

**Map #1: Basemap**

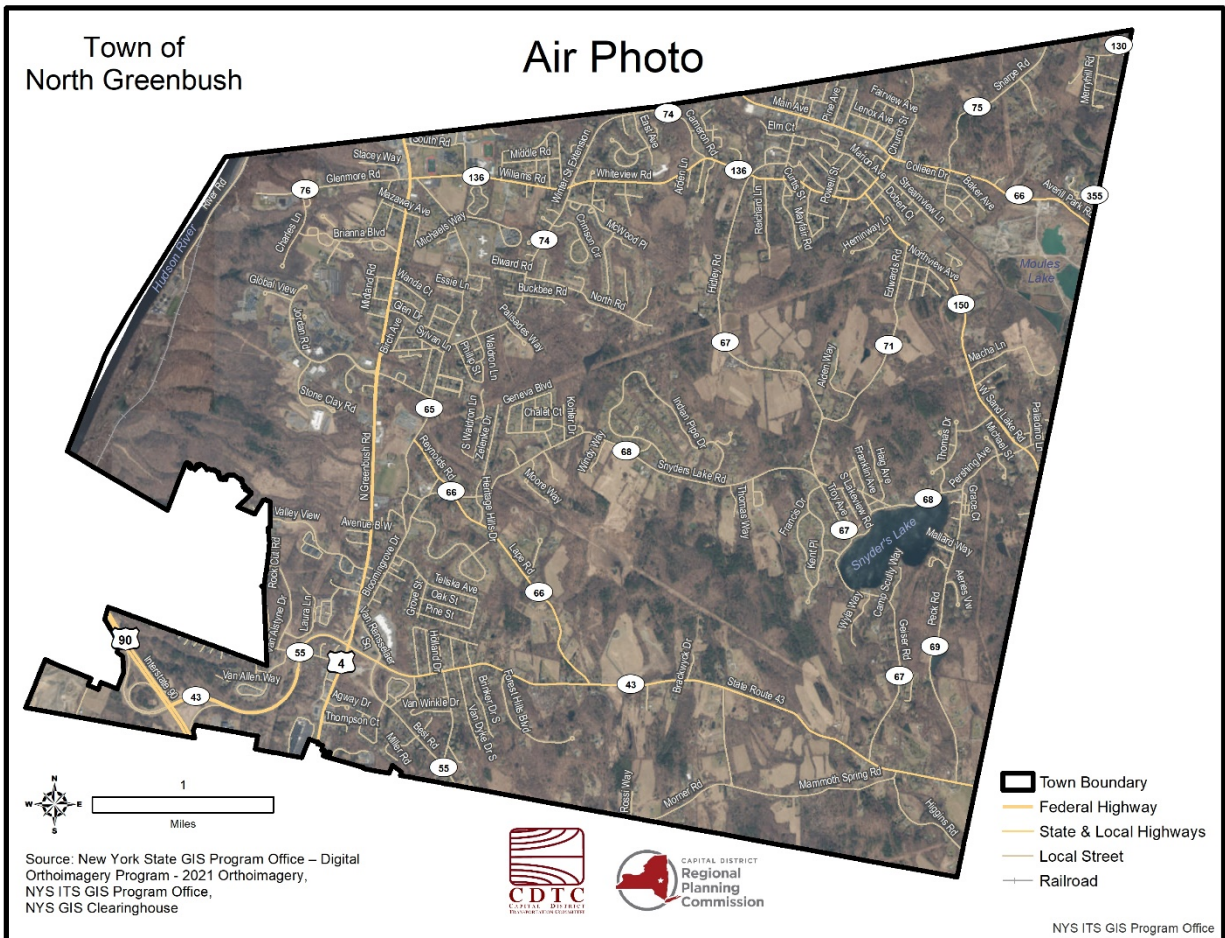
The basemap shows the total area of North Greenbush. Solid black lines around the perimeter indicate the town boundaries. Roadways, including parts of federal highways, state and local highways, and local streets, are illustrated. Local streets provide sufficient connections throughout the town.

Access to Interstate 90, a federal highway, is in the southwest corner. Access to Route 4 and Route 43, both state highways, is in the southern portion of town. The northern section of town is serviced by Route 136 and Route 150.

The basemap also shows miles of streams that run through North Greenbush. Additional features include Snyder's Lake in the eastern portion of town, and the Hudson River which borders a significant portion of the town's western boundary.

A railway parallels the Hudson River along the town's western boundary.

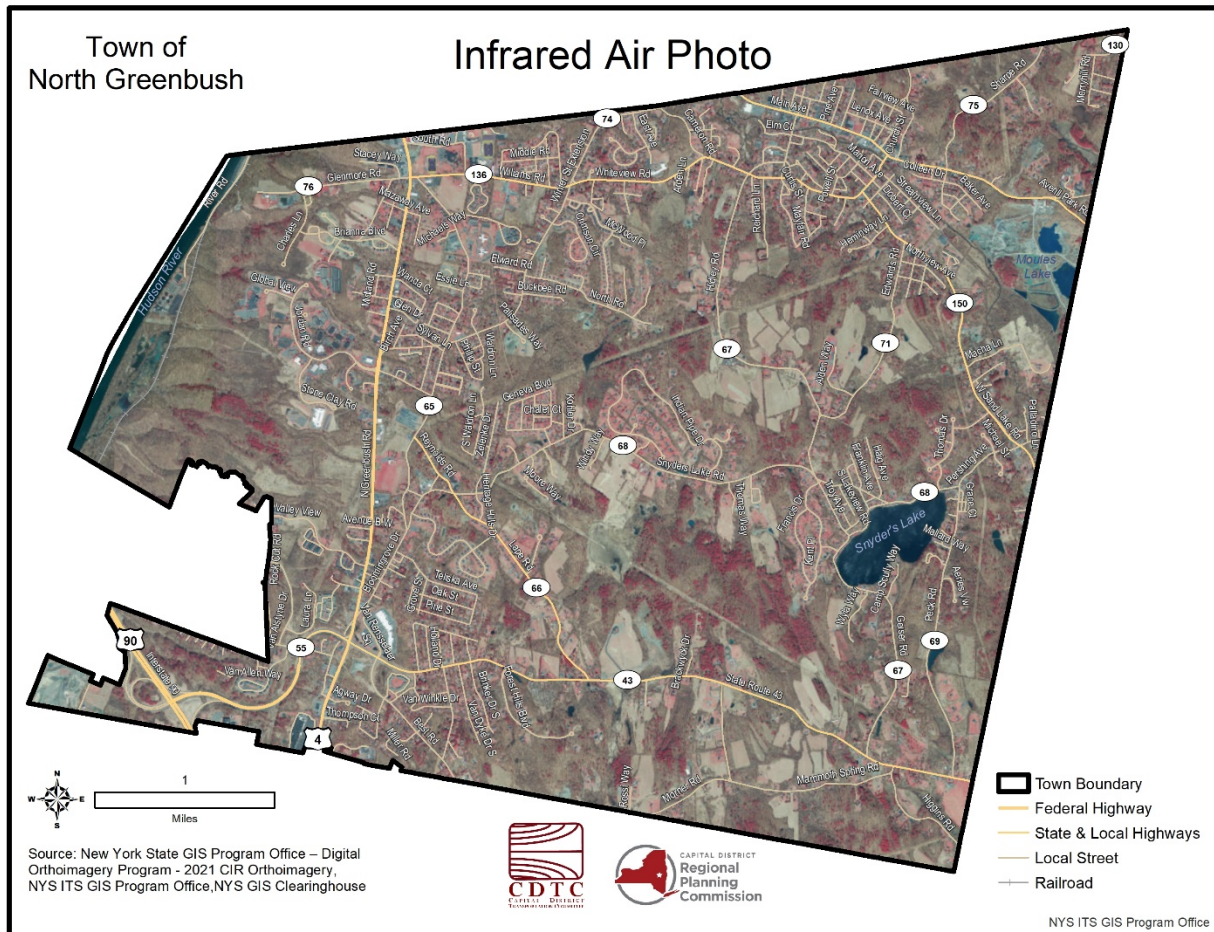
Two town parks are also illustrated: the Twin Town Little League Fields in the north/northwest portion of town, and the North Greenbush Town Park at Snyder's Lake in the southeast portion of town



**Map #2: Air Photo**

The Aerial View Map gives a bird's-eye view of the town and shows a mixture of green space and areas developed for residential and commercial purposes. This 1-foot resolution, 4-band digital orthoimagery was taken in natural color in 2021 by the NYS Digital Orthoimagery Program. Orthoimagery is aerial imagery that has been georeferenced and digitally corrected to remove geometric distortion due to ground relief and camera position. The resulting imagery is proportionally accurate and can be overlaid onto maps. The aerial imagery was taken in early spring prior to the leaf out of deciduous trees, resulting in a detailed view of vegetation types, land uses, and development. It can serve as a reference for comparison with features shown on other maps in the Natural Resources Inventory.

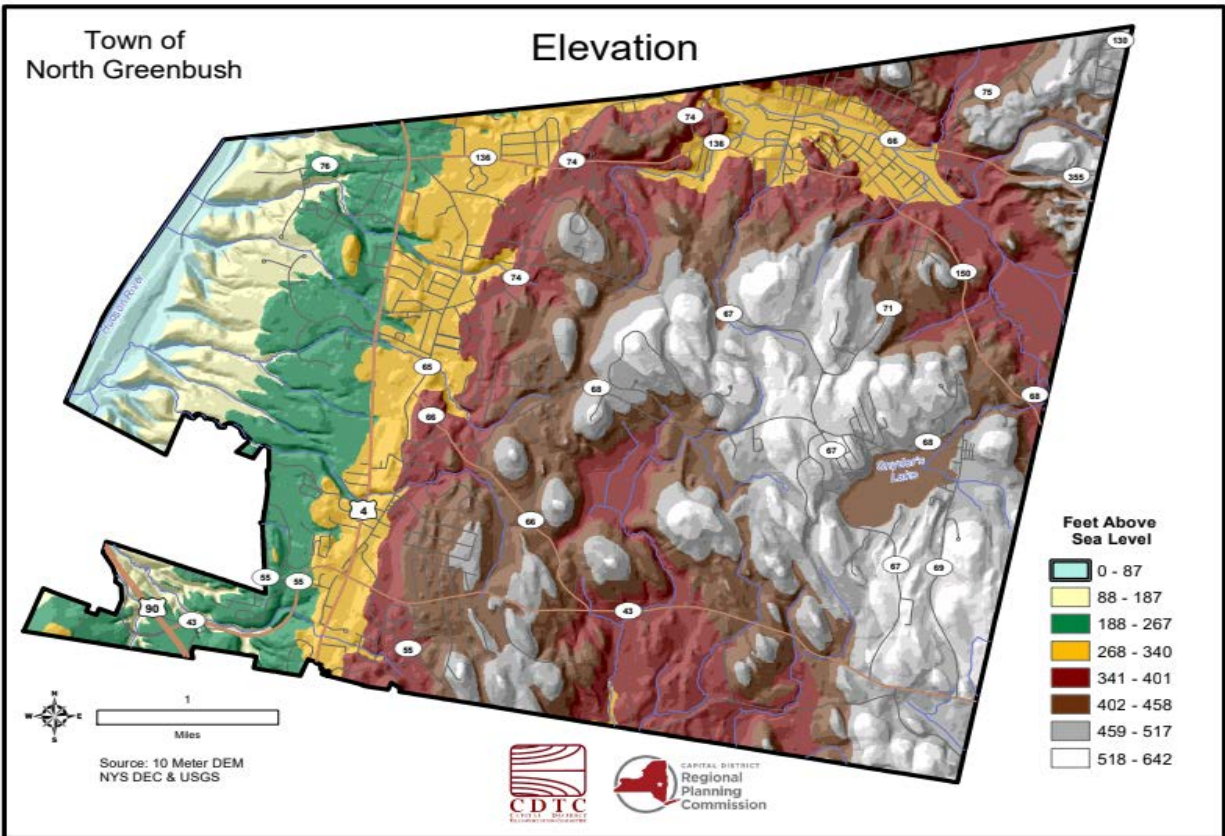
For more detailed, interactive viewing of orthoimagery dating back to 1994, users can visit the Discover GIS Data NY website at <https://orthos.dhSES.ny.gov/>.



**Map #3: Infrared Air Photo**

This map is an infrared air photo of the Town of North Greenbush. In an infrared photo, intense bright red tones typically represent vigorous growing and dense vegetation that is producing a large amount of chlorophyll. Lighter tones of red indicate the presentation of vegetation that does not contain as much chlorophyll, such as fields nearing the end of the growing season, and dead or unhealthy plants. White, blue, green, or tan colors typically represent soils, with darker colors indicating soils with higher moisture levels or organic matter. Finally, dark blue to black coloring indicates water. Here, the map shows a mix of mostly red and blue coloring, indicating areas of growth in vegetation, as well as areas of soil. The map also illustrates a few areas with blue coloring, which represents the presence of water in the town, most notably at Snyder's Lake, the Hudson River, and the gravel pits in the northwest portion of town.

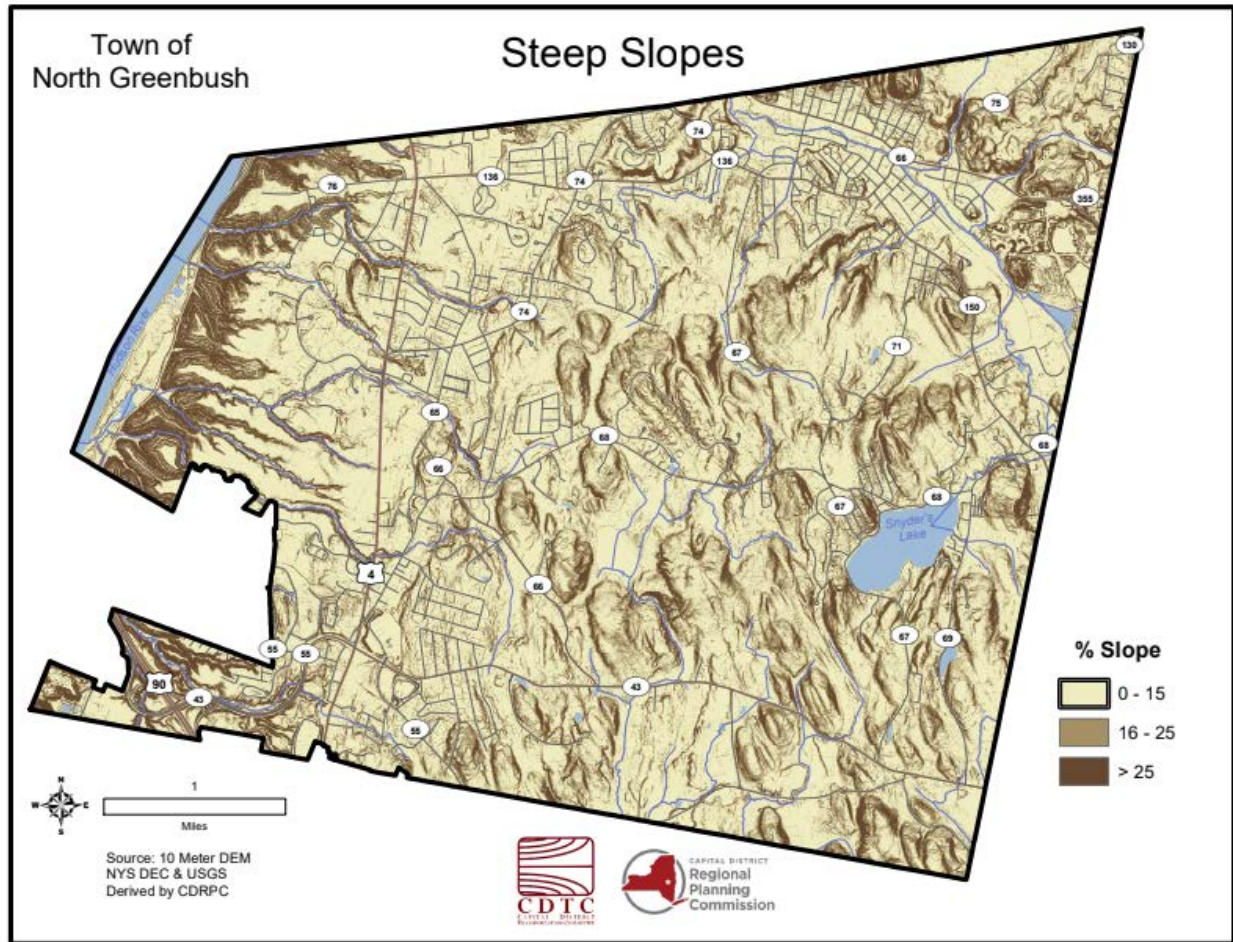




**Map #4: Elevation**

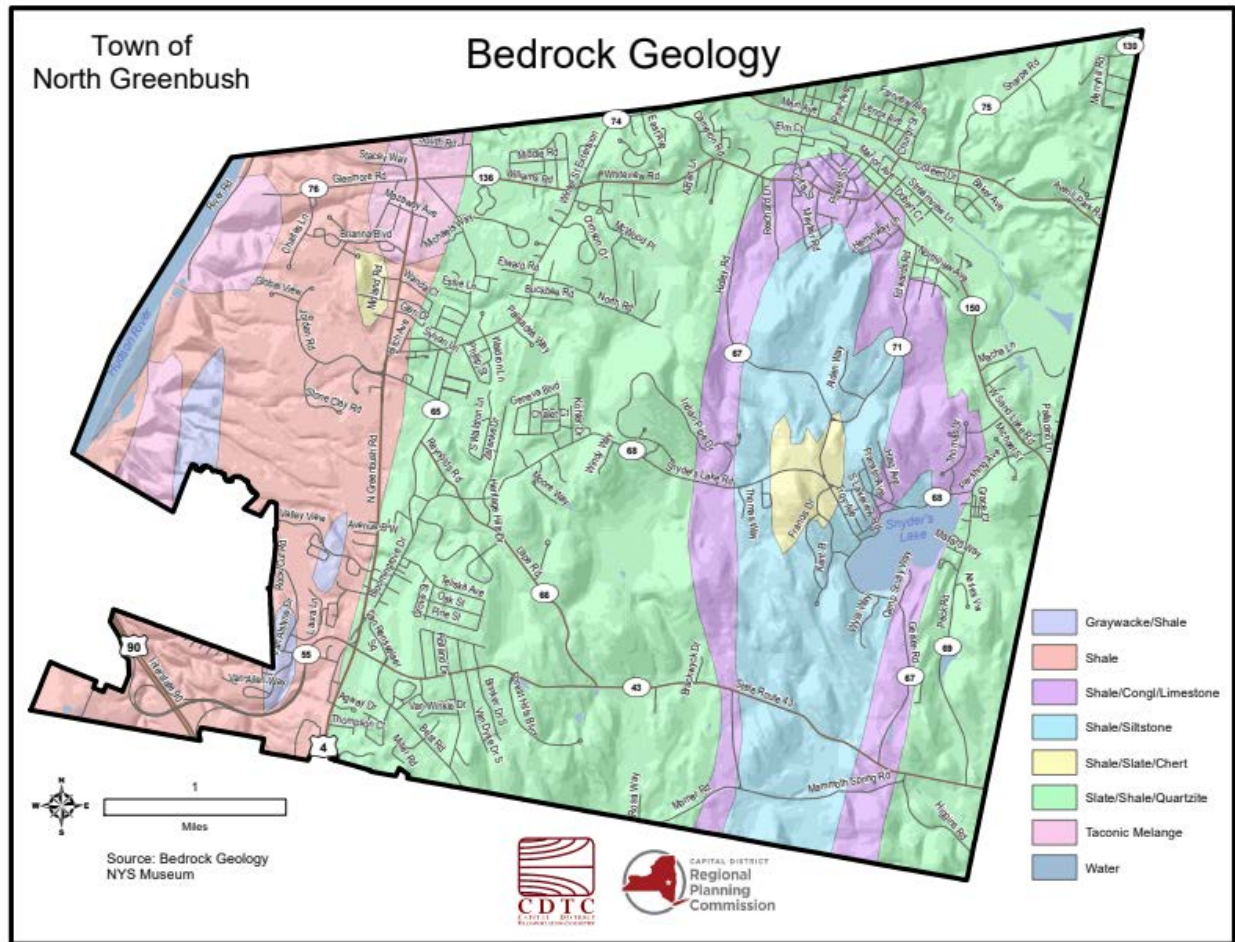
Rensselaer County is an area with varying elevations due to its proximity to the Rensselaer Plateau and the Taconic Mountain Range, which is part of the larger Appalachian Mountain Range that stretches along the east coast. The topography within the Town of North Greenbush is predominantly gently rolling land, with higher elevations located in the town's eastern half where topography rises to meet the Rensselaer Plateau. The town's elevation ranges from 0 feet above the base level along the Hudson River to areas above 600 feet elevation associated with the large hills/small mountains generally contained within the eastern half of town. Around County Routes 74 and 65, the land levels off slightly before becoming steeper along the eastern banks of the Hudson River. The variation in the town's topography reflects differences in the underlying geology and has been an important factor influencing the location of development. The land along the Hudson River is closest to the base elevation. The elevation generally increases going from west to east.





