Rensselaer Land Trust

Land Conservation Plan: 2018 to 2030

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Executive Summary

The Rensselaer Land Trust (RLT) prepared this Land Conservation Plan (the Plan) to identify key lands in Rensselaer County for conservation and to assist and inspire the conservation efforts and land use decisions of its partner organizations and municipalities in our region. The RLT Board of Directors and staff will use the Plan to create strategies to meet its conservation goals through 2030.

To develop the plan, RLT selected five resource targets that define the physical, biological, and scenic features of the County and then identified priority areas for conservation based on these targets. A series of maps and charts illustrate the resource targets and conservation priority areas.

Resource targets are the features that RLT deems essential to Rensselaer County's physical and biological well-being, economy, and quality of life, including:

- Water;
- Ecological;
- Climate resilient plants and wildlife;
- Agricultural; and
- Scenic.

Recognizing that not all land will be protected, conservation priority areas are the places where RLT's land protection efforts and those of its partners can best benefit the people, wildlife, and plants of the County.

RLT will look to the collection of conservation priority areas to proactively seek out lands for protection and to assess opportunities provided by landowners such as when a property comes up for sale, ownership is shifting from one generation to the next, or a landowner approaches RLT to protect their land by donating or selling a conservation easement or fee-owned parcel.

The RLT board and staff will also use the set of conservation priority areas to identify joint opportunities with partner organizations or government agencies who may have an interest in protecting a parcel of land or may collaborate with RLT in protecting it.

The following table shows the number of acres in Rensselaer County that RLT has identified as priority conservation areas for the five conservation targets:

Conservation Target	Number of Acres in County for Conservation Priorities	Percentage of Land in the County	Percentage of Priority Acres Already Protected
Water Resources	16,000	4%	13%
Ecological Resources	172,000	40%	22%
Climate Resiliency	6,800	2%	25%
Agricultural Resources	12,000	3%	12%
Scenic Resources	6,800	2%	69%
Composite Priorities*	33,700	8%	40%

** Highest normalized score when overlapping all resource scores, plus community value scores*

RLT's analysis of the data suggests that there are about 33,700 acres among the 425,000 acres of Rensselaer County that scored highest for conservation value and are therefore most worthy of protection. We have set a goal of protecting 10,000 of those acres by 2030. With the help of our many partners and generous supporters we are confident we can reach it.

The Plan complements RLT's 2018 to 2023 Strategic Plan, which will be completed in 2018. The strategic plan describes RLT's objectives in land conservation and stewardship and our role in addressing the effects of climate change. They are designed to be closely aligned and reflect Land Trust Alliance Standards & Practices and land conservation best practices.

The Plan was prepared with the assistance of Innovations in Conservation LLC, strategic planning consultants; Rick Lederer-Barnes, GIS Specialist and Environmental Planner; Michael Batcher, Ecologist and Environmental Planner; Abby Weinberg, Climate Change Specialist at Open Space Institute; and Nick Conrad, New York State Heritage Program Information Resources Coordinator and RLT Board member. We extend our appreciation for their excellent work. We also thank the members of the Conservation Plan Steering Committee for their input and review: Sally Lawrence, Tom Phillips, Paul Schroeder, and Kristina Younger as well as Ingrid Haeckel from the Hudson River Estuary Program and Linda von der Heide from the Rensselaer County Economic Development & Planning Department for their review and comments.

RLT needed to assemble significant amounts of data for the Plan. We wish to acknowledge the assistance of Dr. David Hunt, the Open Space Institute, The Nature Conservancy, and Scenic Hudson for helping us with our data needs, especially around climate resiliency. We also thank the Woodstock Land Conservancy and Hudsonia for identifying conservation planning concepts for the Hudson Valley region that informed this plan. Finally we thank our funders, without whose financial support this Plan would not have been possible: the NYS Conservation Partnership Program led by the Land Trust Alliance and the New York State Department of Environmental Conservation (DEC), DEC's Hudson River Estuary Program, the Hudson River Valley Greenway, Royal Bank of Canada, the Louis and Hortense Rubin Foundation, and volunteers from the Rensselaer Land Trust who provided in-kind matching support.

1. Introduction

The Purpose of the Land Conservation Plan

The Rensselaer Land Trust (RLT) prepared this Land Conservation Plan (the Plan) to identify key lands in Rensselaer County for conservation and to assist and inspire the conservation efforts and land use decisions of its partner organizations and municipalities in the region. The RLT Board of Directors and staff will use the Plan to create strategies to meet its conservation goals through 2030. To date, RLT has protected more than 1,300 acres of land in the County and its environs. Nine are fee-owned properties and fifteen are conservation easements.

The Plan complements RLT's 2018 to 2023 Strategic Plan, which will be completed in 2018. The strategic plan describes RLT's objectives in land conservation and stewardship, community outreach, and our role in addressing the effects of climate change. The Strategic Plan and this Land Conservation Plan are designed to be closely aligned and reflect Land Trust Alliance Standards and Practices.

RLT anticipates that the Plan will be implemented in collaboration with partner organizations and state, county, and municipal agencies. To support the implementation of the Plan, RLT will share information with its conservation partners, and together we will develop joint objectives and strategies. For example, RLT may need to expand its stewardship capacity as more land is protected.

Internally, the responsibility for implementing the Plan rests with RLT's board and staff. RLT may also assign the monitoring of the real estate market for prospect properties to volunteers. Our aim in creating this role is to enhance engagement from local people in implementing the Plan and to build capacity for managing the land protection process.

RLT will also develop fundraising strategies for both specific land conservation projects as well as regional land conservation efforts. Fundraising strategies may include donations, government and foundation grants, business sponsorships, and planned giving, among others. In the future, RLT may also need to conduct capital campaigns to ensure the organization's sustainability as it expands its conservation activities.

The Case for Land Conservation Planning

In the 665 square miles of Rensselaer County there is an abundance of scenic hillsides, watercourses, forests, and farms that are worthy of protection. Yet despite this plethora of conservation opportunity RLT must ensure that it is protecting the most critical sites and that we are effective and efficient in doing so.

This Plan has identified key undeveloped lands in the County where we will spend our time, money, and energy to conserve. These sites offer the best opportunities to protect the core conservation values and quality of life in our service area – Rensselaer County and its environs – from questionable development as the economy of the capital region expands and more undeveloped places are converted into building sites. From 2000 to 2015 about 6,000 housing units were built in Rensselaer County.

