washington report prepared in conjunction with the map explains the habitat identification and mapping methods, describes the ecological significance of each habitat type, and offers conservation recommendations.

DATA SOURCES

Municipal Boundaries: Dutchess County Real Property, 2022
 Parcel Boundaries: Dutchess County Real Property, 2022
 Roads: Dutchess County OCIS, 2019
 Streams & Waterbodies: Hudsonia, Ltd. 2004
 Wetlands: NYSED's Regulatory Freshwater Wetlands, 2002
 Habitats: Hudsonia, Ltd. 2004

Prepared by: COEDC GIS Lab, 2023

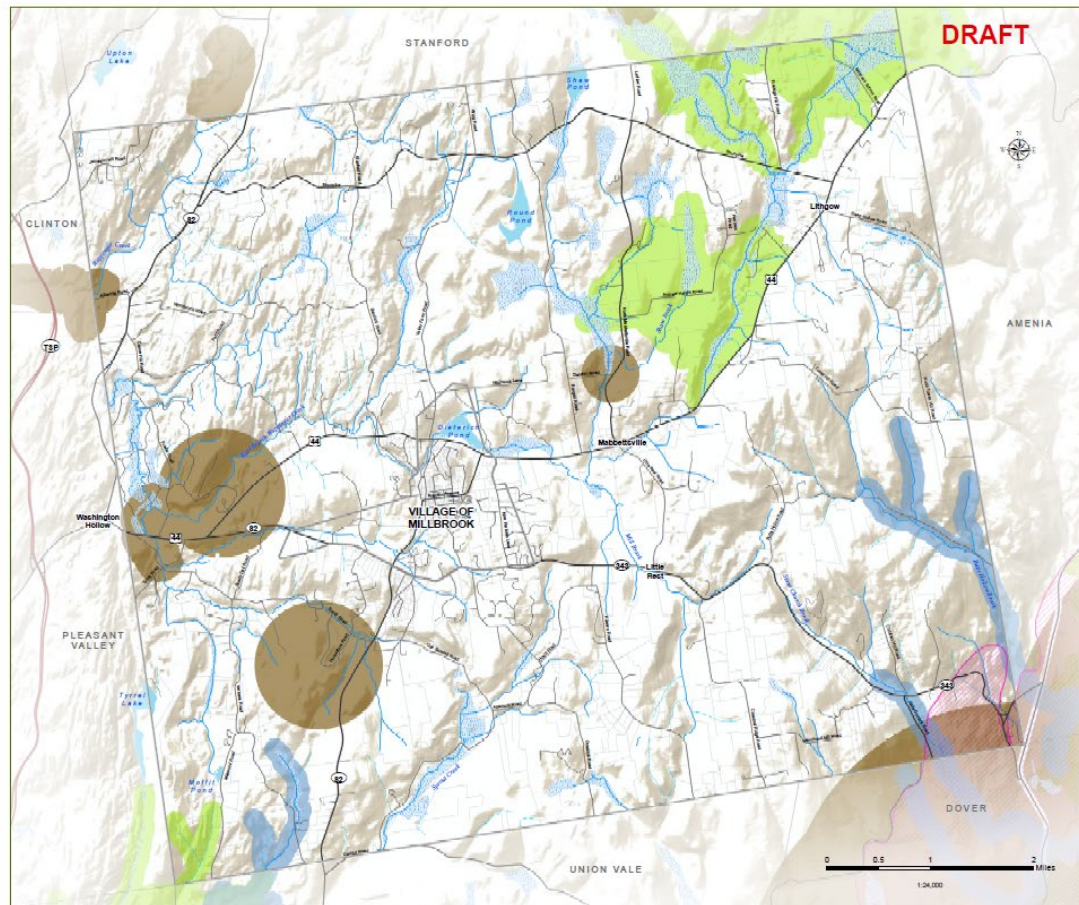
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Habitats