**Map #5: Steep Slopes**

As illustrated on Map 5, the Town of North Greenbush has areas of varying slope steepness. A significant portion of the town has slopes between 0 and 15 percent. The town's steep slopes are associated with the ravines along the Hudson River in the western portion of the town and the side slopes of the hilly areas throughout the eastern half of town. The steeper slopes associated with the ravines along the Hudson River are on average 100 feet high and the Rensselaer Tech Park maintains much of this area as open space. Once you move to the east of the land along the Hudson River, most of the town's land is sloped somewhere in the 0 to 15 percent range. According to the U.S. Geological Survey (USGS) and the Natural Resources Conservation Service (NRCS), approximately 13 percent of the town has slopes between 15 and 35 percent.



**Map #6: Bedrock Geology**

This map depicts the bedrock geology in North Greenbush.

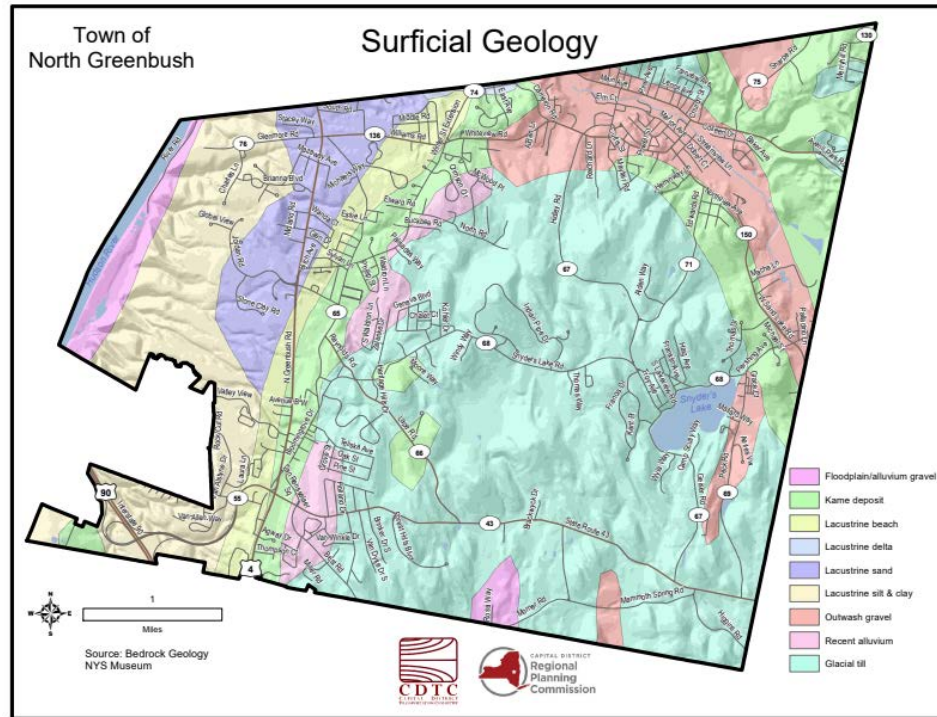
The western portion of North Greenbush has bedrock composed mostly of shale (indicated in red coloring). There are also smaller patches of Taconic Melange bedrock (indicated in pink coloring), most of which runs along the Hudson River near River Road and some of which is located near the intersection of Route 76 and Glenmore Road, Route 136, and North Greenbush Road. Three smaller patches of graywacke/shale (indicated in duller purple coloring) can be found in the southwestern portion of town near Van Allen Way, Van Alstyne Drive, and Valley View to the west of North Greenbush Road. One small mixture of shale/slate/chert bedrock (indicated in yellow coloring) can be found along Midland Road and off of Brianna Blvd.

The middle portion of North Greenbush is overwhelmingly a mixture of slate/shale/quartzite bedrock (indicated in light green coloring).

In the eastern portion of North Greenbush, a mixture of shale/slate/chert bedrock (indicated in yellow coloring) can be found along Route 68 between Thomas Way and South Lakeview Road. Surrounding that is a shale/siltstone mixture (indicated in light blue coloring) that stretches on its southwestern border from Morner Road north to the end of Reichard Lane at its most northwestern tip, east to Hemingway Lane at its most northeastern tip, and south along Snyder's

Lake to Mammoth Spring Road. Finally, surrounding this area is a mixture of shale/congl/limestone bedrock (as indicated in a brighter purple coloring).





**Map #7: Surficial Geology**

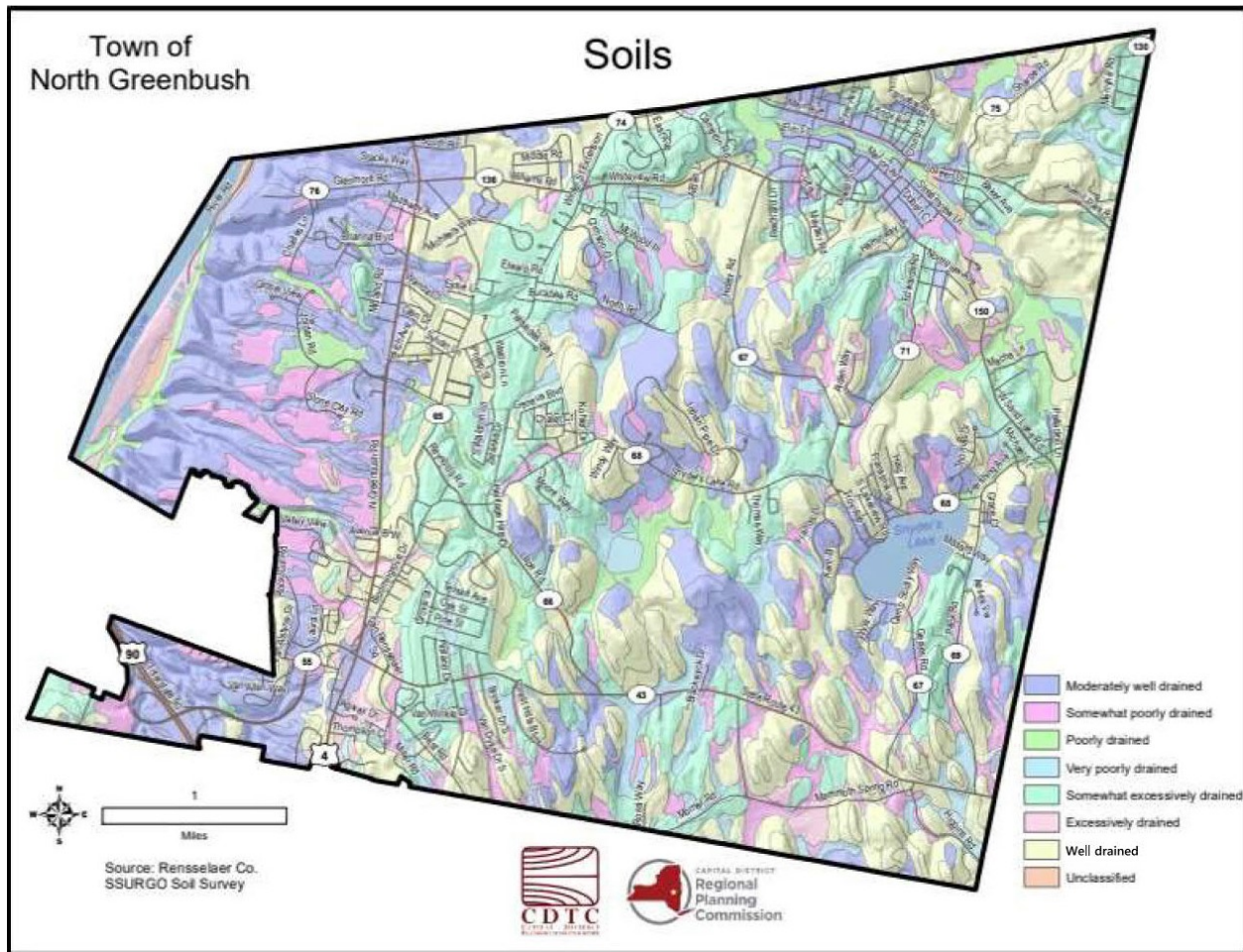
This map depicts the surficial geology of the Town of North Greenbush.

The surficial geology of North Greenbush consists mostly of glacial till as identified with a teal color on the map. The entire center portion of the town is glacial till and continues in small patches to the northeast corner of the town. Glacial till is material accumulations of unsorted, unstratified mixtures of clay, silt, sand, gravel, and small boulders.

Outside of the center of town, patches of recent alluvium (light pink) are found. Alluvium is a term for clay, silt, sand, gravel, or similar material that is deposited by a stream or other body of moving water. The term recent alluvium indicates deposits made during a comparatively recent geologic time. Patches of outwash gravel (identified with peach color) occur in the south, east and northern portions of town. Outwash gravel tends to be deposits of sand and gravel that have been carried by running water. Additionally, there is a small border of kame deposit (identified with green color). Kame deposits are sand and gravel deposits that build up into mounds as more sediment was deposited on top of old debris.

Areas of lacustrine silt and clay (yellow) and lacustrine sand (purple) occur in the western portion of town. Lacustrine soil is uniform in texture but variable in chemical composition and was formed by deposits in lakes which no longer exist. Finally, two areas of floodplain/alluvium gravel (dark pink) occur. One is in the southern portion of town and the other is along the Hudson River in the western portion of town.





**Map #8: Soils**

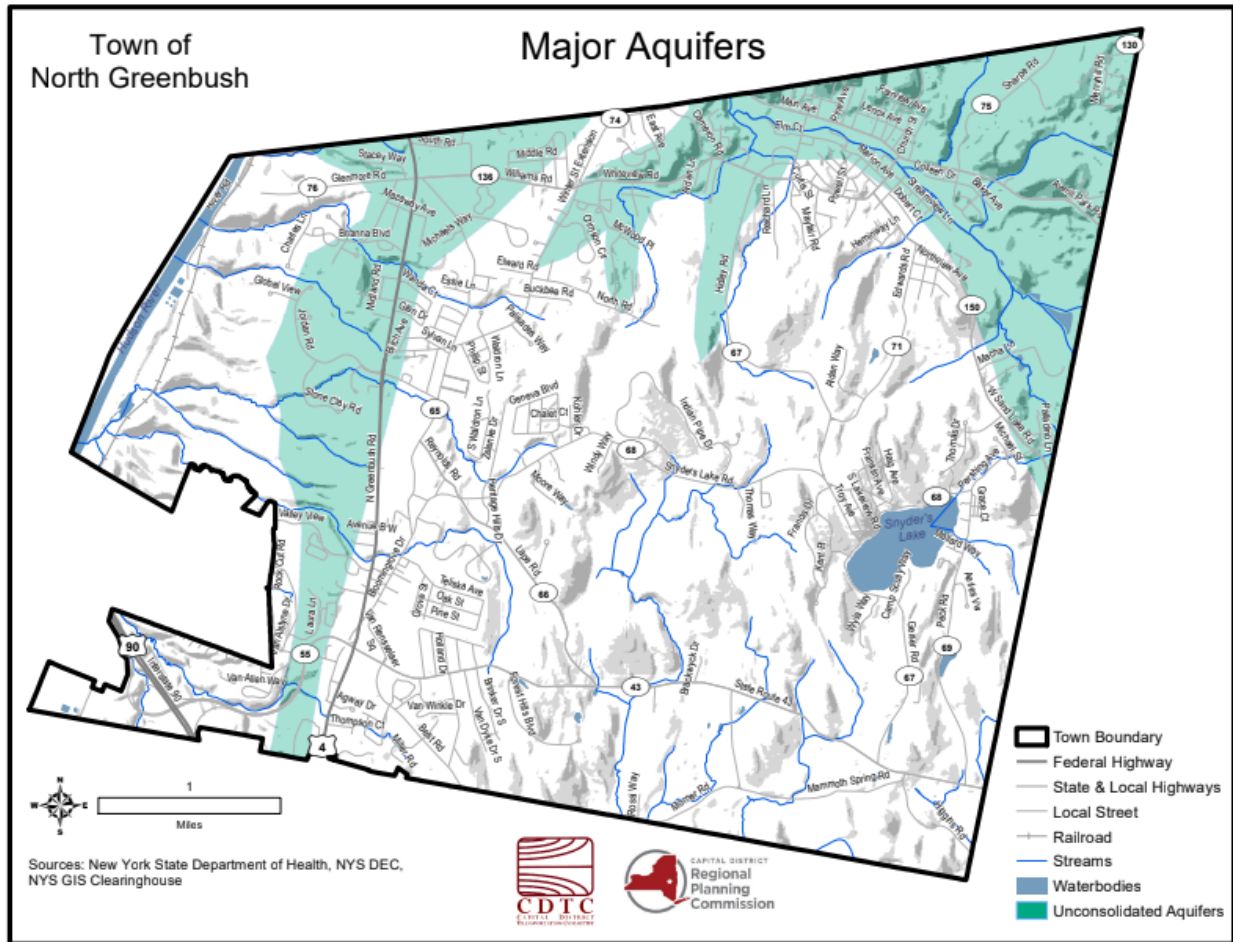
The Natural Resources Conservation Service, a division of the U.S. Department of Agriculture, maintains a soil survey of the generalized types of soil for each state. According to the general soils information for North Greenbush, the predominant soil type is categorized as Bernardston gravelly silt loam (BeC), which encompasses approximately 2,470 acres, or 20 percent, of the land. These soils are primarily located west of County Road 65, approximately above 40 feet in elevation.

The other primary soils found in North Greenbush include Pittstown gravelly silt loam (PtC); Hudson silt loam, steep (HuE); Rhinebeck silt loam (RkB); and Nassau-Manlius complex, rolling (NaC). Hudson silt loam is the primary soil found along the Hudson River shoreline and tends to have slopes of 25-35 percent. Generally, most soils in North Greenbush are well-drained with the perched water table depth at approximately 2 feet. Discerning the type of soil is important for any future development as different soil types will require different engineering regarding the structures under proposal for the area. Certain soil types might be more or less conducive to different methods of construction and varieties of buildings.

As shown on the map, the soils running along the Hudson River and the western part of North Greenbush are mostly moderately well drained soils, with somewhat poorly drained or poorly

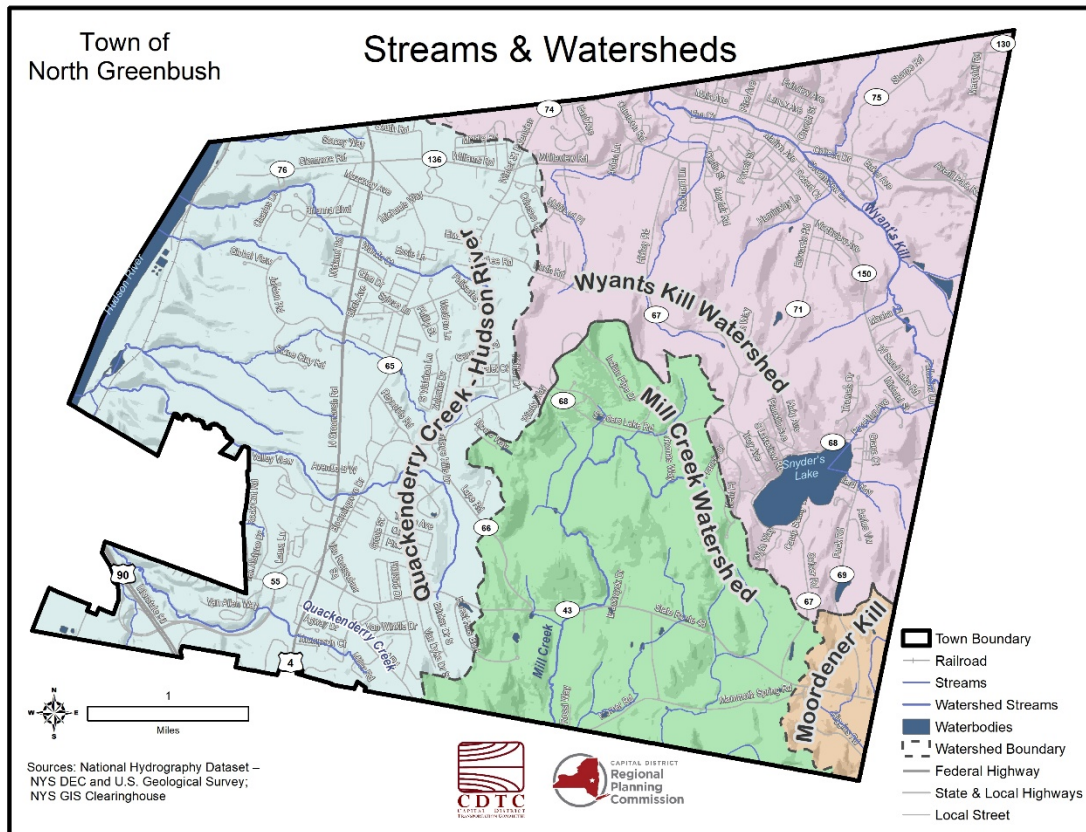


drained soil areas mixed in. Moving east from the Hudson, North Greenbush is a mosaic of soils ranging from excessively drained to very poorly drained.



**Map #9: Major Aquifers**

This map shows surface water bodies and subsurface water in the major aquifers in North Greenbush. The northernmost part of North Greenbush features unconsolidated aquifers. The unconsolidated aquifers also stretch from the northwest portion of North Greenbush southward, paralleling North Greenbush Road. There are also several streams throughout North Greenbush. Finally, there are two large water bodies encompassed in North Greenbush. The first is Snyder's Lake, which is in the eastern part of North Greenbush near the intersection of Routes 68 and 69. The Hudson River runs parallel to River Road along the western side of North Greenbush.