To create a land conservation plan, a land trust must have a sense of its identity and role in the community. These require an organizational mission, an understanding of the history and features of the region where it operates, and land protection criteria that guide the process for selecting conservation projects. RLT's mission is to conserve the open spaces, watersheds and natural habitats of Rensselaer County for the benefit of our communities and future generations. A brief history of Rensselaer County and its regional and local setting can be found in the Appendices.

One of the key questions RLT wants to address in this Plan is which lands in the County are most threatened by climate change. Increasingly, land trusts across America are seeing a relationship between land conservation and adapting to changes in temperature, precipitation, sea level rise, and more destructive storm events. Essentially it means operating with some degree of uncertainty about the future characteristics of a land parcel. Because a land trust protects property in perpetuity, such uncertainty is an important matter to RLT, and the landowners we work with. RLT wants to be a leader among land conservation organizations in the northeast in addressing this vital concern.

Preparing a land conservation plan helps us add this new climate resiliency component to our work while better allocating our resources, resulting in more conservation. We hope too that the Plan presents a clear case for support to funders by showing them that we are pursuing the places that offer the greatest benefits.

Finally, having a land conservation plan helps the organization say "no" to projects that may seem attractive at first glance. Through the results drawn from the analyses in the Plan, we can better ensure our land protection choices reflect the best places to conserve and the best uses of our organizational resources.

2. Preparing the Plan

To develop the Plan, RLT first considered the features contributing to the County's physical, ecological, and cultural landscapes, such as topography, land cover, water sources, viewsheds, and land uses, among others. RLT then identified a set of factors that impact these features, including biological diversity; water quality and quantity; resilience to climate change; agricultural patterns, and scenic and recreational aspects. Finally, RLT considered important conservation principles such as:

- Ensuring landscape connectivity;
- Minimizing barriers and hazards to wildlife movements between diverse habitats;
- Maintaining buffer zones around sensitive areas;
- Maintaining water movement across the land and through the soil; and
- Promoting economic sustainability and cultural vibrancy for people living on or near protected land.

With this information as a foundation, RLT then identified resource targets and conservation priority areas for the County[1]. Resource targets are the features that RLT deems essential to Rensselaer County's physical and biological well-being, economy, and quality of life, including:

- Water resources: surface water, wetlands, riparian areas, floodplains, groundwater aquifers, and wells and well protection areas;
- Ecological resources: Hudson River tidal wetlands, rare species populations, natural ecological communities, forests, aquatic networks, and grasslands;
- Climate resiliency for biodiversity (i.e., the capacity of plants and animals to cope with stresses from climate change);
- Agricultural resources; and
- Scenic and recreational resources.

Conservation Priority Areas are the places where RLT's land protection efforts and those of its partners can best benefit the people and biodiversity of the County.

A series of maps illustrates the five resource targets and conservation priority areas and a composite map shows the aggregation of the highest conservation opportunities among the five targets and priority areas in the County. In addition to the maps, the Plan contains tables showing the targets and priorities. There is also a map showing the results of the community surveys of scenic places in Rensselaer County.

In addition to the county-wide data we have created maps for each of the municipalities in Rensselaer County. These maps, found in the appendices and the RLT website (www.renstrust.org), show the resource targets and conservation priority areas in each community.

Over the twelve years of this Plan, RLT will evaluate land parcels in the priority areas for conservation. These parcels may become available through voluntary landowner actions to conserve their land or through the real estate market. RLT will compile a confidential list of candidate land parcels

1 "Resource Target" and "Conservation Priority Areas" terms used by permission of Woodstock Land Conservancy from Strategic Conservation Plan, Woodstock Land Conservancy, Fall 2013.

within each of the conservation priority areas with parcels evaluated according to their conservation importance.

Parcel selection will reflect a current assessment of where to focus RLT's activities, but this Plan would not cover all the potential places for conservation in the County. Rather, RLT anticipates that other sites will be considered for RLT action should conservation opportunities arise on lower scoring lands that would serve RLT's mission. This is especially true for urban areas like the City of Troy and the City of Rensselaer where scores might be relatively low but nonetheless may have prospects for conservation that would benefit their communities.

It is worth posing a few considerations here as part of the learning process that went into preparing the Plan and may be useful in implementing it:

1. RLT recognizes that the Plan is only a snapshot in time and needs to be periodically updated. Resource conditions are always changing, and new data will become available that will modify our analysis and therefore the delineation of conservation priorities. This is especially true of climate change resilience and connectivity data, which The Nature Conservancy and others continue to refine. The coming years will bring new insights and more detail, so updates to the climate resiliency section and likely the entire Plan should be considered before too long.

2. RLT will engage local and regional decision-makers about the Plan and will promote the importance of climate change resilience to conservation and community planning. The Plan does little good filed away for reference; it needs to be put to work as an organizational management tool. Activities include hosting local workshops with conservation partners in the County, presentations at key conferences in the capital region, and outreach through social media. As part of our outreach on the Plan we are preparing a concise highlights-oriented, lay language summary to be distributed widely as an educational effort; and will offer web-based information on local land conservation, including portions of this report, the summary, maps, and other tools.