Important Biodiversity Areas



Town of Washington
Dutchess County, NY

Natural Resources Inventory - 2023

17. Important Biodiversity Areas

- Washington Boundary
- Waterbody
- Perennial Stream
- Intermittent Stream
- Municipal Boundary
- Parcel Boundary
- Wetland
- Taconic State Parkway
- Major Road
- Local Road
- Harlem Valley Calcareous Wetlands Significant Biodiversity Area (SBA)
- Important Coldwater Stream Habitat
- Important Area for Rare Terrestrial Animals
- Important Area for Rare Plants
- Important Area for Rare Wetland Animals

DATA SOURCES

Municipal Boundaries: Dutchess County Real Property, 2022
 Parcel Boundaries: Dutchess County Real Property, 2022
 Roads: Dutchess County COG, 2019
 Streams & Waterbodies: Hudsonia, Ltd. 2004
 Wetlands: NYSDEC Regulatory Freshwater Wetlands, 2002
 Significant Biodiversity Areas: NYSDEC, 2006
 Important Areas: NY Natural Heritage Program, 2018

Prepared by: CCEDC GIS Lab, 2023

WARNING: This map is not a substitute for land surveys or legal documents. No accuracy or completeness guarantee is implied or intended.

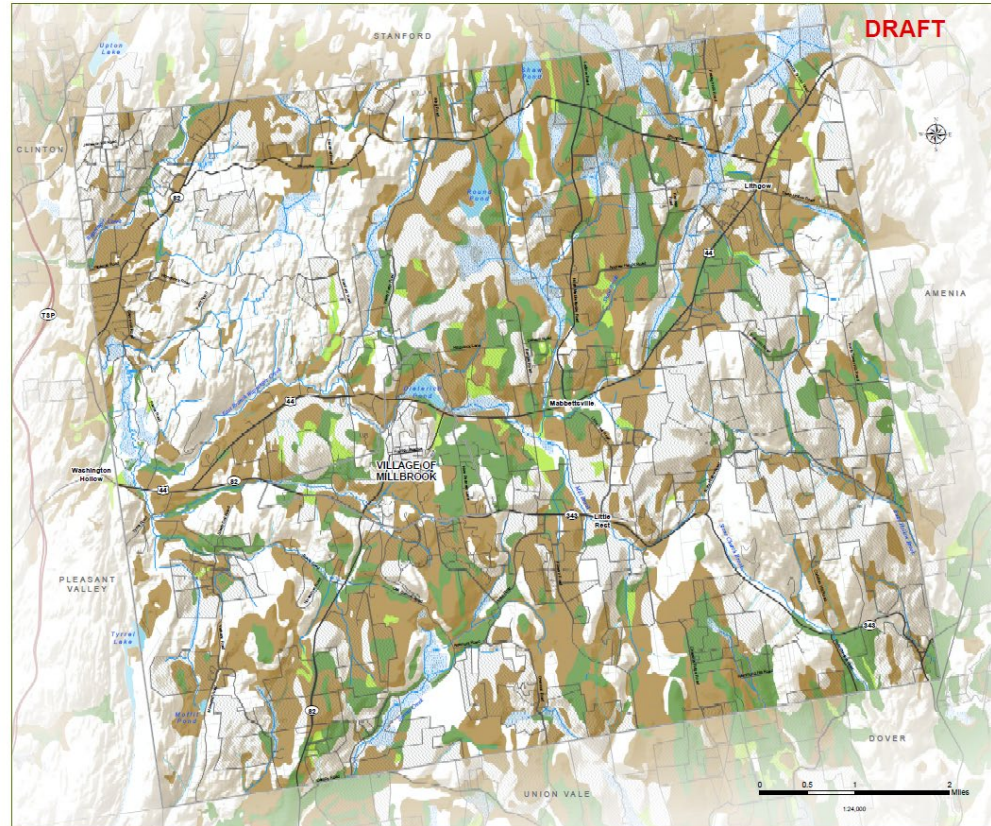
The Dutchess County Natural Resources Inventory (NRI) Technical Assistance Project is a partnership among the Town of Clinton, the Town of Washington, the Village of Millbrook, Cornell Cooperative Extension of Dutchess County, and Cornell University Department of Natural Resources, with funding from the Environmental Protection Fund through the New York State Department of Environmental Conservation Hudson River Estuary Program.