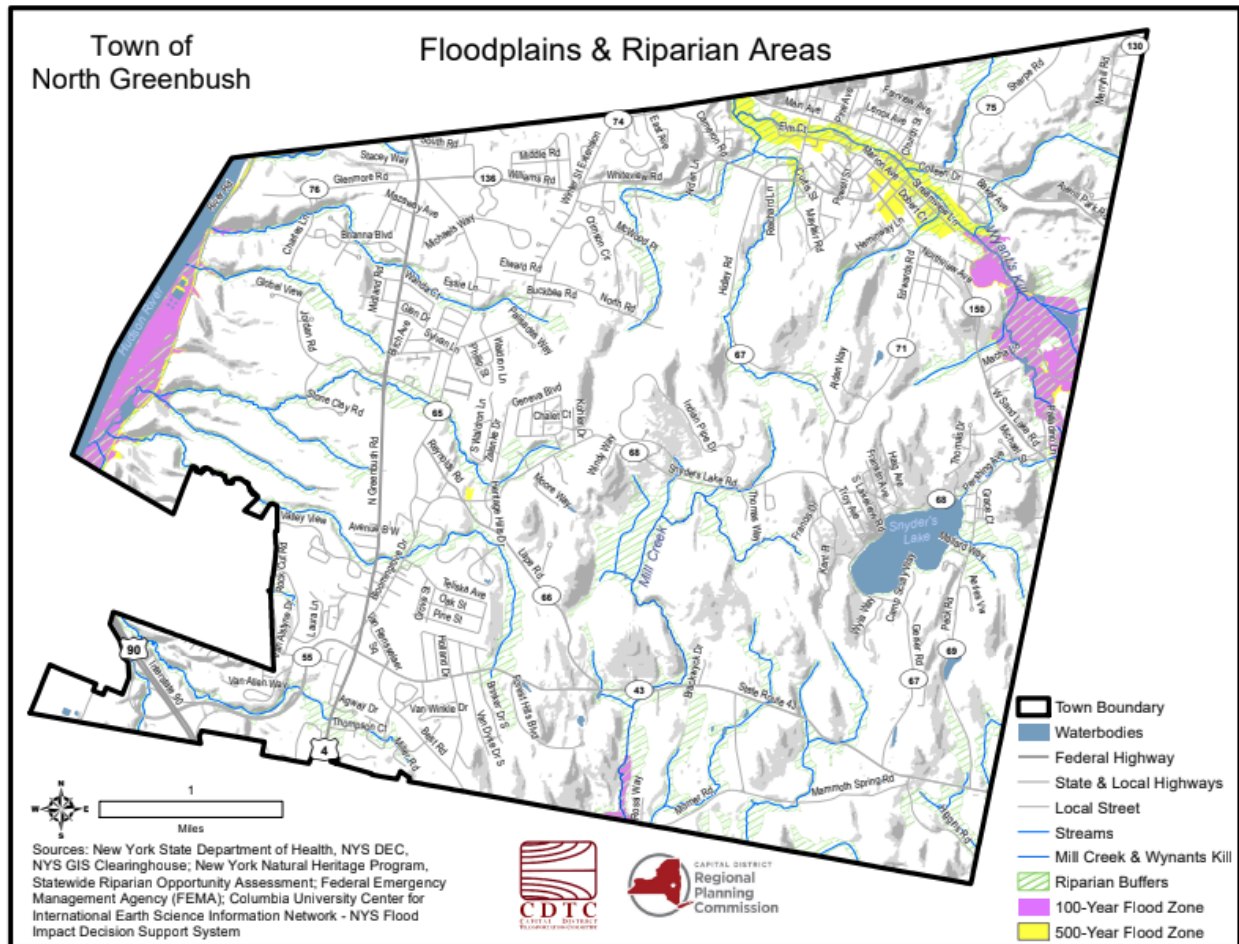
**Map #10: Streams & Watersheds**

This map depicts the streams and watersheds in North Greenbush. A watershed is the area of land that drains to a particular feature, such as a stream, pond, or wetland. The map features four watersheds: (1) Quackenderry Creek - Hudson River Watershed; (2) Wynants Kill Watershed; (3) Mill Creek Watershed; and (4) Moordener Kill Watershed.

- The Quackenderry Creek - Hudson River Watershed extends east from the Hudson River just over two miles, encompassing the approximate western half of North Greenbush.
- The Wynants Kill Watershed begins where the Quackenderry Creek - Hudson River Watershed ends and continues to the northeast tip of North Greenbush, encompassing a significant portion of the north and east portions of the town.
- The Mill Creek Watershed also begins where the Quackenderry Creek - Hudson River Watershed ends, but runs toward the southeastern tip of North Greenbush, encompassing the central and southern portions of the town.
- The Moordener Kill Watershed is located in the southeast corner of the town and is the smallest watershed in North Greenbush.

Various other smaller, unnamed creeks, streams, and tributaries exist throughout the town, especially within the steeper slopes of the Rensselaer Technology Park (Tech Park). Numerous smaller unmapped streams are present within the town and not shown on the map.





**Map #11: Floodplains & Riparian Areas**

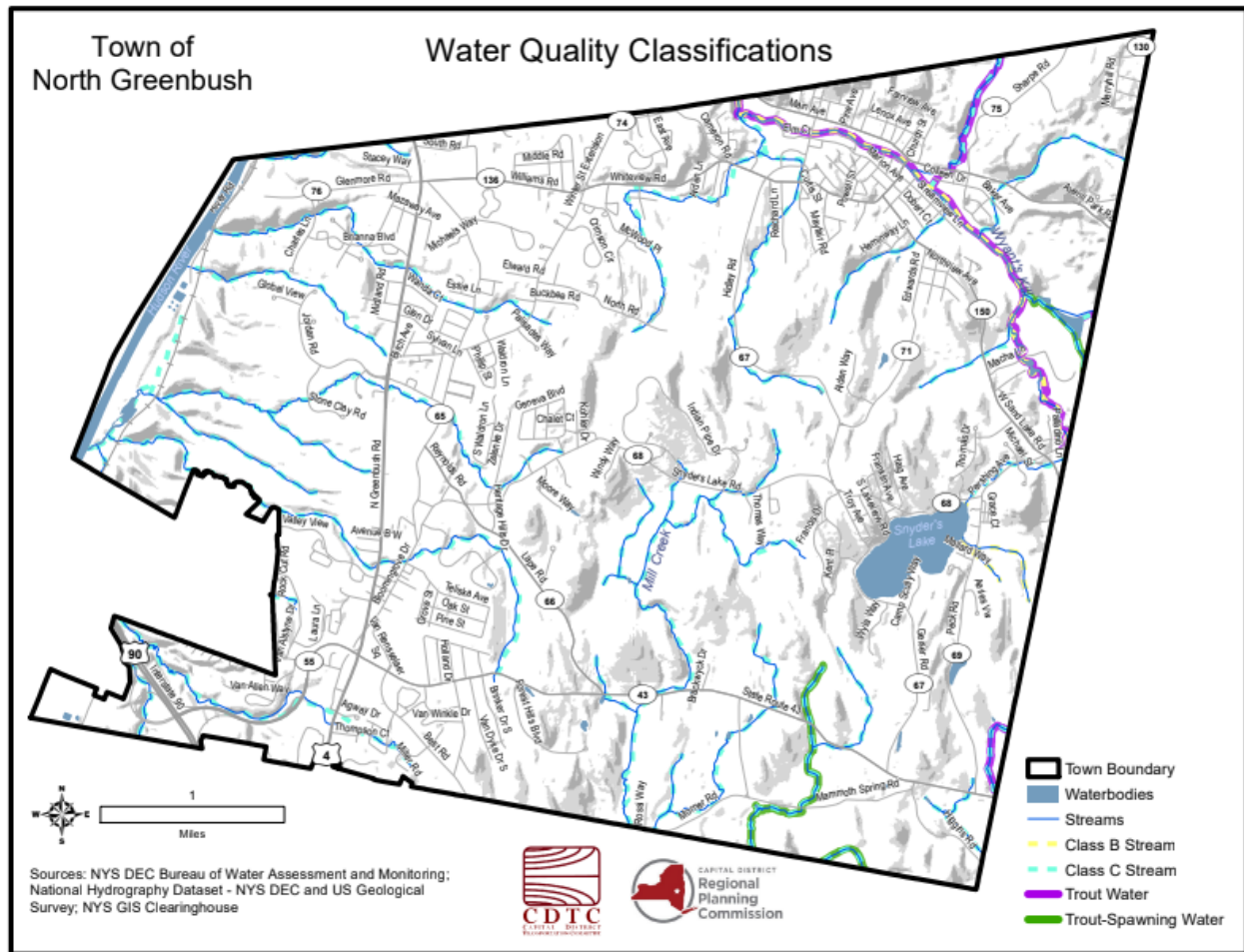
Areas that experience occasional or periodic flooding due to a nearby waterbody exceeding its natural capacity are known as floodplains. The Federal Emergency Management Agency (FEMA) maintains digital mapping records of floodplains for the entire country. As evidenced by the flooding that took place in Central and the Southern Tier of New York in June of 2006, this information is critical for future planning and development to minimize the potential for property damage and loss of life.

According to FEMA Flood Insurance Rate Mapping (FIRM), 100-year floodplains exist along the Wynants Kill, Mill Creek south of SR 43, and east of the Penn Central/CSX rail line along the Hudson River. A 100-year floodplain is the area in which the maximum level of flood water is expected to occur on average once every one hundred years or has a one percent chance of occurring in any given year. With the increasing pressure of climate change, those percentages are likely to go up in the future, meaning that the expectation is for the floodplains to reach the maximum level of flood water more often than every 100 years.

A 500-year flood zone also exists along a portion of the Wynants Kill, the Hudson River, and an unmapped tributary to the Hudson River located in the west-central portion of the town. A 500-

year floodplain is the area in which the maximum level of flood water is expected to occur on average once every five hundred years or has a 0.2 percent chance of occurring in any given year.

The Town of North Greenbush is located along the Hudson River Basin, which encompasses 13,400 square miles in New York, New Jersey, Massachusetts, Connecticut, and Vermont. The Hudson River begins in Lake Tear of the Clouds on Mount Marcy in the High Peaks of the Adirondacks and flows south to connect with the Mohawk River before ending in New York City and the Atlantic Ocean. North Greenbush has approximately 2.2 miles of shoreline along the river, making it the town's most prominent water feature. The river is used for various recreational activities and is also a major transportation corridor to the Great Lakes. Other major streams or creeks in North Greenbush include the Wynants Kill and Mill Creek. The Wynants Kill is a larger creek which flows westerly through the hamlet of Wynantskill in the northeastern corner of the town. Mill Creek begins in the central portion of the town and flows southerly before joining the Hudson River in East Greenbush. Numerous other mapped and unmapped streams occur throughout the town and are likely to have associated floodplains and riparian areas.



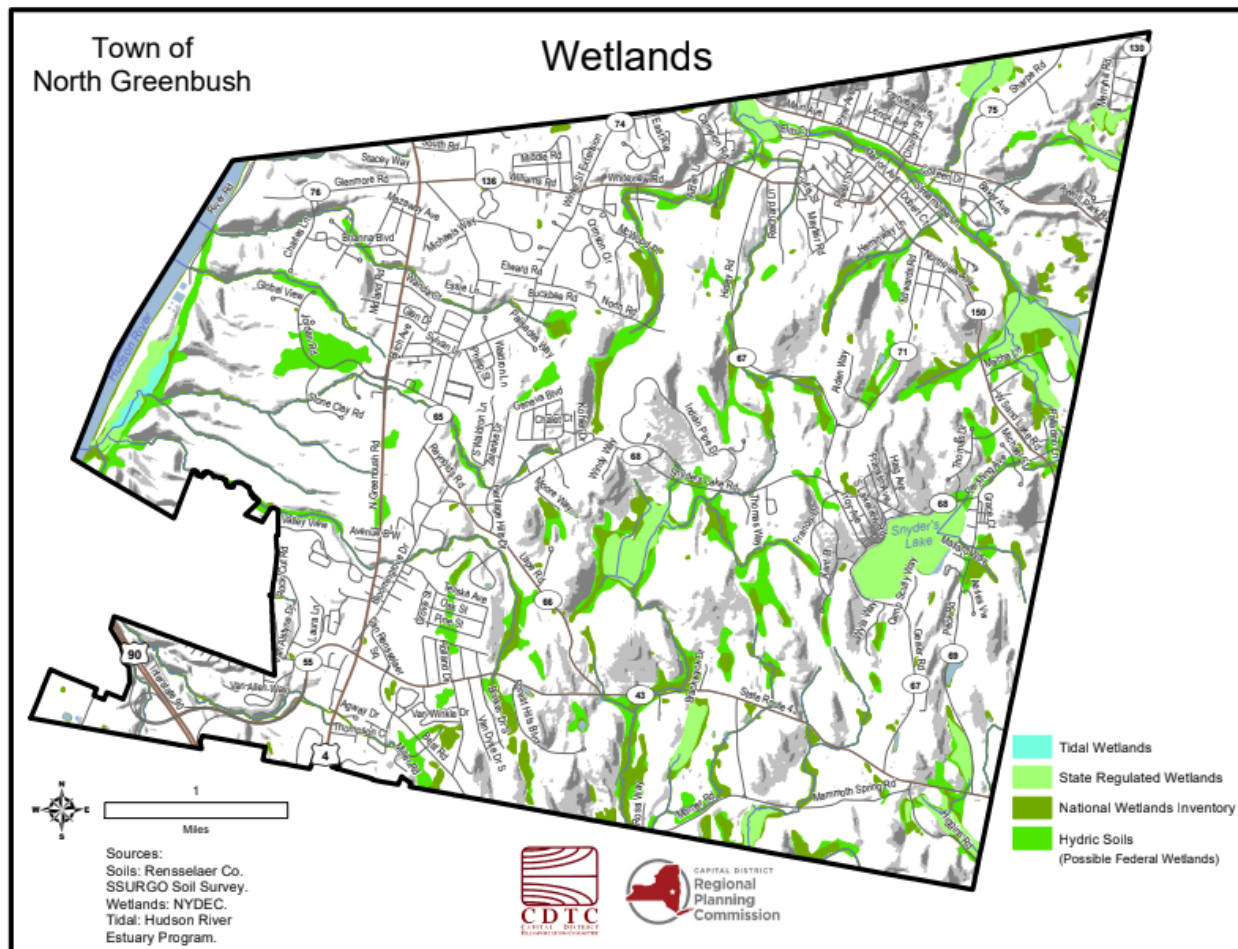
**Map #12: Water Quality Classifications**

The New York State Department of Environmental Conservation (DEC) monitors water quality via several statewide programs. As identified on the map, most of the streams in North Greenbush are classified as C streams by the DEC. A water classification is not necessarily an indication of good or bad water quality, but rather what the best uses for that body of water are. A C classification means the designated best uses are for fishing and that the streams are suitable for fish propagation and survival.

Waters suitable for trout and trout spawning are further identified. There are trout-spawning stream waters in Mill Creek and its tributaries, located in the southeastern part of North Greenbush. The Wynants Kill is classified as containing B waters in the northeastern portion of North Greenbush. A classification of B means that the waters best uses are for primary and secondary contact recreation and fishing. These northeastern streams also contain trout with at least one tributary identified as trout-spawning water. Snyder's Lake is a class B lake. The lake is characterized as mesoeutrophic, or moderately productive, and conditions have been relatively stable. However, phosphorus levels in the lake can occasionally exceed state guidelines. Furthermore, the DEC assesses the overall quality of water, including causes of waterbody impairment. The DEC regards the waters of the Hudson River as impaired due to the presence of such pollutants as PCBs, dioxin, heavy metals, and other toxins. Snyder's Lake is found to have



minor impairment due to occasional algal blooms and weed growth due to the phosphorus levels. Both the Wynants Kill and its tributaries along with Mill Creek and its tributaries are not known to be impaired. Other minor tributaries and streams remain unassessed.



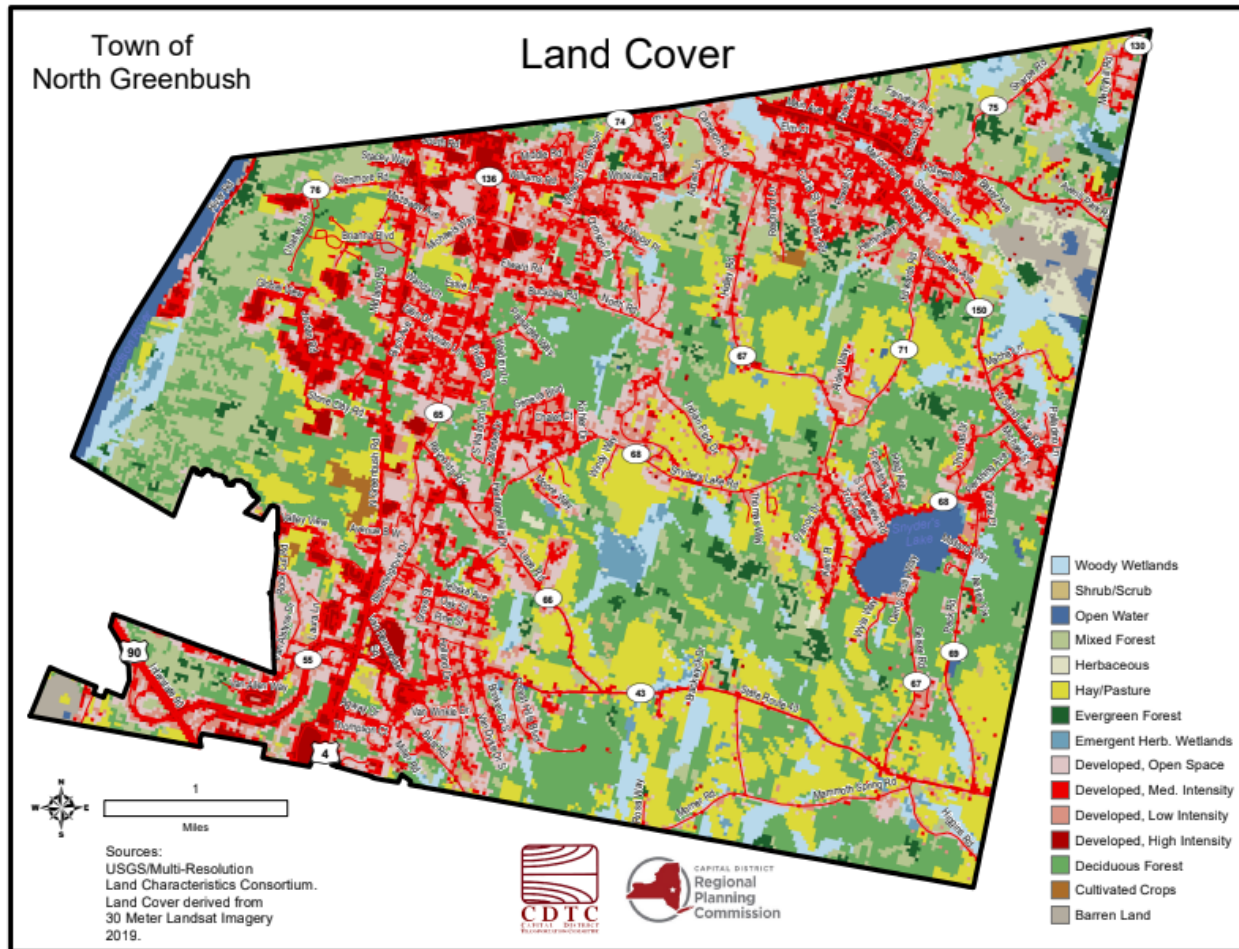
**Map #13: Wetlands**

Wetlands are areas that may be consistently or seasonally saturated by surface or groundwater. They support distinct vegetation that is adapted for life in the saturated soil conditions found in wetland areas. Wetlands play a vital role in the ecosystem from filtering groundwater and runoff to providing food for larger species to providing a unique habitat for various forms of wildlife. Wetlands help control flooding, reduce damage from storm surges, recharge groundwater, purify and filter surface water, and provide areas of recreation. The DEC regulates freshwater wetlands that are 12.4 acres (5 hectares) or greater in size or, if smaller, have unusual local importance as determined by the DEC commissioner. According to digital mapping, the town has approximately 436 acres of wetlands spread throughout the town, primarily located in the eastern portion of the town and along the southern half of the Hudson River shoreline. The DEC also classifies Snyder's Lake as a wetland, encompassing 112 acres. Wetlands regulated by the United States Army Corps of Engineers (USACE) and the U.S. Fish and Wildlife Service (USFWS) are also located in the town. These wetlands tend to be smaller in size and the majority are found in the same location as DEC regulated wetlands. Similar to State wetlands, Federal wetlands are located primarily in the eastern portion of the town.