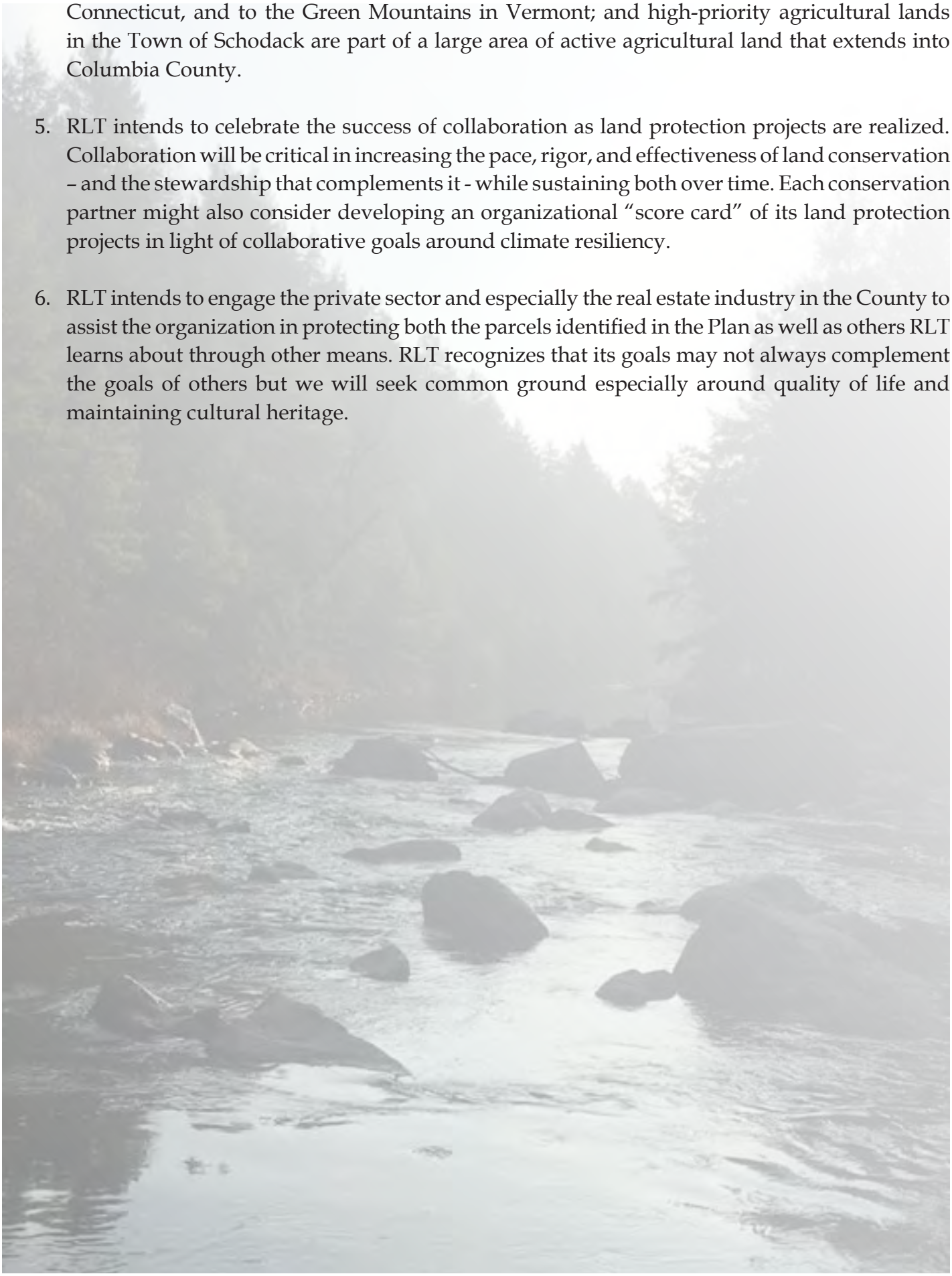
3. Regarding climate change resiliency, the Plan focuses on conservation priorities for places with current climate change resilience for biodiversity. Because RLT operates over a decades-long time frame we will also look to conserve undeveloped land that may be subject to climate change impacts in the mid and longer term future. This suggests the need for RLT to lead strategic conservation planning campaigns with local and regional partners to focus on ensuring there are undeveloped tracts in the County to buffer against the uncertain impacts of climate change.

4. Since one of the main goals of this plan is to inform the work of RLT, and RLT's service area is predominantly in Rensselaer County, it was decided to devote the available time and funding to identify conservation priority areas only within Rensselaer County, and to only use data about Rensselaer County as input to the priority scoring. Future work could take this plan's methods and apply them to priority scoring of Rensselaer County together with its neighboring towns, areas, or counties. For two examples, the extensive forests of the northern Taconics in Rensselaer County connect to the Berkshires and southern Taconics in Massachusetts and

Connecticut, and to the Green Mountains in Vermont; and high-priority agricultural lands in the Town of Schodack are part of a large area of active agricultural land that extends into Columbia County.

5. RLT intends to celebrate the success of collaboration as land protection projects are realized. Collaboration will be critical in increasing the pace, rigor, and effectiveness of land conservation – and the stewardship that complements it - while sustaining both over time. Each conservation partner might also consider developing an organizational "score card" of its land protection projects in light of collaborative goals around climate resiliency.

6. RLT intends to engage the private sector and especially the real estate industry in the County to assist the organization in protecting both the parcels identified in the Plan as well as others RLT learns about through other means. RLT recognizes that its goals may not always complement the goals of others but we will seek common ground especially around quality of life and maintaining cultural heritage.



3. Community Inputs

RLT sought input from community members in preparing this Plan. Community input for the Plan had two components: community values meetings and surveys. The community values meetings were held in partnership with the Cornell University Department of Natural Resources, with funding from the Hudson River Valley Greenway and from the Environmental Protection Fund through the NYSDEC Hudson River Estuary Program and the NYS Conservation Partnership Program.

Four community values meetings were held around the County to gather input from residents on lands they value for recreation, scenic views, natural resources, wildlife, and quality of life. RLT was most interested in obtaining information about the places people most appreciate as well as locations of popular scenic views and roadways.