Areas supporting known occurrences of rare animals based on state databases

Land Use

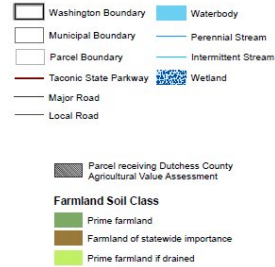
- Maps included in this section:
 - Agricultural Resources
 - Conservation and Public Lands



Town of Washington Dutchess County, NY

Natural Resources Inventory - 2023

18. Agricultural Resources



DATA SOURCES

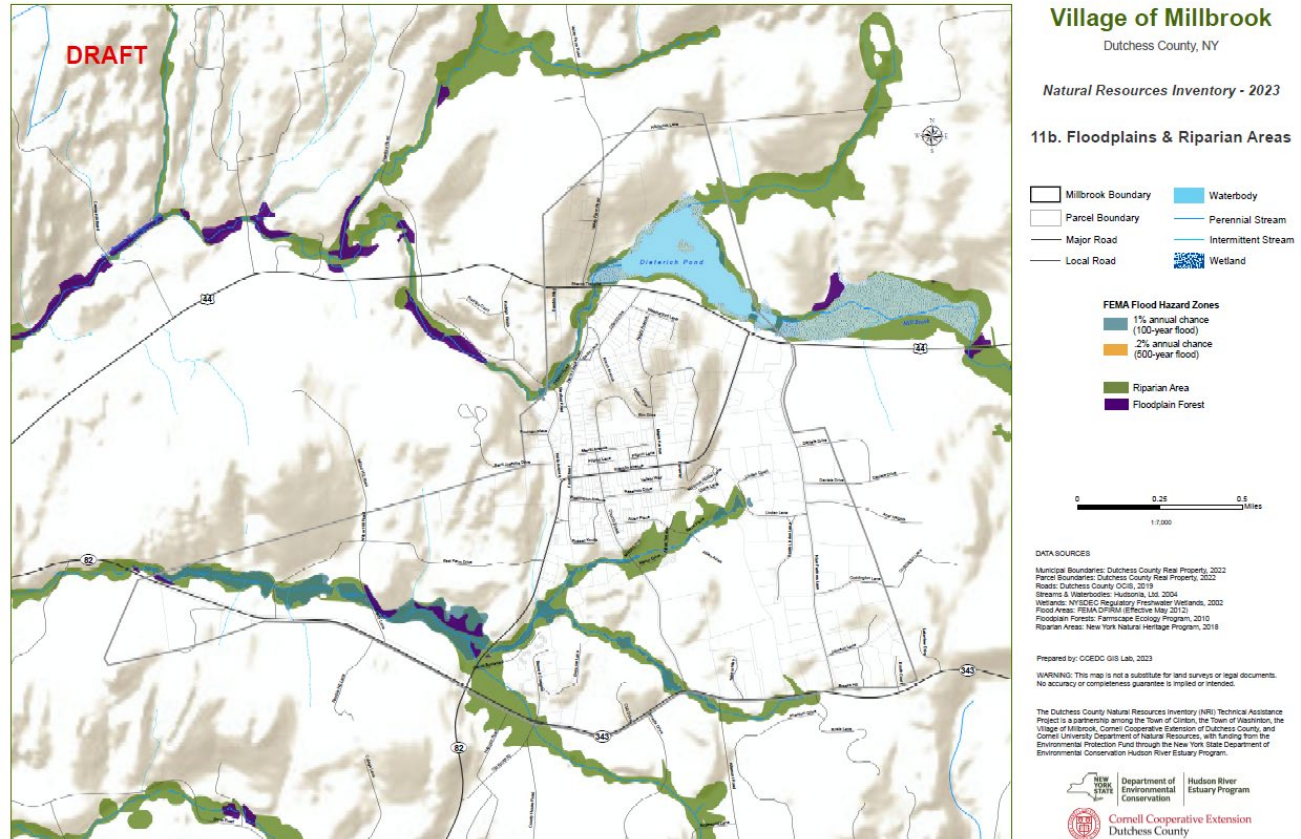
Municipal Boundaries: Dutchess County Real Property, 2022
Parcel Boundaries: Dutchess County Real Property, 2022
Roads: Dutchess County GISD, 2019
Agriculture Value Assessment: Dutchess County Real Property, 2022
Streams & Waterbodies: Hudsonia, Ltd. 2004
Wetlands: NYDEC Regulatory Freshwater Wetlands, 2002
Farmland Soils: USDA Web Soil Survey