The wetlands along the Hudson River are freshwater and tidal. There are at least 14 acres of tidal wetlands in the town. North Greenbush also contains forested wetlands and swamps, especially along the Wynants Kill, Mill Creek, their tributaries, and many other streams. Such wetlands

provide flood control, water quality protection, and habitat protection. Note that State and Federal wetlands mapping is approximate and not all-inclusive. An onsite wetland reconnaissance by a wetland professional is required to determine whether wetlands are present in an area.





**Map #14: Land Cover**

The land cover of North Greenbush ranges from high intensity development to areas of pastureland, forest, wetlands and open water. The developed sections of North Greenbush, including high, medium, and low intensities, along with developed open space are mostly in an arc that extends from the northeast to the southwest of the town. There is also high, medium, and low intensity development clustered around Snyder's Lake. Much of the central, eastern, and southern areas of North Greenbush are composed of pasture or deciduous forest. There are areas of woody wetlands and emergent herb wetlands along the Hudson River, and otherwise in patches among the central, eastern, and southern areas, with some scattered areas in developed areas in the north of North Greenbush. The two significant areas of open water are the Hudson River, which forms part of the western border, and Snyder's Lake in the east of town.

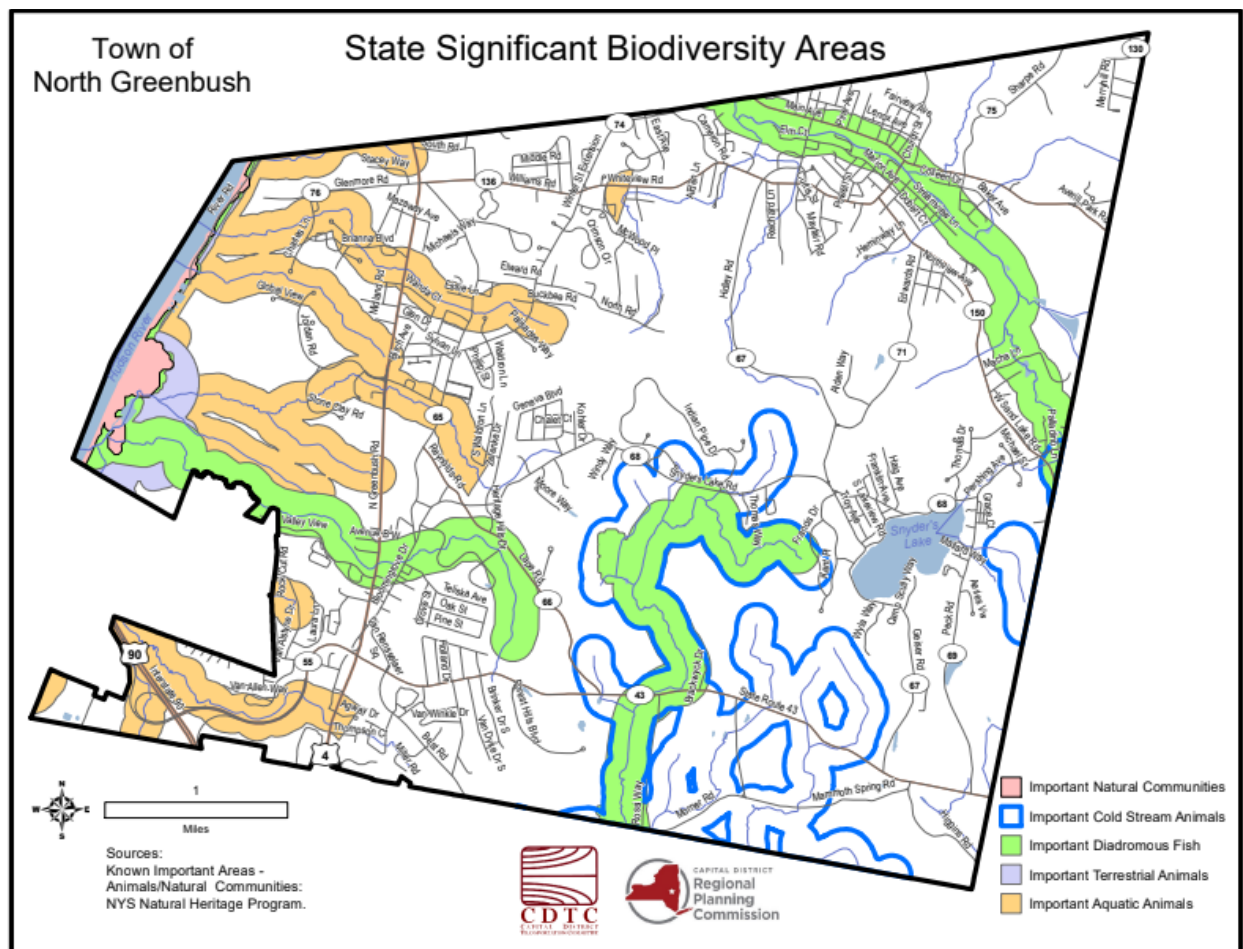
The five largest components of the land cover in town are deciduous forest that covers 22 percent of the land; hay and pasture, which covers 17.4 percent of the land; developed open space, consisting of 12.7 percent of the land; low intensity development, making up 12.5 percent; and mixed forest that covers 12.1 percent of the land.

Other significant land cover includes medium intensity development, covering 8.9 percent of the land. Woody wetlands cover 4.8 percent of the land and evergreen forest composes 2.3 percent of the land. All other types of land cover fall below 2 percent of the land cover.

The most ecologically significant forest in North Greenbush occurs along the Hudson River shoreline, protecting the floodplain and steep clay bluffs and ravines surrounding the Rensselaer Technology Park. (Tech Park). The cumulative area of core forest in North Greenbush exceeds 500 acres and likely supports many area-sensitive forest-interior wildlife species. Another significant forested area is south of Mammoth Spring Road, which extends over 1,100 acres into East Greenbush.

The hay, pasture and herbaceous areas support a variety of wildlife, including rare plants, butterflies, birds, and other animals. In addition, they provide agricultural uses and scenic value to the town. Including areas of hay, pasture, and cropland, the herbaceous land cover makes up approximately 18 percent of the land in North Greenbush.

Shrublands are transitional habitats containing no or very few mature trees. In North Greenbush, there are around 11 bird species of conservation concern, such as the American woodcock, ruffed grouse, and blue-winged warbler, that prefer shrubland as their habitat of choice.



**Map #15: State Significant Biodiversity Areas**

All the land in North Greenbush ultimately drains into the Hudson River Estuary, a globally rare ecosystem which stretches from Troy to New York Harbor. The most biodiverse areas of state significance in the town are in the western part, along the Hudson River and its tributaries within the Tech Park. The town's only state significant natural communities and important terrestrial animals are found in the Tech Park. Important aquatic animals and diadromous fish are also found there, as well as in other tributaries of the Wynants Kill and Mill Creek. Mill Creek and its tributaries also contain important cold stream animals, found also in the short stream east of Snyder's Lake.

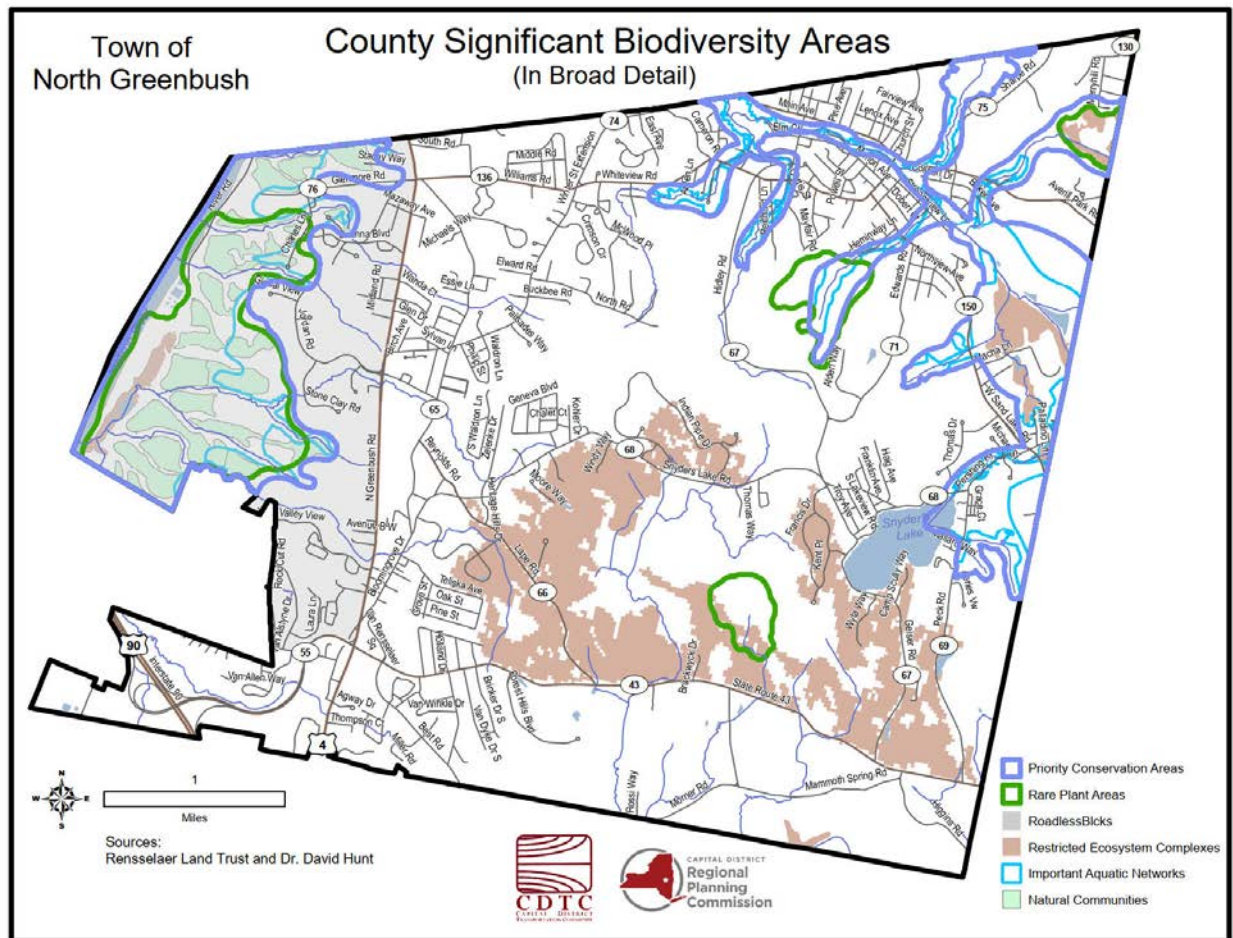
DEC Staff from the Hudson River Estuary Program prepared a natural habitat summary in 2021 which is much more detailed. This summary has not been included.

Diadromous fish are born in freshwater areas and then live most of their lives in saltwater, and return to freshwater and spawn. Diadromous fish that spawn in the Hudson River Estuary and its tributaries are the Atlantic sturgeon, shortnose sturgeon, blueback herring, and American eel. Alewife floaters, a state-rare mussel, have also been documented near North Greenbush.

The Estuary and its tributaries also support a high diversity of fish, birds, and mammals, including bald eagles, a threatened species in New York. Several state-rare dragonflies and damselflies have been documented in neighboring communities, and may occur in North Greenbush. These species are sensitive to water contamination and hydrological alteration.

The wood turtle, an animal of special concern in New York, is found along stream corridors in North Greenbush. Native brook trout, a coldwater stream animal, is found in Mill Creek and its tributaries. There is a region-wide decline in coldwater streams due to habitat loss, degradation, and fragmentation. Their presence in North Greenbush is a valuable resource to be preserved.





**Map #16: County Significant Biodiversity Areas**

This map depicts areas of county significant biodiversity as assessed by Dr. David Hunt and identified in the Rensselaer County Conservation Plan (Rensselaer Land Trust, 2018). Rare plant areas, natural communities, restricted ecosystem complexes, and important aquatic networks are found along the Hudson River in the west of North Greenbush. The other important aquatic network is the Wynants Kill and portions of its tributaries. Portions of two of the tributaries of the Wynants Kill are also surrounded by rare plant areas. One of these rare plant areas (in the far northeast corner of the Town) is also within a restricted ecosystem complex. Another rare plant area is in the southern part of the town, in the (unlabeled) Mill Creek watershed. There are connected restricted ecosystem complexes located mostly between Route 43 to the south, Lape Road in the west, Snyder's Lake Road in the north, and Peck Road in the east. There is also a restricted ecosystem complex to the east of Route 150 and north of Snyder's Lake. Roadless blocks are west of Route 4.

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### **Map 16A & 16B: County Important Biodiversity Areas (In Finer Detail)**

These maps, like Map 16, were generated from the mapping done for the Rensselaer Land Trust's Rensselaer County Conservation Plan. They show additional data that was too detailed to illustrate on the County Significant Biodiversity Areas (In Broad Detail) Map. Because of the extensive information shown, the data was illustrated on two maps for ease in reading.

### **Map 16A Composite County-Important Biodiversity Sites: Most Important Layers on Top**

There are several natural communities concentrated near the Hudson River in the western part of the town of North Greenbush. The communities include tidal river, freshwater tidal swamp, riverside bluff, Appalachian oak-hickory forest, successional southern hardwoods, priority conservation sites, important aquatic networks, important natural corridors, and roadless blocks.

These corridors link the riverside communities with the Wynants Kill and its tributaries in the northeastern part of the town. The Wynants Kill corridor connects to two other natural corridors in the town which extend into the bog lake communities of Moules Lake in the northeast corner of the town. They further extend to important animal habitat in the northeast part of the town, to the watersheds of the Poesten Kill and Moordener Creek, into the neighboring Town of Brunswick to the northeast, the Towns of Poestenkill and Sand Lake to the east, and to East Greenbush to the south. Another natural corridor connects the Hudson River natural communities with the Mill Creek Watershed in East Greenbush.

Within the southern half of the town are the North Greenbush grasslands, a lowland grassland ecosystem complex.

### **Map 16A Composite County-Important Biodiversity Sites: Most Important Layers on Bottom**

On this map the connections of the natural corridors with the various communities are easier to see. Features shown include, but are not limited to, the tidal river corridor, important animal habitat, freshwater tidal swamp, and rare plant concentration areas within natural communities near the Hudson River. Other features on this map include rare plant areas around Moules Lake in the northeast corner of the town, and near a tributary to the Wynants Kill. A mineral soil wetland complex is in the northeast part of the town.

The following details are provided to aid in a better understanding of the features illustrated on Maps 16, 16A and 16B. Further details relating to significant natural communities and other important resources can be obtained from the DEC website.

### **Rare Plant Concentration Areas**

Rare plant concentration areas are defined as sites with generally five or more plant species that are considered rare. A rare plant species is defined as one that has 100 or fewer locations, or less than 10,000 individuals in New York State; or a species that has been documented in the State in the past but has not been seen since before 1980. Among these rare species, those that have 20 or fewer locations, or less than 3,000 individuals, are given the highest conservation priority. Rare plant concentration areas are often found in rare or uncommon natural community (habitat) types.



### **Significant Natural Communities**

Natural communities can be thought of as different types of habitats, such as different types of wetlands or forests. In technical terms, a natural ecological community is a set of specific interacting plant and animal species that share a common physical environment, and this set of species in this environment repeats across a landscape. The New York Natural Heritage Program has classified the natural landscape of New York into 174 natural community types (Edinger, et al, 2014). Dr. Hunt mapped examples of each community type that were the most ecologically significant in Rensselaer County. Factors contributing to the significance of a natural community are large size, intact condition (i.e., little disturbance, full range of native species, few invasive species), and natural condition of the surrounding landscape. Online guides with illustrated descriptions and conservation and management guidance for each community type are available at [www.guides.nynhp.org](http://www.guides.nynhp.org).

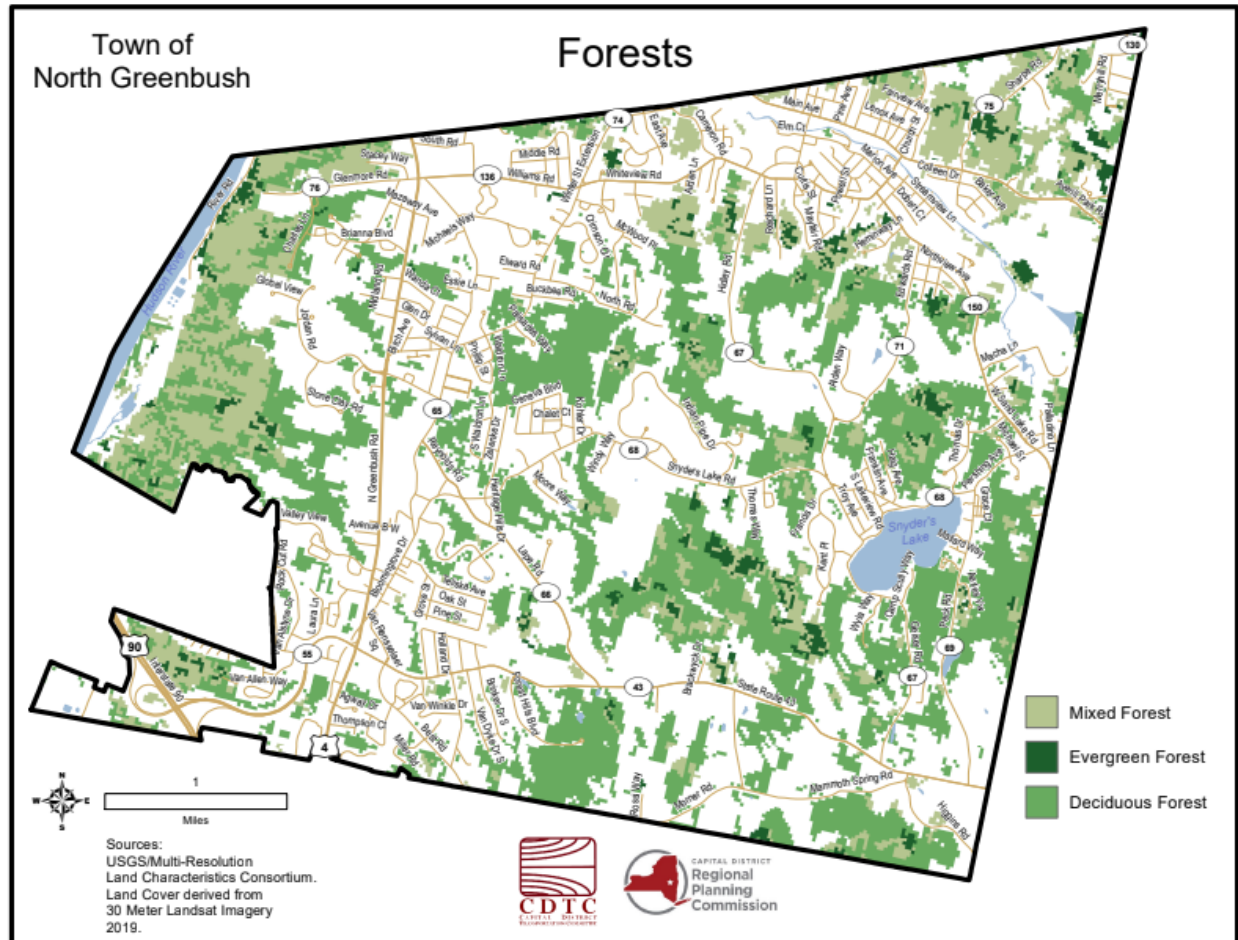
### **Restricted Ecosystem Complexes**

Ecosystem complexes are defined and mapped as groupings of natural community types that often co-occur together in discrete repeatable patches across a landscape or region due to unique combinations of underlying physical features (hydrology, geology, topography, and soils). While large areas of Rensselaer County are covered by common forest ecosystems, more local patches of other more unusual ecosystem complexes are scattered throughout the county; these ecosystems are of "restricted" distribution. These restricted ecosystem complexes contribute to the long-term conservation of native plants and animals that are characteristic of habitat types that are not common in the county, including many county-rare to uncommon species.