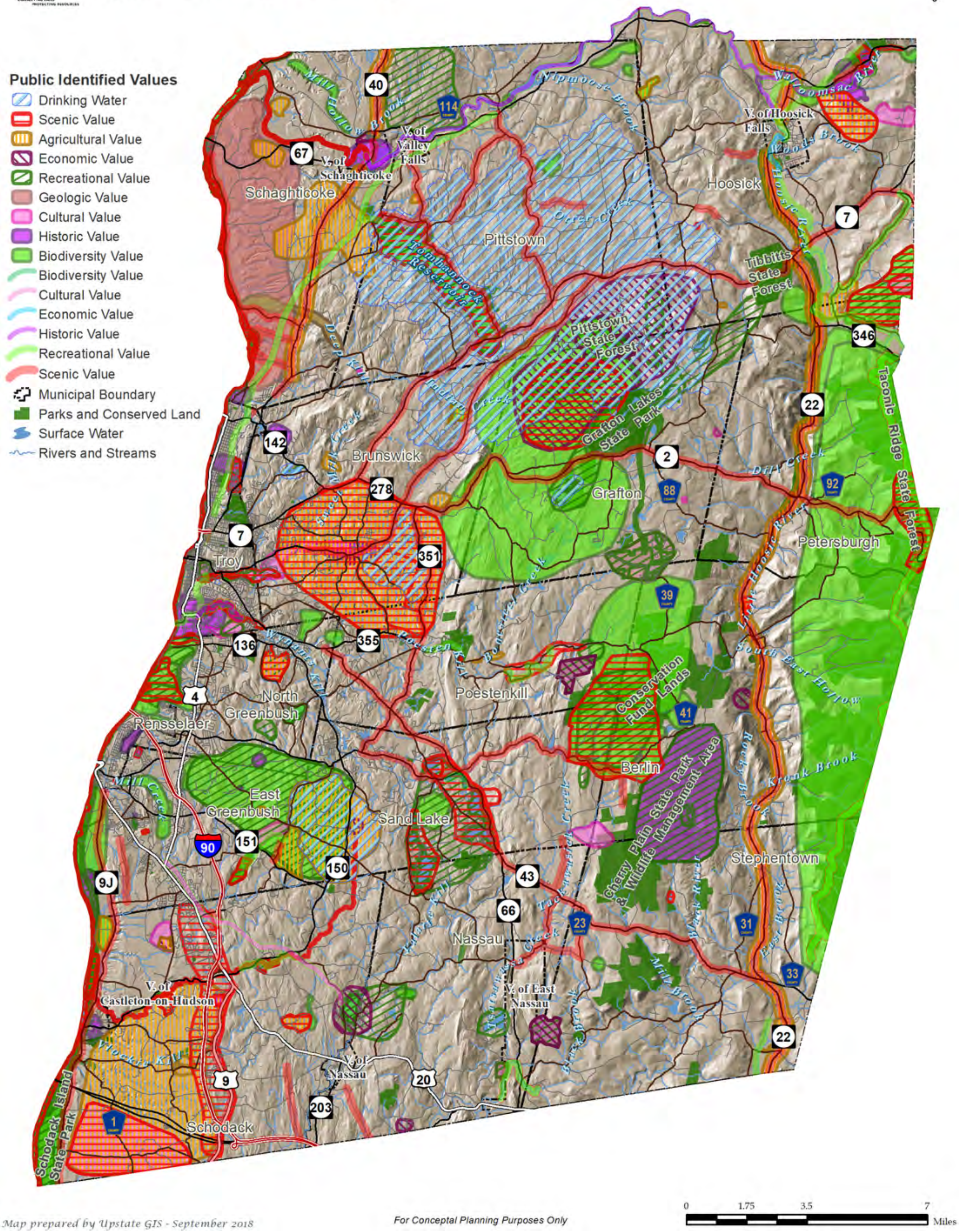
Landowners, business owners, hikers, cyclists, hunters, skiers, snowmobilers, realtors, and anyone interested in the future of Rensselaer County's landscapes and resources were encouraged to attend. The meetings were held in Hoosick Falls, East Greenbush, Valley Falls, and Troy. About 100 people attended the four workshops.

Volunteer facilitators were trained prior to each workshop and a consistent format was used. Break-out groups were given large format maps and a note-taking scheme to facilitate the subsequent digitalization of the results. The break-out groups reported many places with well-known scenic values as well as some surprising and interesting ones.

The map on the following page shows areas in the County that community members identified as worthy of conservation. Appendix A lists these areas by municipality and by type of community value. A sample of these areas includes corridors along Routes 2, 7, and 22, the Tomhannock Reservoir area, Cowee Forest, and the Hudson River shoreline.

RENSSELAER LAND TRUST

Figure 1: Public Input Summary



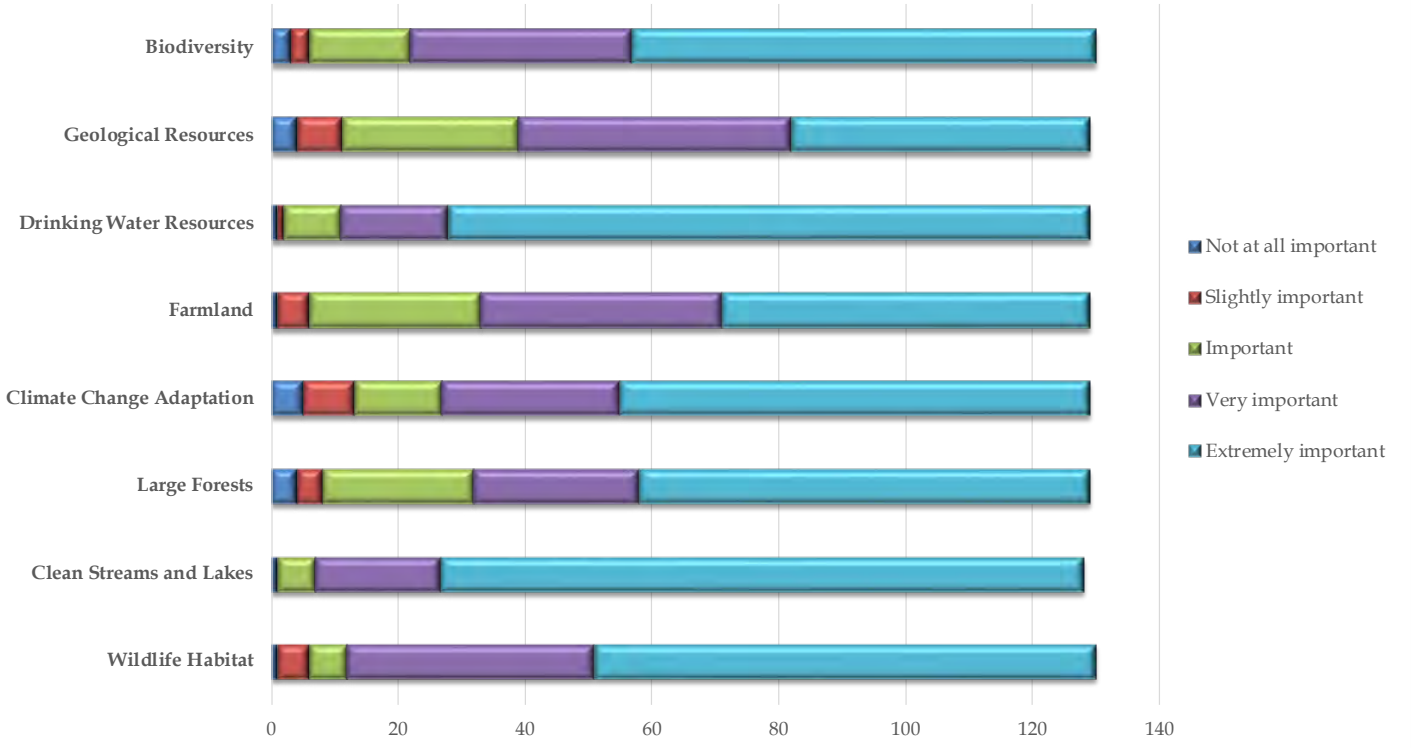
RLT prepared a survey about the organization's current and future work for community members who could not attend the workshops. The survey was made available on the RLT website, through e-news blasts, and via a link on RLT's Facebook page. Additionally, surveys were distributed at RLT events, the four community values workshops, and at the kiosks located at RLT's nature preserves. A postcard version was printed and mailed. The survey was designed with the assistance of Rubins Fellow, Keith Fletcher who provided guidance on content, and compiled and analyzed the results. About 130 people participated in the survey, including both RLT members and non-members.