Prepared by: CEDEC GIS Lab, 2023
WARNING: This map is not a substitute for land surveys or legal documents.
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Village of Millbrook Maps

- Base Map
- Steep Slopes
- Drinking Water
- Forests
- Floodplains & Riparian Areas
- Wetlands
- Habitats



identify what you have



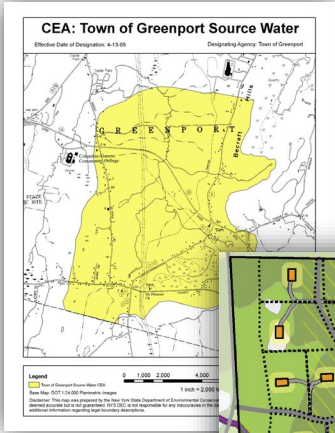
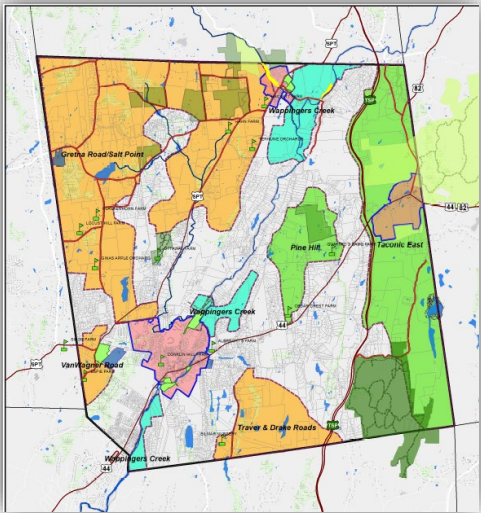
prioritize



plan, protect, manage



Photo by Laura Heady



Best Practices for Adopting Conservation Inventories and Plans

A Guide for Communities in the Hudson River Estuary Watershed



Examples for:

- Local resolutions and laws
- Comp plan amendments
- Integrating the NRI to local code

prioritize



plan, protect,
manage

Examples:

Project Review

- Incorporate NRI information to application checklist
- Can provide training for local boards



Town of
Washington

**TOWN OF WASHINGTON
PLANNING BOARD**

10 Reservoir Drive • P.O. Box 667 Millbrook,
NY 12545 • (845) 677-3419 EXT 112 •
planningboard@washingtonny.org

GENERAL INFORMATION AND APPLICATION CHECKLIST

I. GENERAL INFORMATION

A. Meetings

1. Planning Board meetings are held the first Tuesday of each month. Meetings are generally held at 6:00 pm but the time is subject to change so please verify the start time of the meeting you plan to attend by checking the Town's website home page where upcoming meetings are posted. [See https://www.washingtonny.org/](https://www.washingtonny.org/)
2. Special meetings may be called by the Planning Board Chair and will be noticed pursuant to Open Meetings Law.
3. If the date of any meeting is cancelled due to inclement weather, lack of quorum or other conflict, the meeting may be scheduled for another night and the new date and time will be posted and made public pursuant to Open Meetings Law.

B. Deadlines

All submissions are due no later than 12:00 pm (noon) two weeks prior to the Planning Board monthly meeting. There will be no exceptions.