### **Important Aquatic Networks**

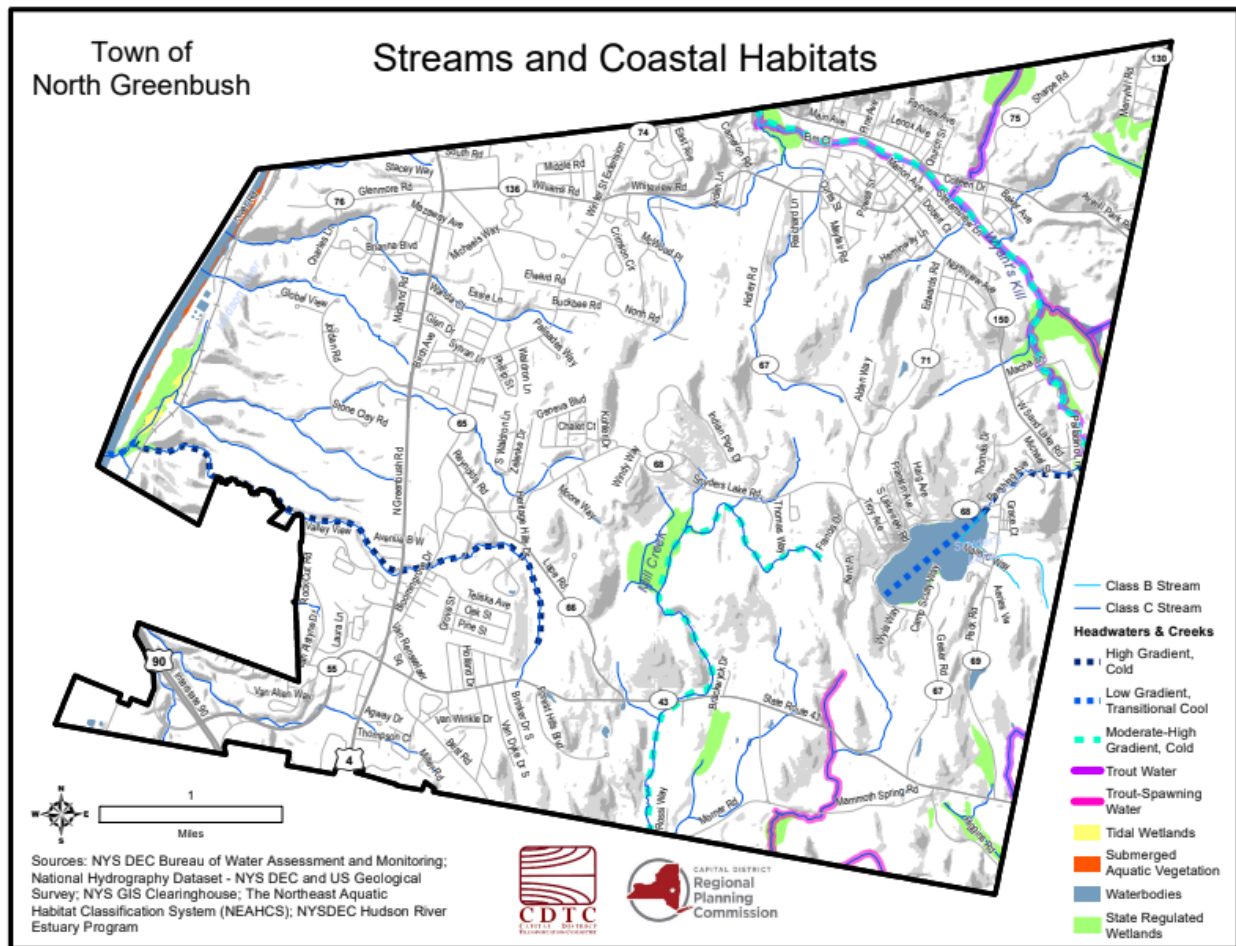
Aquatic networks are defined as stream systems with a high percentage of native aquatic plant and animal species and in good condition (especially with good water quality and unimpeded water flow), plus the most essential surrounding areas required to maintain those stream systems. Aquatic networks are made up of streams, connected lakes and wetlands, intact riparian corridors, and ecologically intact (forested) upland areas draining into the streams.

Maintaining intact aquatic networks will benefit the long-term conservation of native aquatic plants and animals (especially fish) that rely on unfragmented, long, and relatively little-disturbed river landscapes. Important aquatic networks also act as natural aquatic corridors.



**Map #17: Forests**

This map shows a broad overview of the forests of North Greenbush. Deciduous trees, such as maples, shed their leaves at the end of each growing season. Evergreen trees, such as pine, keep growing leaves as other leaves fall off so they remain “green” throughout the year. Mixed forests, shown in the lightest green, are forests that contain a mixture of deciduous and evergreen trees. Evergreen forests, shown in dark green, are forests dominated by evergreen trees. The middle green color shows deciduous forests, which are dominated by deciduous trees.



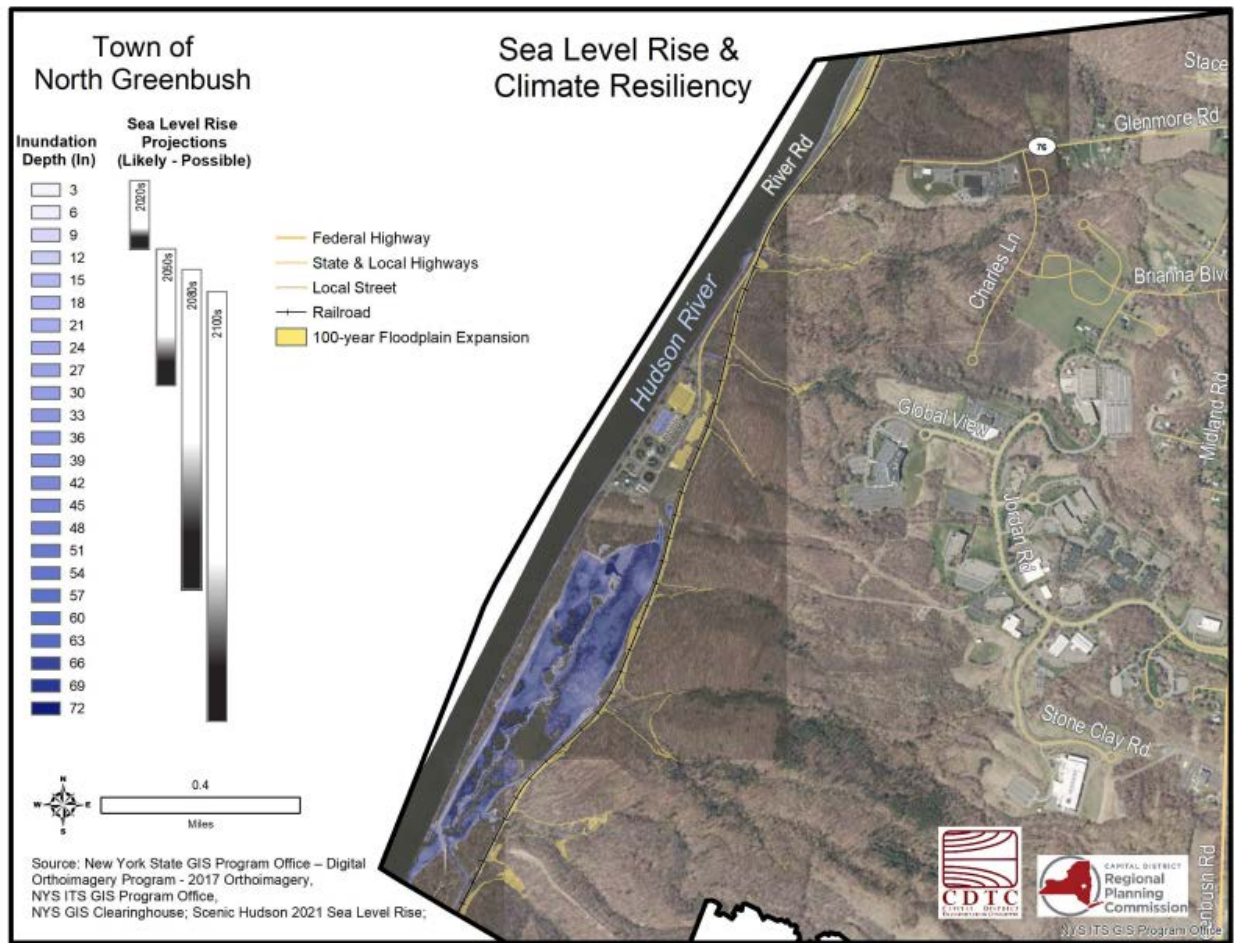
**Map #18: Streams and Coastal Habitats**

The Hudson River contains submerged aquatic vegetation, an important resource for juvenile fish. The tidal wetlands that occur along the Hudson River are freshwater, which is considered to be globally rare. The global rarity and their small extent in Rensselaer County make them extremely significant. The tributaries of the Hudson River in North Greenbush are Class C streams, meaning they are suitable for fish propagation and survival. One tributary in particular as shown on the map is a high gradient cold water stream. This means the stream contains cold, fast-moving water, which has high water clarity and is well oxygenated. High-gradient habitats are dominated by riffles and cascade and step-pool systems. The moderate-high gradient of Wynants Kill means it has cool, moderately fast-moving water. This type of habitat is defined by riffle-pool development with low sinuosity, moderate entrenchment, and moderately narrow valleys. Snyder's Lake and the tributaries that connect the Wynants Kill to it are low gradient transitional cool waters. These cool, slow-moving waters may have high turbidity and be somewhat poorly oxygenated. This type of habitat is usually dominated by glide-pool and ripple-dune systems with runs interspersed by pools and a few short or no distinct riffles.

There are also trout waters and trout spawning waters found in North Greenbush among the Wynants Kill, Mill Creek, and their tributaries in the southeast and northeast of town.

State regulated wetlands appear along the Hudson River, and also scattered among Mill Creek and its tributaries, and the Wynants Kill and its tributaries.



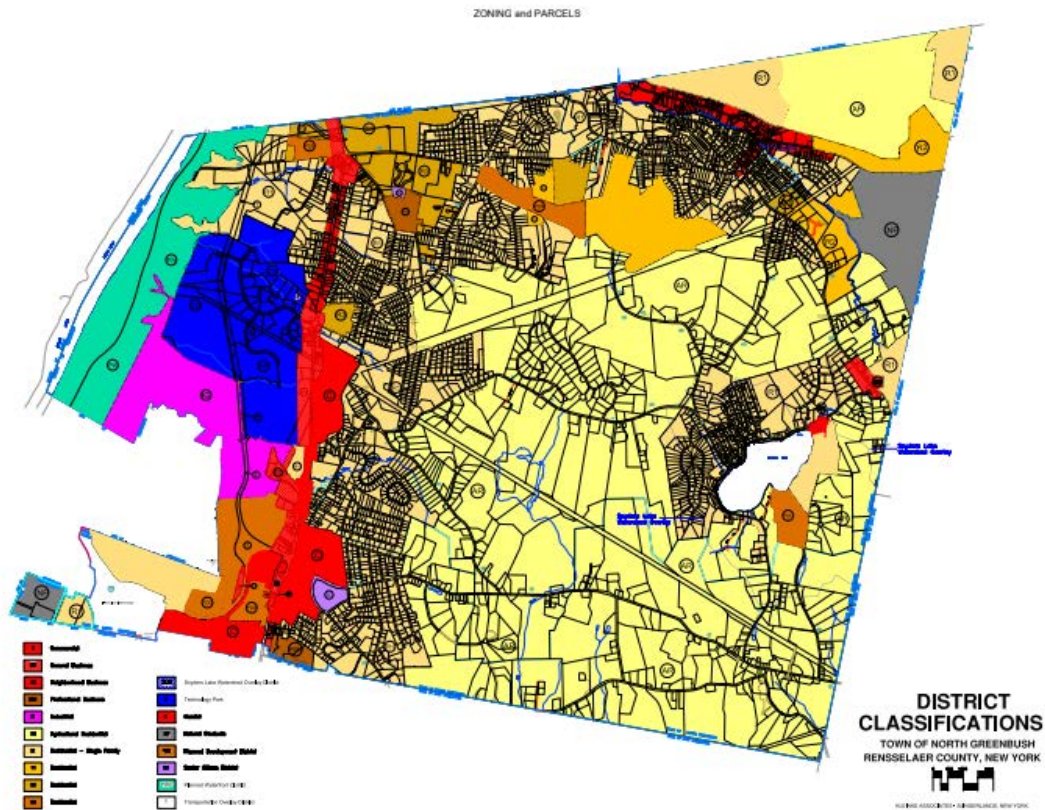


**Map #19: Sea Level Rise & Climate Resiliency**

The Sea Level Rise & Climate Resiliency map shows the current water level and “100-year” flood zone with projections of potential sea level rise (SLR) at 12, 30, 54 and 72 inches over current levels, as well as modeling for tidal wetland pathways. The sea level rise modeling comes from the non-profit Scenic Hudson, which utilized high resolution LiDAR topography and local tidal datum research in a modified-bathtub approach to estimate current and future inundation zones. It’s important to note that the modeling does not account for storm surge and wave action, and that estimates for future flood zones do not account for projected changes in precipitation patterns.

Projections for rapid sea level rise on the Hudson threaten waterfront development and infrastructure as well as the future of tidal wetlands. Along the Hudson River Estuary there are about 7,000 acres of tidal wetland, the bulk of which occur north of the City of Kingston, NY. With a projection of 36 to 72 inches (3-6 feet) of SLR by the end of the century, up to 4,000 acres of tidal wetland may be completely inundated in the estuary. Tidal wetlands along the Hudson River will disappear as water rises unless they can build up sediment in place (through the process of accretion) or move horizontally to higher ground. However, wetlands bordered by steep shorelines, walls, or existing development may have no place to go. Potential tidal wetland

loss threatens the health of the entire estuary. Wetlands are also one of the most important tools in flood control as they are able to absorb and slow movement of rising waters. A recent study by Scenic Hudson shows areas along the Hudson most likely to support tidal wetlands in the future as sea level rises.



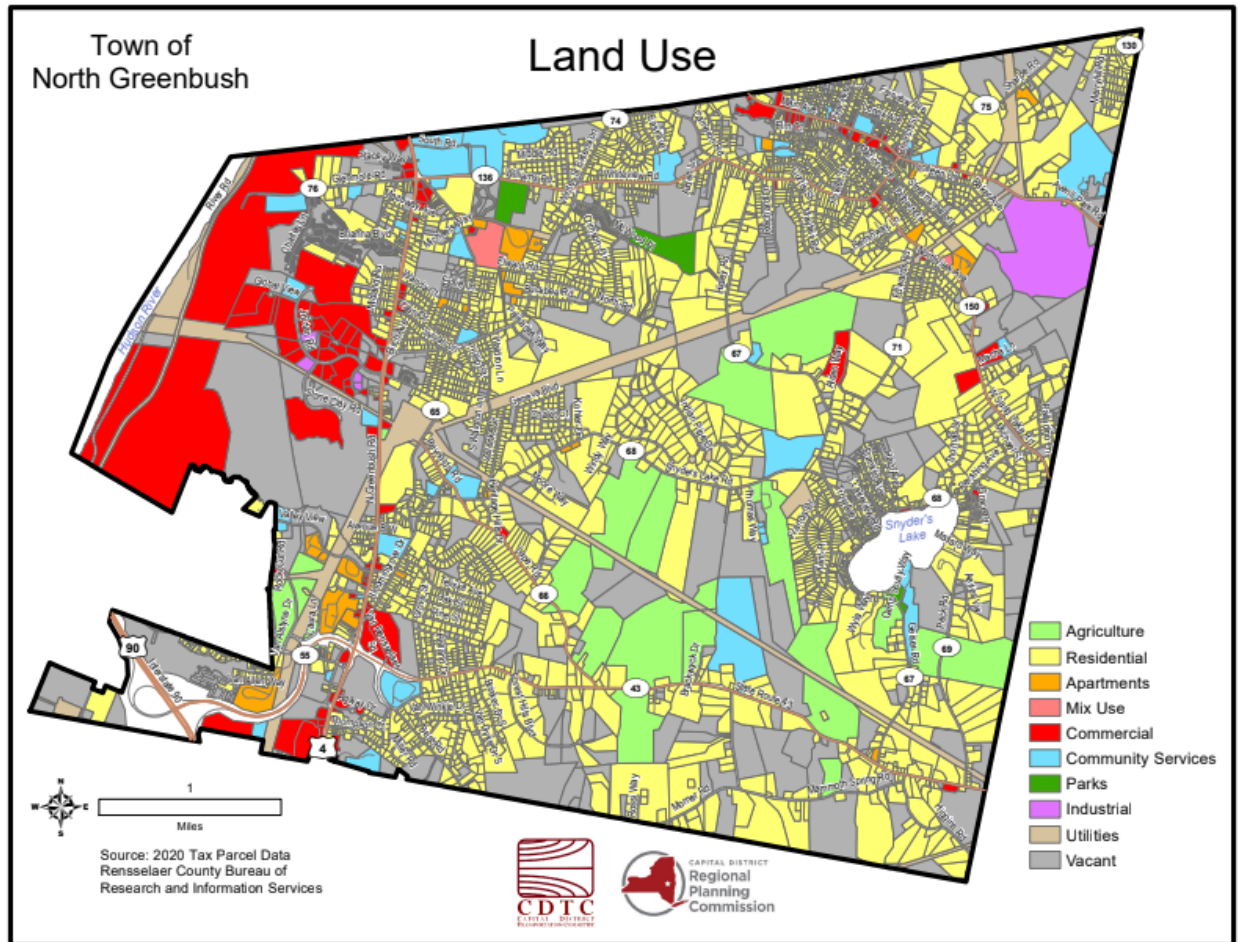
## Map #20: Zoning and Parcels

This map shows the different types of zoning available in the town of North Greenbush and where the various types of properties are located within the town .

On the western border of town, along the Hudson River, is an area identified as a planned waterfront district. Directly to the east lies areas zoned for neighborhood businesses/commercial, Tech Park, and industrial land uses.

Residential zoning districts are scattered throughout North Greenbush but focused on the northern and central areas of town. Residential zoning extends from the northern portion of town down to the south. Once you move past the residential zoning you see a large portion of the map identified as agricultural zoning. Besides agriculture there are small portions of residential zoning sporadically to the east of town as well as some commercial to the northeast.