Among the questions RLT asked in the survey, both of the following were especially relevant to the Conservation Plan:

- Please rate how important it is to you that land conservation (i.e., via conservation easement, donation or purchase of land parcels, conservation and protection activities), support the following outcomes.
- Please rate how important it is to you that land conservation (i.e., via conservation easement, donation or purchase of land parcels, conservation and protection activities), support the following uses.

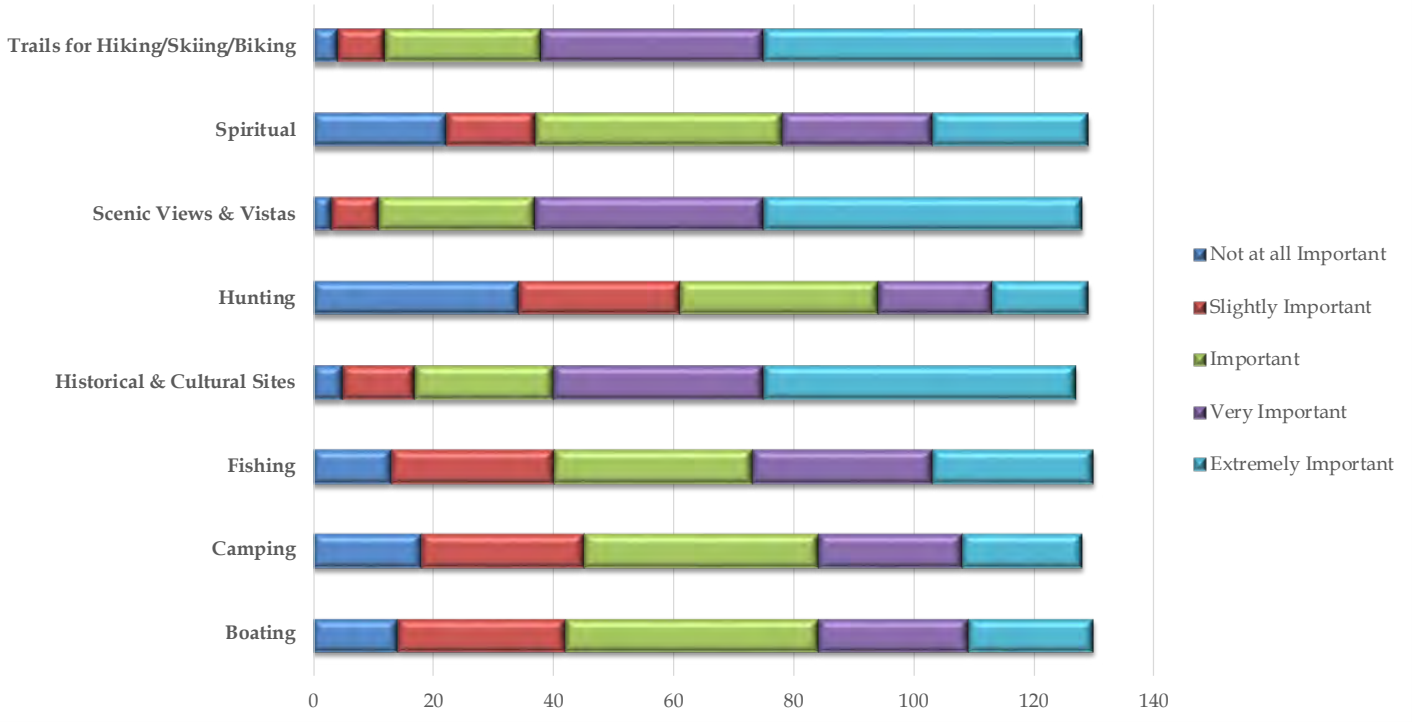
The chart below lists possible outcomes from land conservation. Water resources, including clean streams and lakes and drinking water were identified as very important or extremely important by the most survey participants followed by wildlife habitat and biodiversity. RLT has prioritized both water resources and habitat protection in this Plan.

Table 1. Community Survey Responses on Important Outcomes for Land Conservation



The chart below lists possible uses for conserved land. Scenic views as well as vistas and trails for hiking, skiing, and biking were identified as very important or extremely important by the most survey participants followed closely by uses for historical and cultural reasons. Protecting the highly valued scenery of Rensselaer County and creating trails have been and will remain key priorities for RLT.

Table 2. Community Survey Responses on Important Uses of Conserved Land



4. Existing Conditions

As a starting point for preparing the plan, RLT collected and analyzed data on existing conditions for the five resource targets identified as essential to Rensselaer County's physical and biological well-being, economy, and quality of life: water, ecological, climate resiliency for biodiversity, agricultural, and scenic.

Water Resources

Protecting water resources for both human consumption and ecological health is a major goal of RLT. Water resource concerns include the quality, quantity, and accessibility of water on the surface and underground and depends not only on the conditions of the water resource, but also on the conditions in the land that drains into it.

Water resources include surface water bodies such as lakes, ponds, rivers and streams; the riparian areas along rivers and streams; wetlands; and groundwater sources. These water sources provide drinking water for residents and businesses, including agriculture, as well as sources of water for wildlife and natural systems. Rainfall and snowmelt enter and leave these water resources from the surrounding upland areas as well as from groundwater. These contributing areas, especially those with steep slopes and highly permeable soils, are also important to maintaining water quality.