C. Accuracy and Completeness of Applications

The following is a summary of the Planning Board's submission requirements and is intended merely as an aid to expedite the work of the Planning Board and the applicant. Applicants and their representatives are responsible for reviewing and complying with the provisions of the Town of Washington Zoning Code and Land Subdivision Regulations, if applicable. Noncompliance with any of the requirements may result in delays in the processing of an application and incomplete or inaccurate information provided by applicants or their representatives may result in revocation of any approval granted based on such information.

1. The Planning Board's consultant will conduct an initial review for completeness and zoning compliance and shall report to the Planning Board. The consultant may request the assistance of the Planning Board's engineer and other professionals during the completeness review. The consultant may contact the applicant, or the applicant's identified professional, regarding any items found to be incomplete.

D. Please note that compliance with applicable application procedures and requirements does not guarantee approval of your project.

prioritize

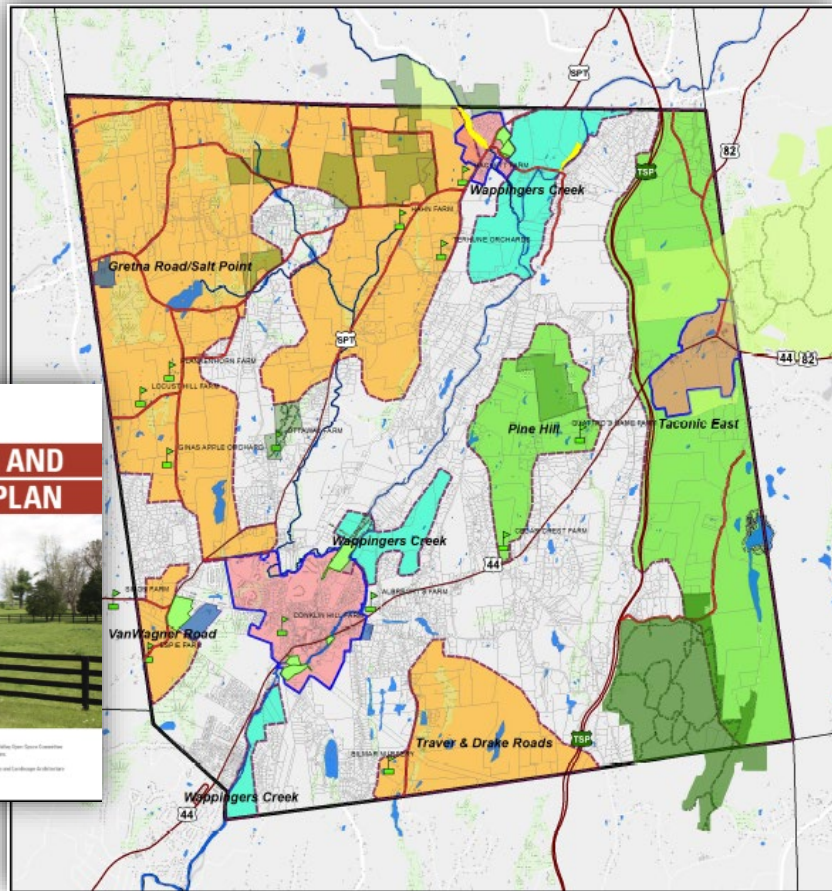


plan, protect,
manage

Examples:

Planning

- Open Space Inventory
- Open Space Plan



Thank you! Questions?

Link to view/download draft NRI & maps –

<https://cornell.box.com/s/hosviy8pnmjec09qnbreplskrcpaa4c1>

Please submit any comments/feedback on the draft NRI and maps to Leslie Heaney by October 1st with “NRI” in the subject headline.

Ingrid Haeckel and Anna Palmer

Hudson River Estuary Program

ingrid.haeckel@dec.ny.gov

anna.palmer@dec.ny.gov



Hudson River
Estuary Program



Cornell University



Thank you, volunteers!

Washington:

Leslie Heaney

Richard Philips

Margaret Schneible

Millbrook:

Genevieve Glasson

Peter Groffman

Mike Herzog

Shannon LaDeau