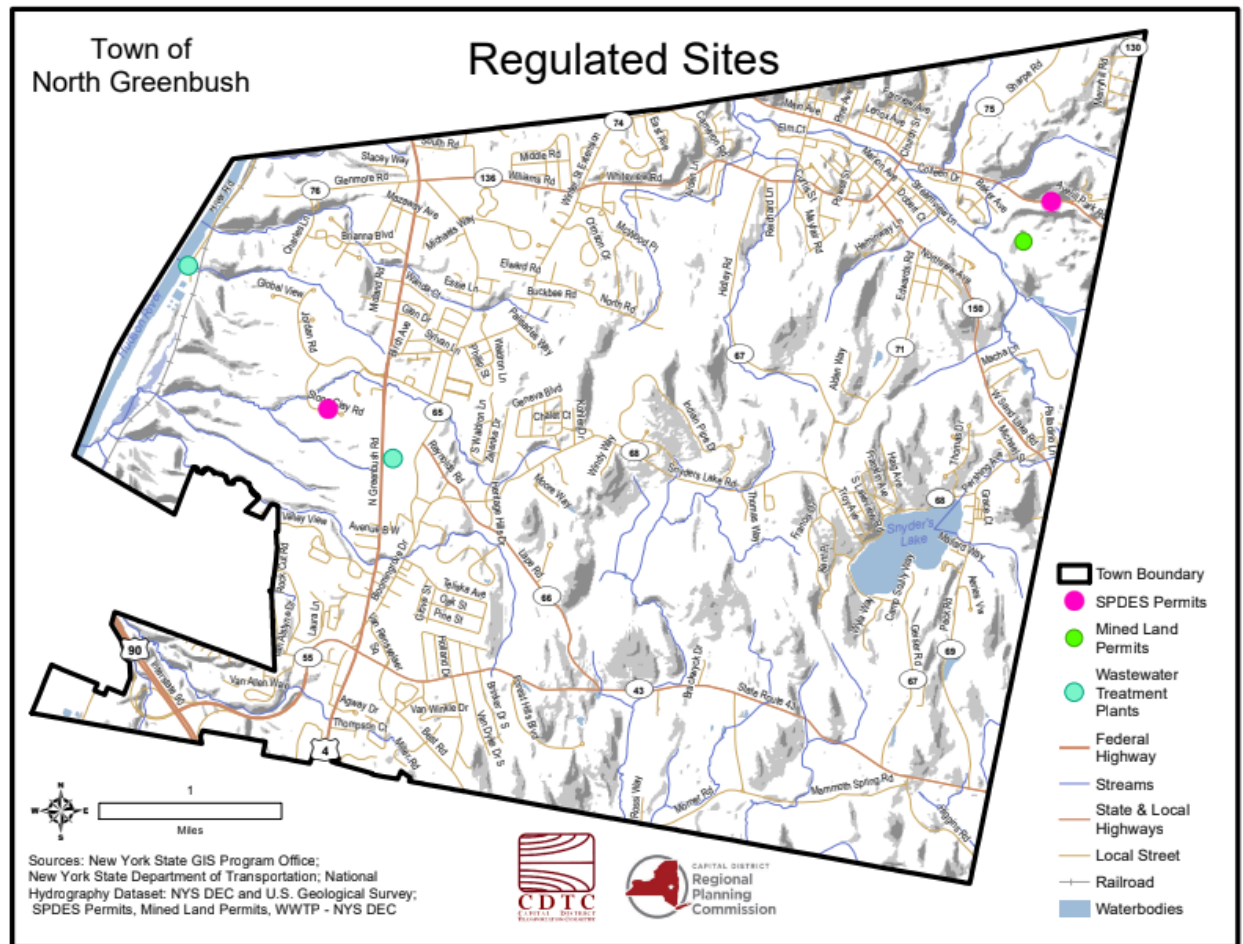
The majority of town is zoned for agricultural use although very little land is used for farming and agricultural purposes.



**Map #21: Land Use**

The Land Use map identifies the activities actually taking place on the property. The Land Use map can be compared to the previous map (Zoning and Parcels) to compare the uses of land against the town's zoning scheme. This map depicts areas along the Hudson River dedicated to commercial uses. The zoning map identifies these areas as waterfront property, technology park, and industrial. The Land Use map also identifies the substantial residential land uses occurring within areas zoned for agricultural uses. Finally, this map identifies the significant areas of town not yet developed or dedicated to particular uses (vacant).



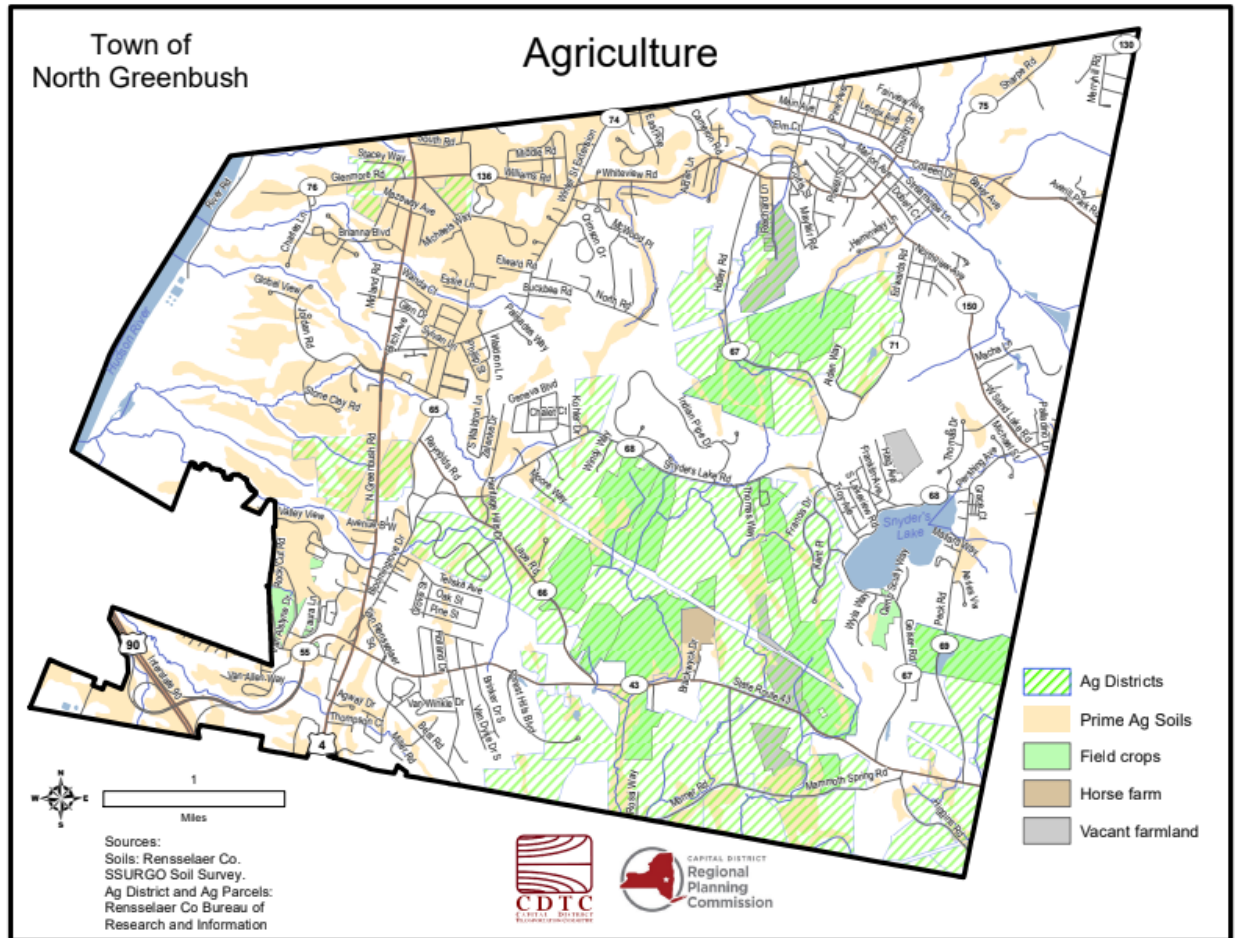


**Map #22: Regulated Sites**

This map depicts five regulated sites in North Greenbush. Two State Pollution Discharge Elimination System (SPDES) permits are shown. One is on Stone Clay Road. The second is located on Main Avenue near Averill Park Road.

Two wastewater treatment plants are also shown on the map. One can be found at the end of River Road, alongside the Hudson River. The other is found on the eastern side of North Greenbush Road between Avenue B W and Birch Avenue.

Finally, one mined land permit is depicted on the map between Route 150 and Main Avenue, less than a mile from Averill Park Road. The data portrayed on the map was current as of December 2021.

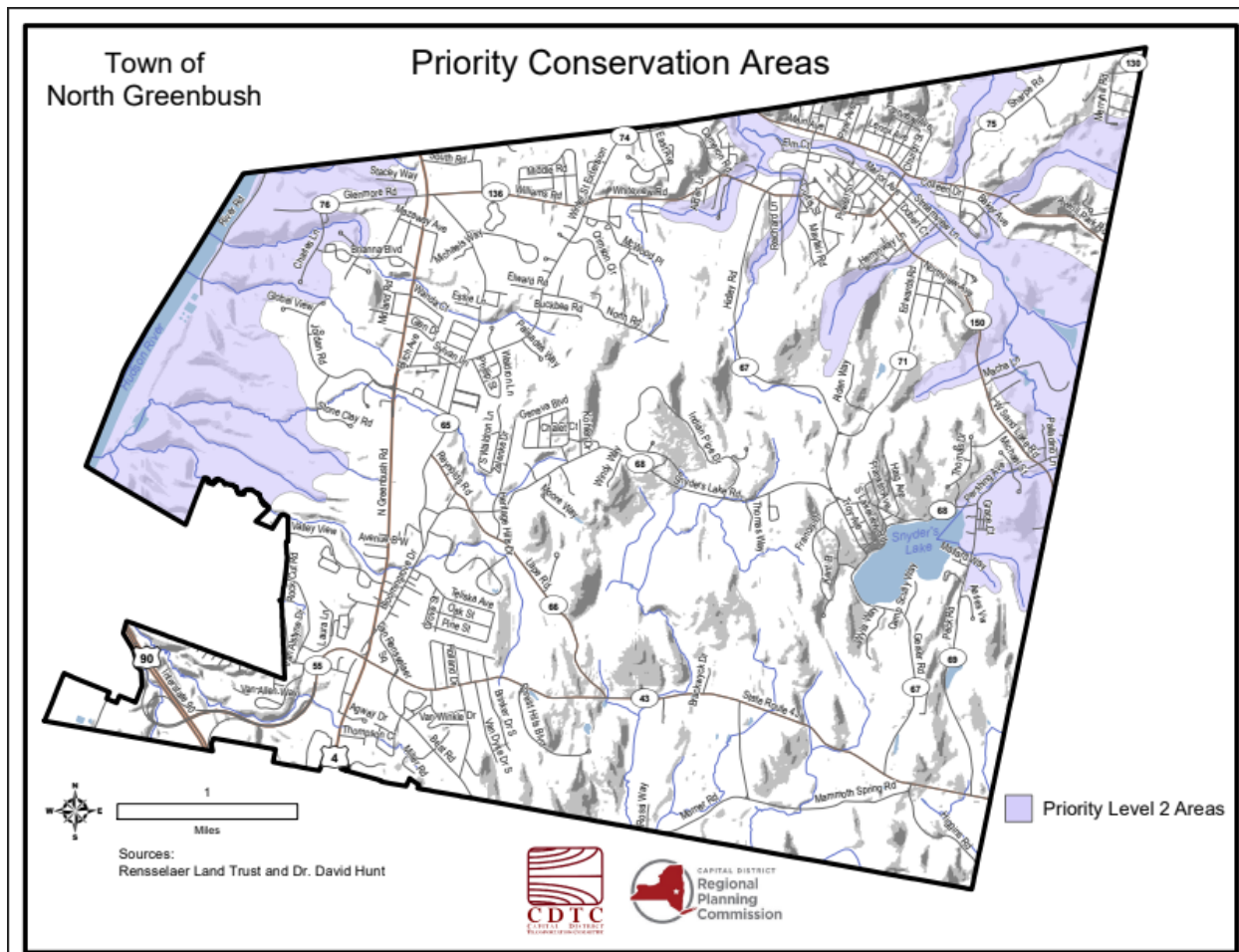


**Map #23: Agriculture**

This map shows agriculture in the town of North Greenbush. Agricultural Districts are labeled in green with slanted white stripes on the map. Prime agricultural soil is indicated in areas labeled in tan. Field crops are labeled as green. Horse farms are labeled as brown and vacant farmland is labeled as gray.

The majority of the town's agricultural districts are in the center to the southern portion of North Greenbush. Field crops exist on some of the lands that are zoned as agricultural.

The interesting part of this map is the amount of prime agricultural soil in the town of North Greenbush. The prime soil exists throughout the northwest corner of town, the southwest corner of town, and somewhat throughout the middle of town. There is little agricultural zoning on the prime agricultural soil to the west of town. Most of the agricultural land is located to the east and center of town.



**Map #24: Priority Conservation Areas**

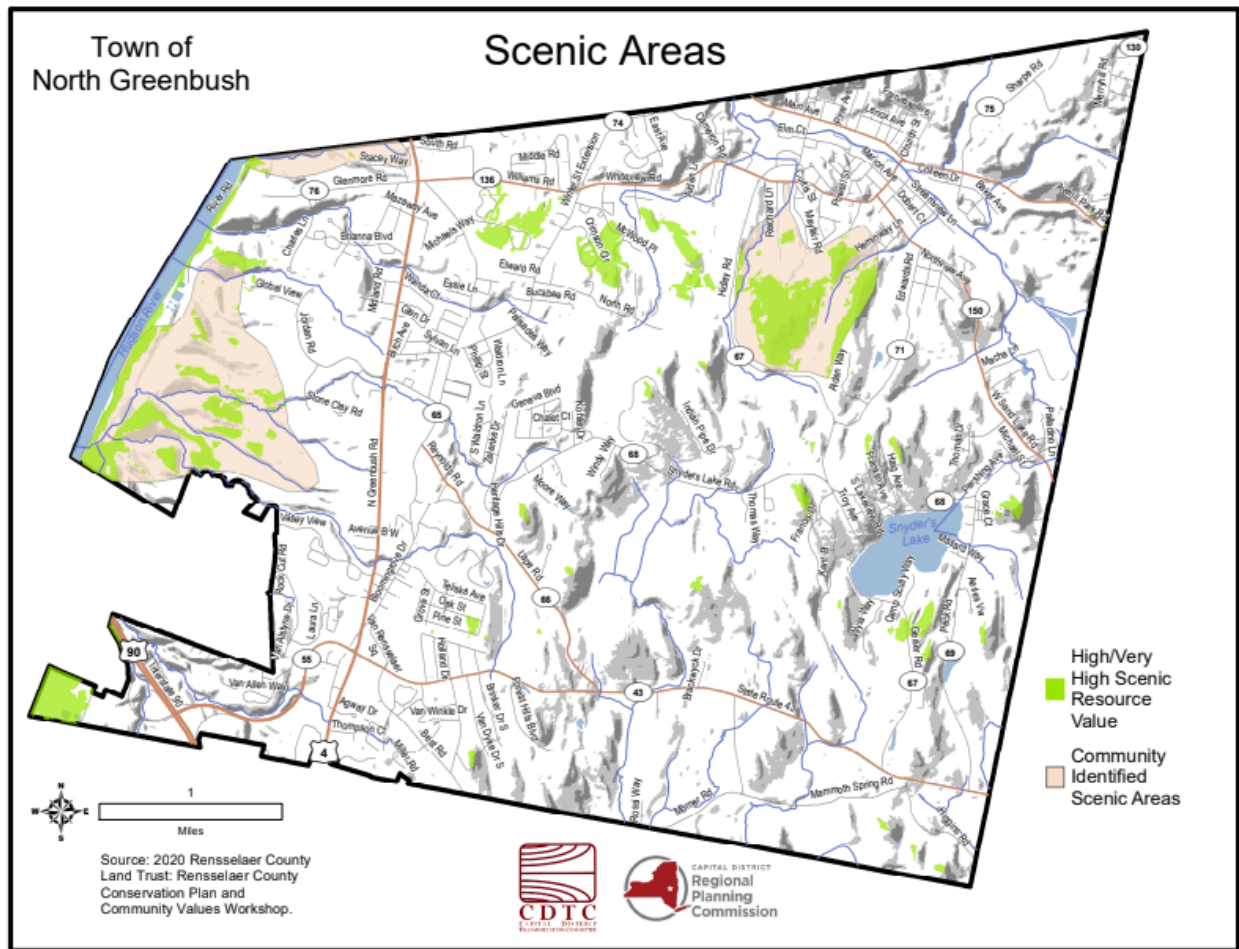
This map depicts ecological resource priority conservation areas in North Greenbush as identified in the Rensselaer County Conservation Plan (Rensselaer Land Trust, 2018). For that plan, Dr. Hunt ranked the ecological resource priority conservation areas into Tiers 1-4, with Tier 1 being the highest priority for biodiversity conservation focus in the County.

Tier 1 and Tier 2 sites are the largest areas, in the highest ecological condition, and with the best surrounding natural landscapes, and have high concentrations of important ecological features. Taken together, these areas would most effectively conserve for the long term a combination of multiple ecological features, especially a complete set of plants and animals native to the county. This set of conservation sites includes large areas of natural land cover in good to excellent natural condition, and areas with unique or irreplaceable ecological features for the county.

There are two primary priority Tier 2 areas within the North Greenbush. One is in the western-most part of town, beginning at the Hudson River and extending eastward toward, but not reaching, North Greenbush Road. This area includes the primarily undeveloped forested areas along the Hudson River and several of its tributaries.

The second priority Tier 2 area follows the Wynants Kill and its tributaries in the northeastern part of North Greenbush. This area extends east from the northeastern end of Snyder's Lake northward along the Wynants Kill, encompassing most of the Wynants Kill watershed, including several of its tributaries and their surrounding wetland and upland ecological communities.

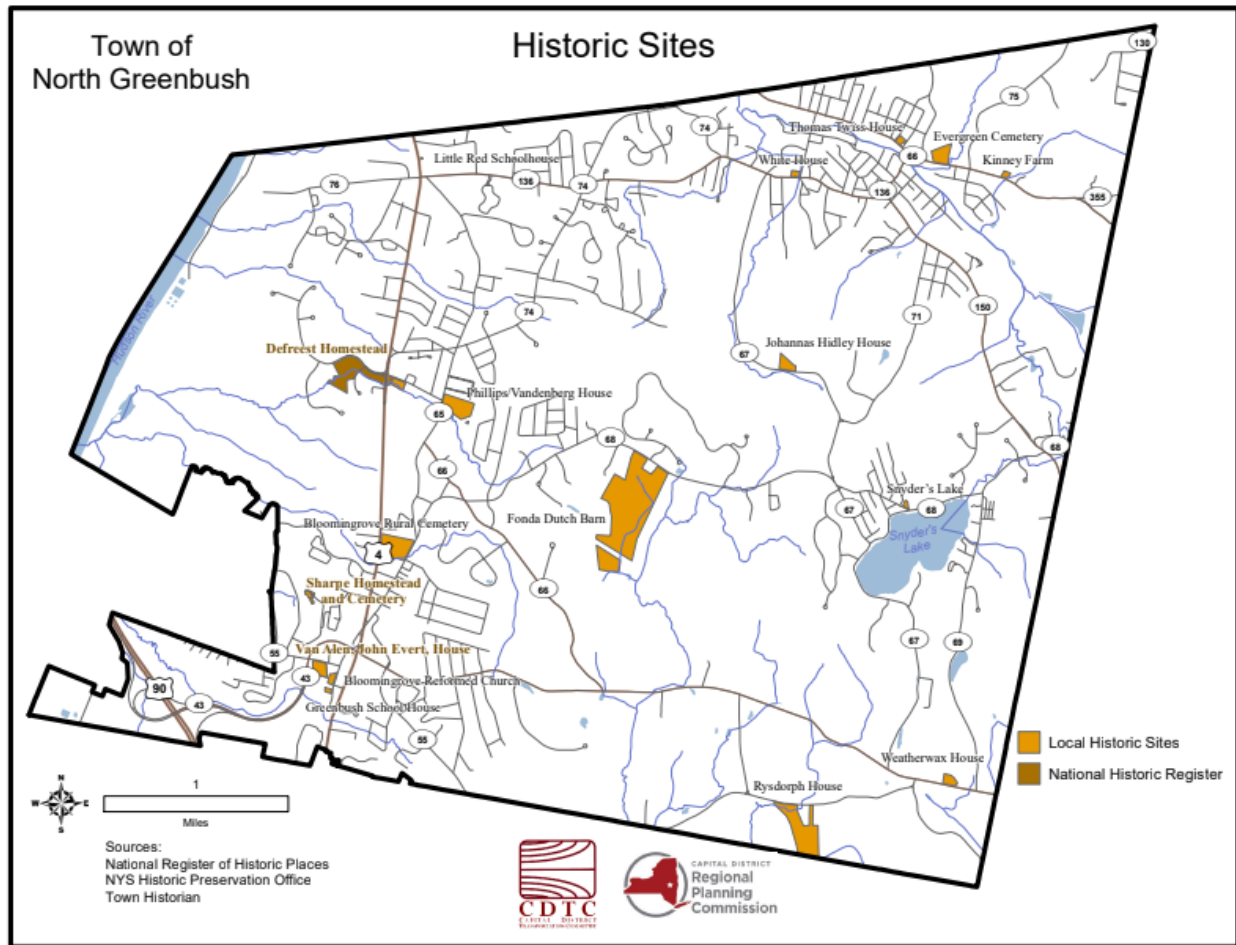




**Map #25: Scenic Areas**

Scenic resources are landscapes having a distinctive character that is rich in visual variety, and that are appealing for their aesthetic qualities. These areas enhance and enrich the daily life of the town residents, providing a feast for the senses. The high and very high scenic value areas are found along the Hudson River in the west of town and scattered throughout the undeveloped areas in the northern parts of town. These areas are generally surrounded by community identified scenic areas. There are also other small patches of high and very high scenic value, mostly clustered around Snyder's Lake, but also dispersed in small areas throughout the town. As development pressures increase within the town these areas are threatened with displacement. The high/very high scenic resource value areas identified in the vicinity of Michaels Way and Crimson Circle have already been impacted and portions may be completely gone. Additional areas may have also been impacted. The areas illustrated on the map were the best available data at the time of publication.