Surface Water

Surface waters include reservoirs, such as the Tomhannock Reservoir, lakes and ponds, vernal pools, and rivers and streams of varying sizes. The two largest rivers are the Hoosic River that makes up much of the northern boundary of Rensselaer County and the Hudson River that makes up the western boundary. The Hudson River is a tidal water body until it reaches the Troy Dam. All of Rensselaer County drains into the Hudson River. Besides the Hoosic, other major watersheds include the Walloomsac, which flows into the Hoosic, in the northeast, Anthony Kill in the northeast, the Poestenkill in the center, the Wynantskill in the east central, the Moordener Kill and Schodack Creek in the southwest, and the Kinderhook Creek in the south.

For the major rivers, water sources are both within the county but also well outside the county and state boundaries. The Hudson River watershed reaches to the Adirondacks and includes portions of Vermont. The Hoosic watershed includes areas in New York, Vermont and Massachusetts. Rensselaer County has 11 watersheds within its boundaries. Within each watershed, perennial and intermittent streams provide water and habitat for many species of plants and animals.

The New York Department of Environmental Conservation (DEC), classifies water bodies based on existing or best use as follows[2]:

- Class AA or A are waters used as a source of drinking water. There are 154 miles of Class A waters in the county.

2 New York State Department of Environmental Conservation 2018 Protection of Waters Program. Available via: https://www.dec.ny.gov/permits/6042.html

- Class B is for waters used for swimming and other contact recreation, but not for drinking water. There are 74 miles of Class B waters in the county.
- Classification C is for waters supporting fisheries and suitable for non-contact activities. These may include waters suitable for trout populations. There are 483 miles of C(T) or C(TS) in the county, with an additional 593 miles of Class C streams that have no trout designation.[3]
- The lowest classification and standard is D, of which there are none in Rensselaer County.

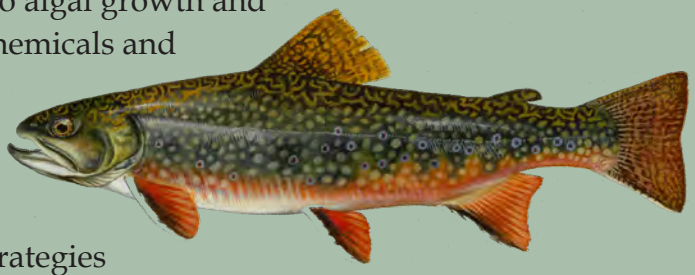
The law only protects Class C(T) or higher) and associated water bodies leaving some streams and water bodies in the county unprotected.

There are another 60 miles of unclassified streams as mapped by the U.S. Geological Survey and many additional miles of unmapped streams throughout the county. These streams can be perennial with continuous flow year round or intermittent whereby they flow after precipitation events and dry up at other times of the year. Both impact the water quality of the larger streams and rivers into which they flow. Most intermittent streams are not included on USGS or DEC maps. In fact, more than 50 percent of all streams (and by many estimates more) are unmapped intermittent streams.[4]

DEC regulations protect the bed and banks of certain streams Class C(T) or higher, leaving some streams and water bodies unprotected. Small ponds and lakes with a surface area of 10 acres or less, located within the course of a protected stream, are considered to be part of a stream and are subject to regulation under the stream protection category.

Focus on … Brook Trout

The brook trout (Salvelinus fontinalis), a member of the salmon family, is the state fish of New York. They live in rivers, streams, lakes, and ponds and prefer cool (50° to 60° F), clear, well-oxygenated water. They are sensitive to algal growth and water pollution from runoff that contains chemicals and fertilizers. They are also susceptible to low pH caused by acid rain. Increasing the size of stream buffers, avoiding tree and plant removal near rivers and streams, and decreasing polluted runoff are important strategies for protecting brook trout.



3 Waters with classifications A, B, and C may also have a standard of (T), indicating that it may support a trout population, or (TS), indicating that it may support trout spawning (TS). Special requirements apply to sustain these waters that support these valuable and sensitive fisheries resources.

4 U.S. Environmental Protection Agency, Geographic Information Services Analysis of the Surface Drinking Water Provided by Intermittent, Ephemeral, and Headwater Streams in the U.S. Available via; https://www.epa.gov/cwa-404/geographic-information-systems-analysis-surface-drinking-water-provided-intermittent

Alteration of surface and groundwater flows can affect the size, quality, and connectivity for biodiversity of surface water bodies. Atmospheric deposition can alter the chemistry of water bodies by altering the pH or level of acidity or increasing input of nutrients such as nitrogen. Surface waters that contain nutrients from farm runoff or effluent from septic systems can also negatively affect water quality. Newer threats include pollution from various pharmaceuticals that may be disposed in septic systems or sewage treatment systems and these can have significant effects on the health of wildlife. Eliminating shade along stream banks for agriculture and landscaping can result in higher water temperatures, which in turn, can harm aquatic invertebrate, amphibian, and fish communities like brook trout.

Wetlands

Wetlands are areas that are flooded or where soils are saturated during the growing season so that soils have little or no oxygen either temporarily or permanently. This results in dominance by hydrophytic vegetation, which are plants that can thrive in such conditions, as opposed to vegetation that requires higher amounts of oxygen in the soil. Wetlands store flood waters, absorb sediments and pollutants, recharge groundwater supplies, provide habitat for numerous flora and fauna, offer recreational and hunting opportunities and other functions, thereby providing numerous benefits to people.

There are over 36,000 acres of wetlands within the county, based on mapping from the DEC and National Wetlands Inventory (NWI). The DEC regulates wetlands and a 100-foot adjacent area for wetlands that are 12.4 acres or larger (or designated of unusual local importance) and that are shown on DEC maps. There may be many additional acres of wetlands that meet the 12.4 acre threshold but are not shown on the maps. Consequently, these unidentified wetlands are generally not regulated. There are 11,342 acres of mapped wetlands regulated by DEC in the county. The National Wetlands Inventory is a program of the U.S. Fish and Wildlife Service that provides information on the status and trends of wetlands in the United States.[5] There are over 25,000 acres of NWI mapped wetlands in the county that are not designated as DEC regulated wetlands. Generally, NWI and DEC wetland mapping tends to omit many smaller and dryer wetlands or portions of them. Ultimately, there is not a complete map of wetlands for the county.

Some of the largest and most unique wetlands in Rensselaer County are scattered riverine wetlands along the Hoosic River and the Hudson River, emergent marshes west of the Rensselaer Plateau, tidal marshes along the Hudson River, and two large wetlands on the plateau.

Wetlands are dependent on the input of water from precipitation, from surface waters that may flow through the wetlands and from groundwater. The water level of many wetlands fluctuates over the course of the season, which may affect the types, numbers and time period of animals that use the wetland as well as the types, abundance and spatial arrangement of plants that dominate the wetlands. For example, plants may form zones with different species dominant based on the depth of the water in the wetland. Shrubs may form dense thickets along the boundary with uplands while

5 U.S. Fish and Wildlife Service 2018. National Wetlands Inventory. Available via: https://www.fws.gov/wetlands/

cattails may dominate in deeper waters and aquatic plants like water lily float in the deepest waters.

Wetlands have declined dramatically in our region due to filling, draining, and other forms of disturbance. The construction of roads, driveways, and buildings often results in wetland loss as well as changes in the amount and quality of surface and groundwater that enters or exits wetlands. Threats can include:

- Direct loss of wetlands due to development;
- Alteration in hydrology due to changes in groundwater and surface water inputs and outputs;
- Increases in pollutants that can alter composition and structure of vegetation;
- Alterations in hydrology to tidal wetlands along the Hudson due to sea level rise which will increase water levels in the tidal portion of the Hudson River; resulting in wetland loss, movement and species composition change[6]; and
- Invasive species that can alter composition and structure of vegetation.

In addition, barriers such as roads and development, poorly designed culverts, and dams can limit movement of aquatic organisms that may move between wetland areas.

Riparian Areas

Riparian areas are transitional areas between rivers and streams as well as associated wetlands, and adjacent uplands. The types of plants found in these areas may include floodplain species, species associated with moist conditions and species that can survive in or reproduce following disturbance from flooding as well as species that thrive in more stable conditions. These riparian areas provide important buffers protecting rivers and streams from nutrients and sediments that may enter from adjacent farmlands or urbanized areas. They also provide important corridors for the movement of species, especially birds and mammals, including movement from valleys to higher elevations from which streams originate. Finally, they provide areas for accessing and viewing these water features. Protecting riparian areas is key to reducing the risk of flooding, erosion, and water pollution, and can maintain wildlife habitat and connectivity and increase groundwater recharge.

Threats to riparian areas include direct disturbance and reduction in area due to development or to agriculture, the desire to view the water body or wetland, and the loss of natural vegetation due to invasive species. Riparian areas along the Hudson River and tidal portions of tributaries could be affected by sea level rise so that the width of those areas is reduced if there is no area for vegetation to move upland.[7] The results of these threats can be increased sedimentation and nutrient input into surface waters as well as the loss of these corridors for species movement.

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6 Tabak, N. and S. Spector 2016. Protecting the Pathways: A Climate Change Adaptation Framework for Hudson River Estuary Wetlands. Scenic Hudson, New Paltz, NY.

7 Ibid.

Focus on … Wood Frog

The wood frog, (Rana sylvatica), lives mostly under leaves and moss on the forest floor. They breed in temporary woodland pools, migrating overland by the thousands in rainy weather in the early spring. They are often seen crossing roadways and other paved surfaces to reach woodland pools. These dangerous treks lead to significant mortality as does loss of wetlands and fragmentation of forest habitats.

Photo by Daniel D'Auria

Floodplains

Floodplains are low-lying areas along rivers and streams. They can be found along the Hudson, Hoosick, Poestenkill, and many other smaller water courses in Rensselaer County. They are often biologically productive, and their fertile soils make for good farming. Increased residential development can separate streams from their floodplains and result in downstream flood damage. Climate change may increase the frequency of major storms and exacerbate flooding by increasing flow velocity during storms. Conserving floodplains can reduce damage from flooding while providing important wildlife habitat.

Groundwater

Groundwater Aquifers

Groundwater is found below the surface in spaces in soil, sand, gravel, and in fractures within rock. Groundwater sources for wells may be found within gravel deposits left from previous glaciations or within bedrock fractures. The latter are more difficult to locate and the yields are more difficult to predict. Surface waters may recharge ground waters as water from rivers, lakes or wetlands seeps into sand and gravel or into bedrock fractures. Alternatively, ground waters may discharge into surface waters if the two are connected. This may occur in seeps and springs or in groundwater entering streams from adjacent upland. The latter provides the continuous flow of water found in streams when there has been little or no precipitation, such as in the dryer parts of summer or fall.

Wells and Well Protection Areas

Wells and well protection areas are critical sources of drinking water. Generally, but not always, the source of a well is the area of the surface watershed within which the well is found. However, depending on the type and orientation of bedrock, water traveling to that well may come from outside of that surface watershed or be limited to a sub-area of the watershed.

Approximately forty percent of the County's population relies on groundwater for their daily water needs.