**Map #26: Historic Sites**

- **Bloominggrove Reformed Church**

The first church building was erected in 1817 and torn down in 1869, its lumber sold for \$135. A second church was erected in 1870. That church burned down December 31, 1910. The first service in this structure was held June 1921. This building takes on a modified Gothic form. Of note is the square tower topped by a two-slope, pyramid-shaped roof broken on four sides by gable wall dormers.

- **The Bloominggrove School**

The Bloominggrove School was built about 1809. It is an example of the style of building often used for meeting houses in the Albany area. The school was closed June 1944 and currently houses an accounting business.

- **The Van Alen Homestead**

Located on the south side of Washington Avenue, this two story Georgian style building has a gable roof, shallow molded cornice and a central entry with an open porch (in the Colonial Revival style). The patterned slate roof depicts the year 1793 which may be the date of construction. John Van Alen was a prominent merchant, a surveyor of the East

Manor for the Van Rensselaers, a congressman from 1793-1799, and a New York State legislator from 1800-1801. This property is listed on the National Register of Historic Places.

NOTE: The Mrs. M.A. Van Alen house, the Sharp Family house, the Leonard Sharp house, and the Conrad Sharp House are not historically significant. The Sharp Estate Homestead no longer exists.

- **The Juria Sharpe Homestead**

This one-and-a half story dwelling with a steeply pitched gable roof (characteristic of Dutch settler architecture of this period) is probably the oldest house in the town, possibly dating from the 1730s. It was placed on the National Register of Historic Places in 2005.

- **Bloomingrove Rural Cemetery**

Bloomingrove Rural Cemetery was established in the 1840s and is the largest cemetery in North Greenbush. Over the years, graves from many small cemeteries have been moved here. Many of the most prominent residents of the town, including six of the first Town Supervisors are buried here.

- **Defreest Homestead**

- **The Philip Defreest House:**

This one-and-a-half story, Flemish bond brick residence has a gambrel roof, an off-center entry and two interior chimneys. Construction of the main building in the mid-1700s was of handmade brick with a mortar of lime and clay. Hand hewn beams span the entire width of the structure with hand wrought iron beam anchors on the ends. The main section was divided into two large rooms with a fireplace in each, resting on brackets built into the cellar walls. The two large front windows each have a fan-shaped lintel of brick. Earliest access to the bedrooms upstairs was by means of a ladder from one room. There is an earlier (perhaps as early as 1720), wooden wing on the west side, which contained the kitchen with a fireplace for cooking and another fireplace in the cellar, both using the same chimney. This property is listed on the National Register of Historic Places.

- The nearby 18th century New World Dutch Barn retains much of its original character.
- The earliest reference to the Defreests in North Greenbush is a list of freeholders in the East Manor of Rensselaerwyck in 1720. Philip Defreest (born in 1652) is included as a yeoman on this list. The westerly wing of the house may have been constructed at that time. The presence of architectural features, such as knee braces in this structure support an early 18th century construction.
- Whether Philip lived on this property in 1720 is unknown, since it was common for Albany city dwellers at that time to lease farmland for their children. Philip Defreest was a “master cooper, burgher of town” in Albany who bought a lot and

house in Albany in 1681. His eldest son, David, was born there in 1700 and married in 1717. This family development suggests that Philip leased the North Greenbush land for his son. The 1767 survey map of the Rensselaerwyck by Bleeker clearly shows a house at this location identified as Philip Defreest's. This map most likely refers to David Defreest's son, also named Philip, who was born in 1720.

- Defreest family members have served in prominent roles in the town's history as Town Supervisors and Justices of the Peace.
- The Jordan family owned the property into the 20th century, selling it in 1969 to Rensselaer Polytechnic Institute for the development of the TechPark.
- Additionally when the Rensselaer Technology Park was being constructed, archeological investigation discovered chipped stone tools from a prehistoric occupation of the site. Age estimates of the projectile points found suggest people may have been at this location as early as 1500 B.C.

- **The David Defreest House**

This one-and-a-half story, Flemish bond brick residence has a gambrel roof, and an off-center entry with a Colonial Revival doorway. Although the exact date of construction for this house is unknown, there is a fireback present in the house that has been dated to 1767 which suggests construction during that year. David was a prominent farmer in the area, inheriting the land from his father Philip. This house, as part of the Defreest Homestead, was placed on the National Register of Historic Places in 1977.

- NOTE: The Peter Martin Defreest house and the Riner M. Defreest houses are not historically significant.

- **Little Red Schoolhouse**

The Little Red Schoolhouse: Also known as the District #1 School and the Williams School, it was built in 1861 and has been in continuous use as a schoolhouse since then. It is a one-story, common bond brick building with a pedimented gable roof and a central entry on the gable end with a transom and brick pilasters on the facade. It is the last one room schoolhouse in the county that continues to be used as a school.

- **The Phillips/Vandenberg House**

An important example of Greek Revival architecture, this house was built by Joseph Phillips in 1843. The homestead was later occupied by Rutger Vandenberg, who married a daughter of Phillips. This is a two story house with four distinctive Ionic porch columns across the front. The 1965 book "Architecture Worth Saving in Rensselaer County" features this house.

- Note: The Cornelius and Gerrit Vandenberg houses no longer exist. The Rutger Vandenberg house is the same description as the Phillips/Vandenberg house.

- **Fonda Dutch Barn**

- There were two New World Dutch Barns associated with the Fonda Farm on Snyders Lake Rd. The remaining Dutch Barn is located near the site of the Fonda Tenant's House and is one of the few remaining original Dutch Barns in Rensselaer County.

- **The Johannes Hidley House**

- The 1770s house was built by this German immigrant settler whose family heirs populated the road in North Greenbush which bears his name. The house had been modernized, but some of the interior is original including the wide floorboards and narrow stairs with a simple banister and newel post. Also located on the property is a small family cemetery where early Hidleys, their spouses and children were buried.

- **White House**

The Peter White House is a two-story, brick, Federal-style residence with a gable roof, a cornice with dentil molding and a Colonial revival doorway. The house dates to circa 1820-1830 and was built by the Koon family. The Koon family owned a large tract of land running all the way to Troy and included the land on which the Emma Willard School was built. The first occupants, however, were Peter White and his wife, Delia Koon. He was a wealthy farmer and milk peddler, according to the 1870 federal census. The area around Whiteview Road is named after Peter White.

- **Thomas Twiss House**

The Twiss House is one of the earliest homesteads in Wynantskill with the front wing dating from 1790-1810 and the rear wing from circa 1767, perhaps even to 1760. Gerritt Van Everin, an early landholder, leased the land from the Van Rensselaer Patroon. In 1852 Thomas S. Twiss bought this property from Mr. Van Everin. Thomas Twiss was an 1826 West Point graduate who held various positions around the country including that of U.S. Indian Agent with the Platte River Agency (Nebraska) beginning in the late 1850s. On the 1876 Beers Atlas map, Miss M.L. Twiss is named as owner of the house and the 85 acre farm. In the 1900s, this was the home of Philette Craver, who was Town Supervisor and also Sheriff of Rensselaer County. The house is a two-story, Federal-style residence with a center entry, Colonial Revival entry porch and two interior end brick chimneys. The building currently houses several businesses including Hannan's Waste Disposal.



- **Evergreen Cemetery**

The Evergreen Cemetery was established circa 1876. The first person buried in the cemetery was Henry Frazee who came to the Town from New Jersey, settling here in 1813-14. Henry Frazee served as Town Justice for sixty years. Other prominent North Greenbush family names on headstones in the cemetery include Barringer, Bellinger, Cole, DeFreest, Film, Hidley, Koon, Sharpe, and Vandenburg.

- **Kinney Tollgate House**

This heavily modified story-and-a-half residence with a steeply pitched gable roof was built around 1850. It has slender eave returns and a brick foundation. The tolls collected were used for road upkeep and repair. By the 1900s county and state road departments took over this job and the tollgate ceased its operation.

- **Lewis Kinney Homestead**

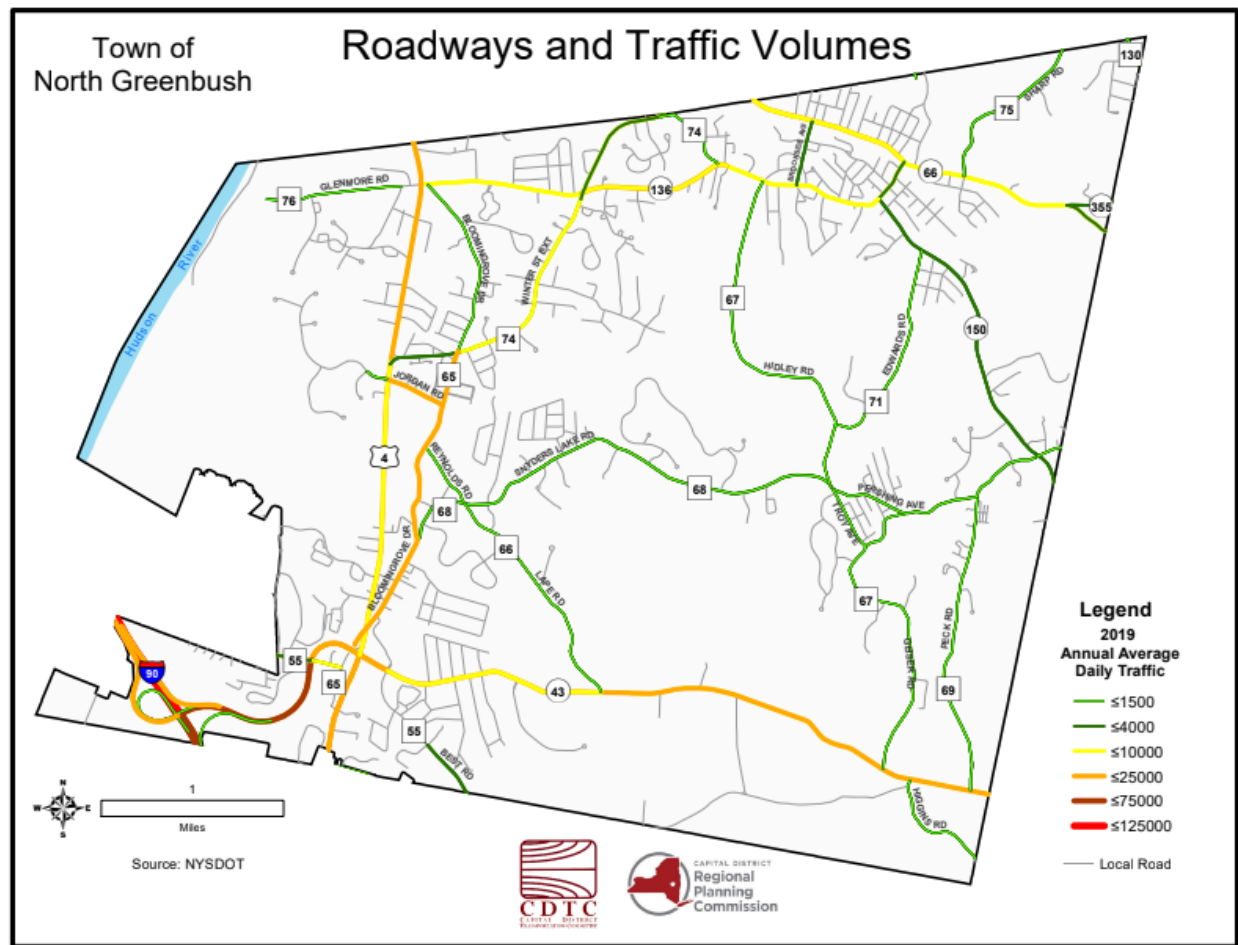
Henry Kinney settled in North Greenbush in 1791. At his death, his son Lewis lived in this two-story farmhouse. The date of initial construction of this residence is thought to be in the 1790s. The two story addition with the flat roof was built around 1870. Lewis Kinney was a prosperous farmer and member of the First Reformed Church of Wynantskill, serving as a church elder for 30 years.

- **The Weatherwax Homestead**

The original house was located immediately in front of the present house. The early house was torn down in 1794 and a second house was built to the west. That house burned in 1804 and the present house was erected in 1805. It is a Federal Style house with a center entry and a slate roof. The one-and-a-half story wing has eyebrow windows, and an open porch and modern cupola. The first Weatherwax to live here was Andries, one of the earliest inhabitants of the old town of Greenbush.

- **The Rysdorph House**

Laurens, a son of Johannes Rysdorph (who was a Palatine immigrant who arrived from Germany in 1710) built the house circa 1750. The original house was a story and a half, with two rooms and a loft above. Around 1780, an addition was added, and probably the roof of the original two rooms was raised at the same time to make it a full two stories, with a knee wall room over the added room. The addition had a fireplace with a bake oven. The Rysdorfs occupied 186 acres of farmland, which was described in the lease as “well watered” which led to the naming of Mammoth Springs Road.



**Map #27: Roadways and Traffic Volumes**

This map shows the different roadways that run through the town of North Greenbush and provides the traffic volumes for each of these roads.

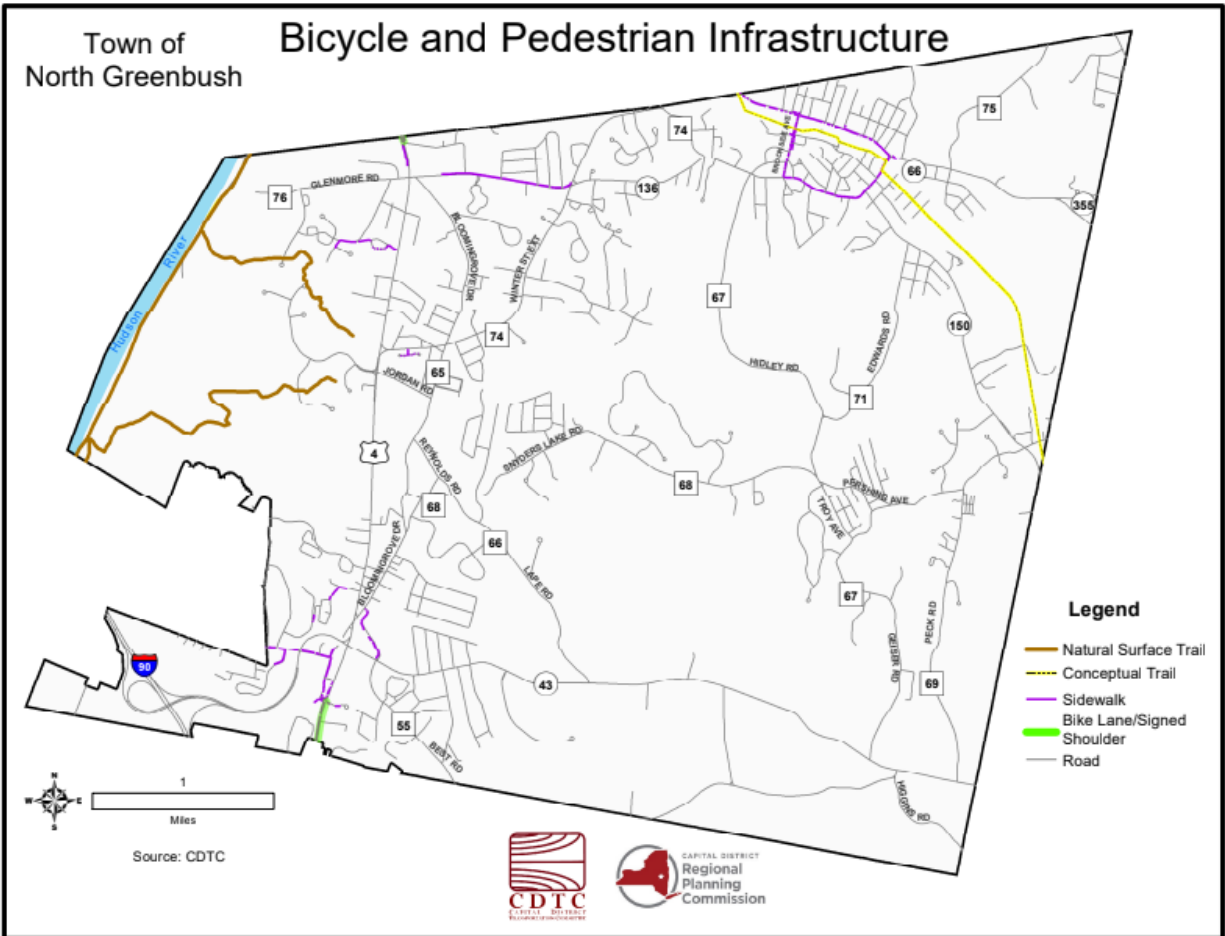
Interstate Route 90, a federal highway, is in the southwest corner of North Greenbush. The traffic volume in this area is the heaviest in all of North Greenbush. The entrance and exit ramps to Route 90 show the highest level of average daily traffic at 75,000 travelers per day.

County routes 65, 55, and State Route 43 in North Greenbush are frequently used travel lanes. Route 65, which runs from the southern portion of North Greenbush to the northern portion is a very busy travel route, seeing on average 25,000 travelers per day. The farther Route 65 goes north, traffic begins to decrease to a rate of 1,500 travelers per day.

Route 43, which supplies an entry to Interstate Route 90 on the western portion of North Greenbush and continues east to the other end of North Greenbush, has a high volume of traffic per day as well. On Route 43 you can see mixed traffic between 10,000 travelers per day all the way to 25,000 travelers per day. County Route 74, and State Routes 66 and 136 in the northern areas of North Greenbush, also have a semi-heavy average of travel at approximately 10,000 vehicles per day.

Other than the highways and routes mentioned here, the remainder of the roads in North Greenbush carry only local traffic, or no more than 1,500-4,000 travelers per day.





**Map #28: Bicycle and Pedestrian Infrastructure**

This map shows the bicycle and pedestrian routes available in the town of North Greenbush. The map identifies natural surface trails, conceptual trails, sidewalks, bike lanes, and roads. In its entirety, the town of North Greenbush is lacking in infrastructure to support any sort of continuous pedestrian traffic.

The map illustrates that there are a few, scattered segments of sidewalks in the town of North Greenbush. The first segment of sidewalks exists on a small portion of Route 4 at the southern end of North Greenbush. There appear to be 2 or 3 other small segments on side streets off of Route 4 in the same location to the south. There is another very small segment of sidewalks on the road off of Route 65 and Route 4.

There appears to be another set of sidewalks off Route 4 north of the Tech Park that enter a neighborhood or follow local roads. Another segment of sidewalks at the very north end of North Greenbush appears to head out of town continuing north.

Extensive traffic and pedestrian improvements are currently underway on Route 4 and should be complete by the spring of 2022. Pedestrian sidewalks/pathways have been constructed for a half

mile from Route 43 to Valley View Drive. They were also proposed northbound from Jordan Road to Williams/Glenmore Road but will only extend to Highland Acres. Additional sidewalks and crosswalks have been added at the northern end of Bloomingrove Drive where it connects to Williams Road. The pedestrian improvements will connect to existing facilities at the northern and southern project limits, and add dedicated crossings of Route 4 at the major intersections.

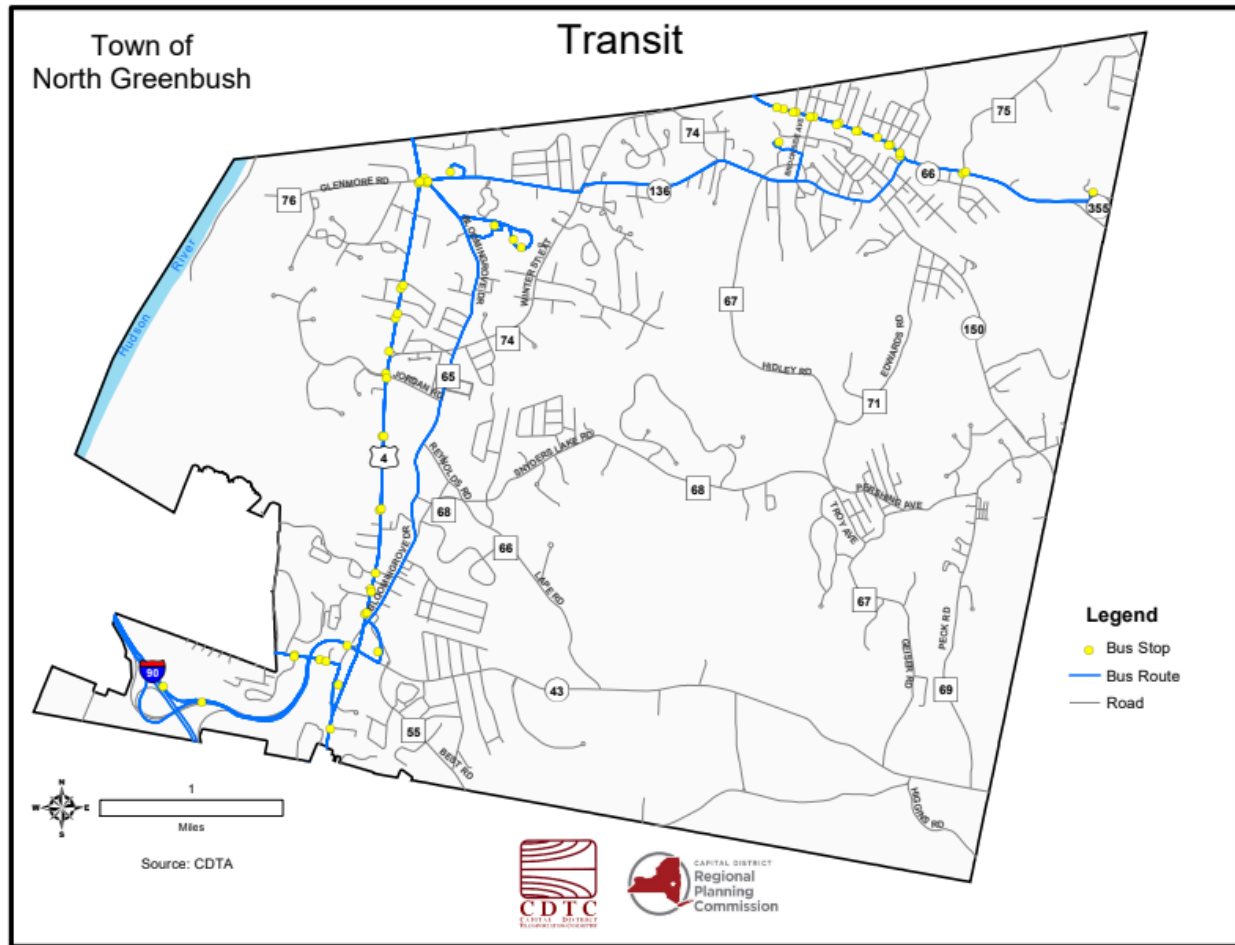
One of the longest continuous sidewalk chains in the town is on Route 136 between Bloomingrove Drive to the west and Winter Street Extension to the east. Sidewalks now connect Williams Road to Route 4 as part of the aforementioned Route 4 traffic and pedestrian improvements.

Finally it appears that there is a loop of sidewalk connections to the northeast corner of North Greenbush that connects Route 66, Brookside Avenue, Route 136, and Route 150.

The Town of North Greenbush hosts two small segments of bike lanes in the most southern portion of town and the farthest northern portion of town on Route 4 heading out of town in either direction. There are no dedicated bike lanes in the town. Bicyclists must use the shoulders on county routes and town roads, which can sometimes be too narrow for safe riding.

There are natural surface trails available in North Greenbush to the west of town that run next to the entire border of the Hudson River, and two additional trails splitting off from that trail continuing east towards Route 4.

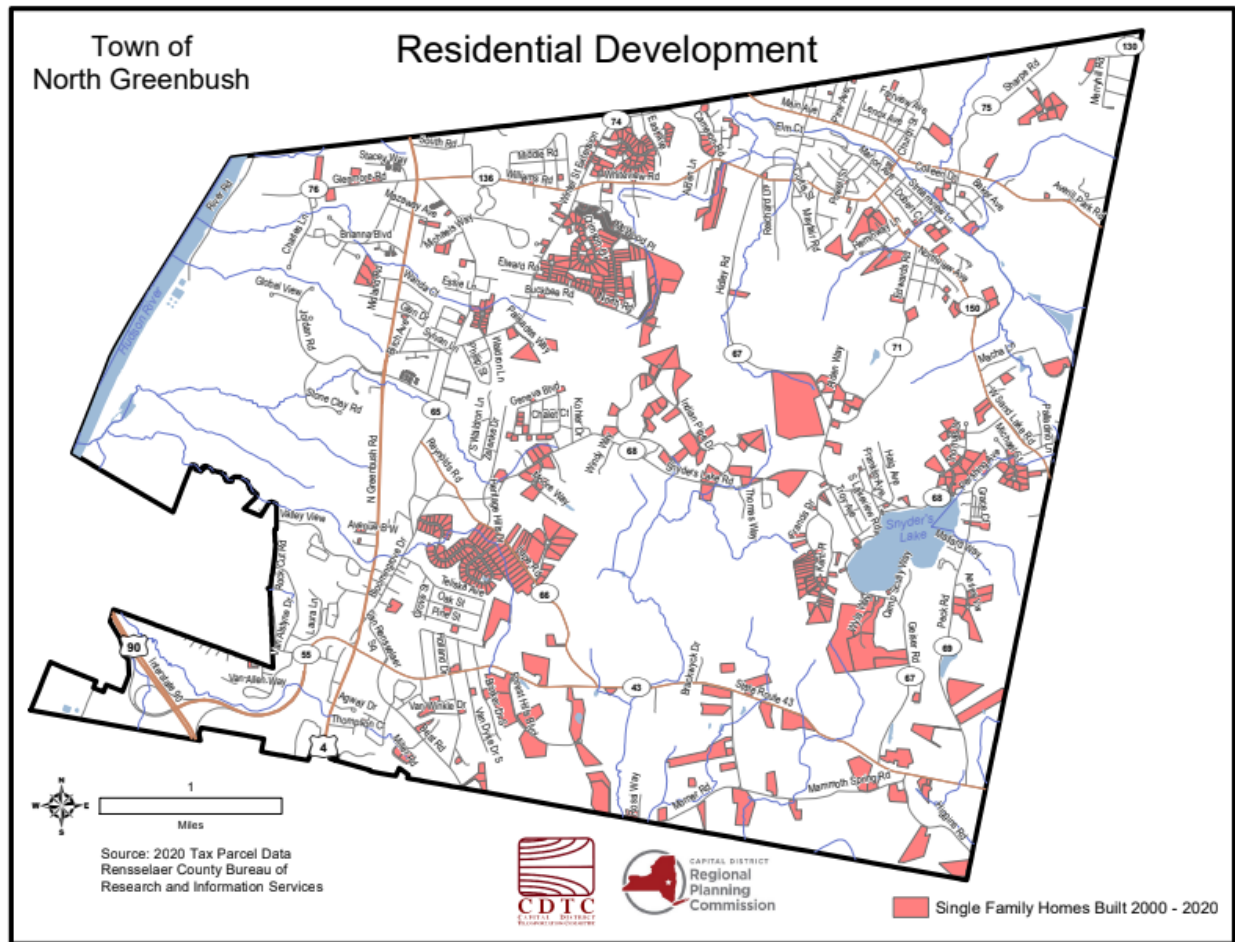
Finally, there is one conceptual trail in the town that runs from the northwest area of North Greenbush down Route 66 and then down local roads to the eastern border of North Greenbush.



**Map #29: Transit**

This map shows the roads in the town of North Greenbush as well as the bus routes that traverse them. Mass transit is very limited in town as the roads in North Greenbush are much more extensive than the bus routes that travel along them.

The bus routes that run through North Greenbush start in the northeast corner of town. One route follows Route 136 onto Route 66 and continues west towards Route 65. A second bus route travels along Route 65, and another travels south on Route 4 into East Greenbush and ultimately through Rensselaer with a final destination of Albany. Both of these routes continue south until they reach Interstate Route 90. A bus route also travels along Interstate Route 90 from Albany into North Greenbush and then north into Troy.

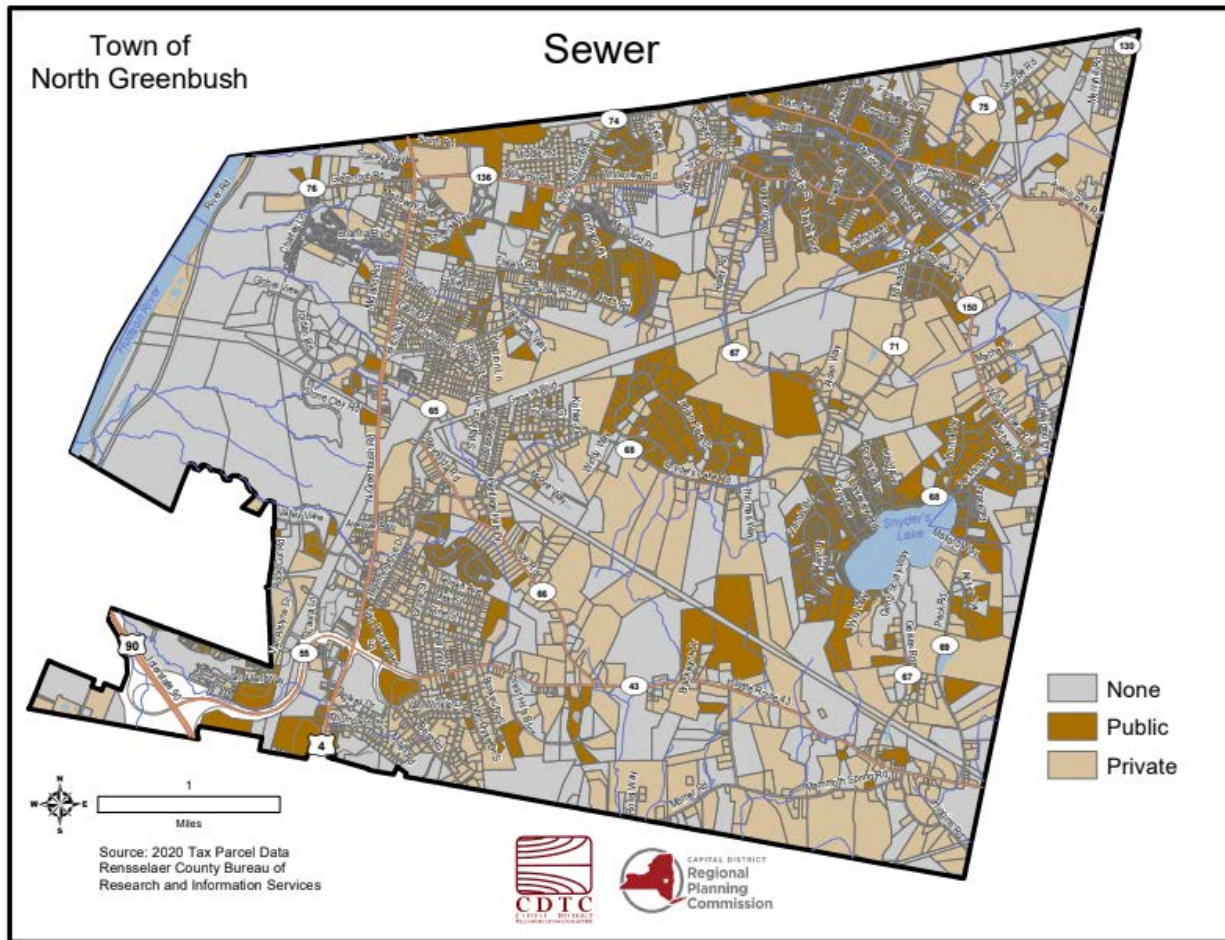


**Map #30: Residential Development**

This map shows the residential development in North Greenbush from the years 2000-2020. The map above only shows the construction/development of single-family homes.

The residential development in North Greenbush since 2000 appears to have been sporadically placed all throughout town but primarily in the southern and northern reaches. Several large multi-family developments, including a senior housing development and several apartment complexes (not depicted on the map) have been built near or along the southern end of Route 4. Two larger single family subdivisions were also constructed in the southern end of town. A cluster of single family and twin home developments have been constructed off of Winter Street Extension (Route 67) and a large townhome development is under construction on the northern end of Route 4. Otherwise, properties have been developed in spurts throughout the rest of the town, excluding near the Hudson River and near the entry to Route 90.



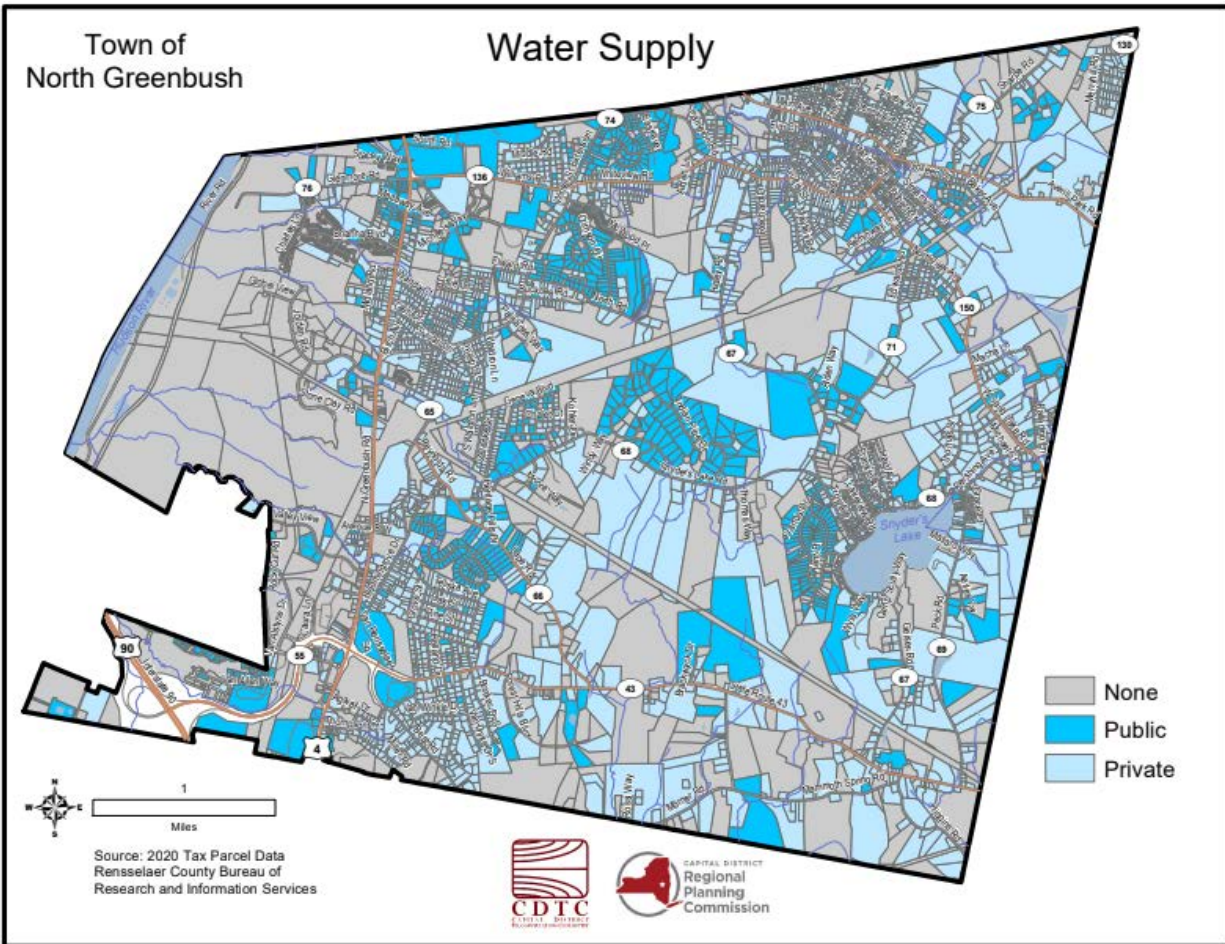


**Map #31: Sewer**

This map shows the sewer distribution throughout North Greenbush. The gray labeling indicates no sewer service. The dark brown labeling indicates areas served by public sewer. The light brown depicts properties served by private sewer/septic systems.

The map shows that the most western portion of North Greenbush which is largely undeveloped and borders the Hudson River has no sewer service. Adjacent to this area are large commercial and residential developments near Route 4 which have installed sewer as a condition of development. Further east and closer to the center part of town, where there is a mix of commercial, residential, and agricultural property, is a mix of public sewer and private septic.

There are very few properties in the center of town which do not have access to some type of sewer system. It also appears that the majority of the land that is agriculturally zoned and in the easternmost part of town has private septic. Homes in the residential districts of Wynantskill and Snyder's Lake in the northern and easternmost reaches of town have sewer while sewer installation in Defreestville in the southern part of town has lagged, with the exception of recent residential and commercial developments, even developments off of main roads such as Route 4.



**Map #32: Water Supply**

The Town of North Greenbush provides drinking water to approximately 5,100 households and several commercial and industrial customers including the Tech Park. Fourteen water districts were consolidated into one district in 2016 which currently serves over half the town.

The town purchases most of its drinking water from the City of Troy, although some water is purchased from the City of Rensselaer/Town of East Greenbush Joint Facilities located along Route 4. The water's source is the Tomhannock Reservoir located about 6.5 miles northeast of Troy.

As shown on this map, there is a mix of public and private water supply in the town. The public water supplies generally predominate in the western areas of the town. The center of North Greenbush has both public and private water supplies. The more eastern and southeastern sections of the town have more private water supplies than public, though there are still substantial areas of public water supply here. In the northeast of town, private water supplies outstrip publicly supplied water.