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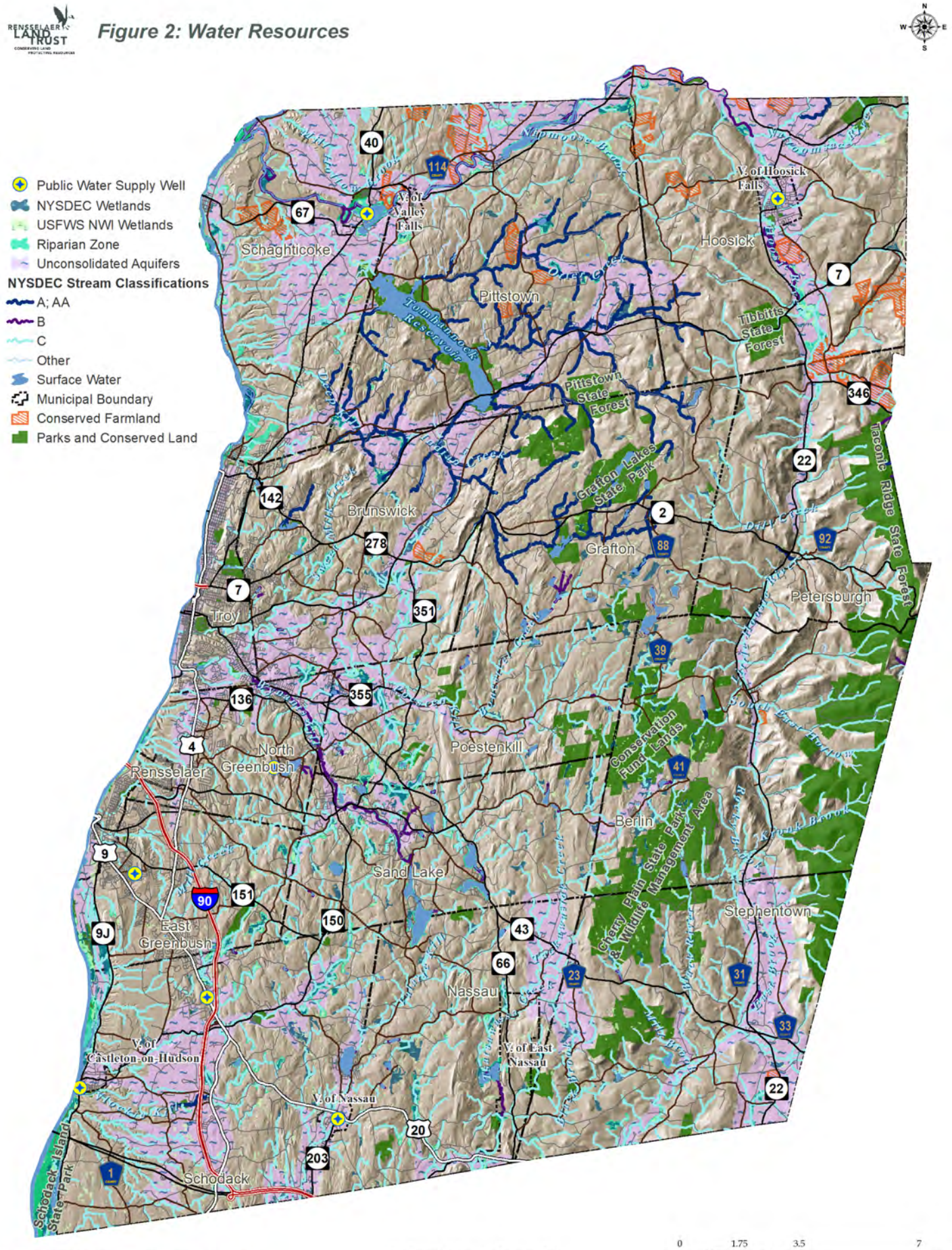
Figure 2: Water Resources



Map prepared by Upstate GIS - September 2018

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Threats to Water Resources

Land development is the major threat to water resources. Runoff, erosion, decreased infiltration, and pollution all can reduce the quality and quantity of water supplies. Creating impervious surfaces like roads and parking areas increases runoff velocity, leading to erosion of river and stream banks. Precipitation transports contaminants such as petroleum products, road salt and other chemicals into the water. The use of fertilizers and pesticides on farms, golf courses, lawns, and gardens can degrade water quality and change the flora and fauna of rivers and streams. For example, in 2014, the chemical Perfluorooctanoic Acid (PFOA) was discovered in the public drinking water of Hoosick Falls and was later found in the public water supplies of nearby communities and in over a thousand residential wells in the region. PFOA was once a key ingredient in the manufacture of high-performance plastics like Teflon and Gore-Tex. Ingestion of even tiny amounts of PFOA and related per- and poly-fluorinated compounds – on the scale of parts per trillion - may be a human health risk whose effects may not be seen for several decades.

Keeping forests, grasslands, and floodplains intact and undisturbed is an effective way to protect water resources. Wetlands should be protected from draining and filling whenever possible. Groundwater is threatened from reduced infiltration from the expansion of impervious surfaces, which, in turn, reduces flow to wells and recharge.

Conservation Strategy: Conserving land along both small and large stream corridors will contribute significantly to protecting water resources throughout the County.

Ecological Resources

Rensselaer County encompasses ecologically diverse areas ranging from Hudson River tidal habitats at its western edge to higher elevation boreal forests in the Taconic Mountains in the east. In between, the County has large areas of contiguous, high quality forest, as well as lakes, ponds, streams, meadows, and farmland.

The Hudson River estuary extends 150 miles from New York City to the Federal Dam in Troy. In Rensselaer County the estuary includes riverine, open water, and tidal wetlands as well as supratidal wetlands and some adjoining uplands and nontidal wetlands. While the shoreline is mostly developed, opportunities to protect important ecological features remain, as well as the opportunity to increase recreational access for community members and visitors and to protect scenic views.

In the center of the County, the Rensselaer Plateau is known for its large contiguous forest blocks and supports regionally significant populations of large mammals, forest interior nesting birds, cold water fish, reptiles, amphibians, and rare plants. It also has a long tradition as a working forest economy.

Besides the plateau, Rensselaer County has other important forested areas, many of which have both critical habitat and water resource values, and that also provide important habitat connections,

allowing the free movement of wildlife across the landscape. While some forest lands in Rensselaer County are protected, most are threatened with loss and fragmentation from the spread of residential development and other disruptions.

However, even in the more developed western parts of the County, remaining forest fragments provide valuable refuge and connective pathways for plants and wildlife, provide other ecological services like groundwater filtration and recharge, and offer opportunities for recreation.

The Taconic Mountains lie in the easternmost part of the County. The New York Open Space Plan, most recently updated in 2016, lists the Taconic Mountains as a priority conservation project area because of its high biodiversity, scenic views, recreational value, working forests and farmland, and potential connections to other protected lands in western Massachusetts and southwestern Vermont. Community members surveyed for this Plan also appreciated its scenic views. The Route 22 corridor in the Taconic Mountains has been a focus of RLT's land conservation efforts since our founding.

The following sections provide an overview of several key ecological features of Rensselaer County:

Hudson River Tidal Wetlands

Wetlands along the Hudson River in Rensselaer County are tidal below the Troy Dam and many occur where streams empty into the Hudson. Tidal wetlands are places of concentrated biological activity, hosting abundant and diverse macroinvertebrate (organisms without a spine that are large enough to be seen by the naked eye) communities and serving as spawning sites for fish and foraging sites for birds. Shortnose sturgeon (NYS and Federally-Endangered Species) use these habitats in Rensselaer County as do other anadromous fish (fish ascending the river to spawn). Waterfowl favor tidal wetlands as well.

Rare Species Populations

The New York Natural Heritage Program conducts inventories for and maintains databases of rare plant and animal that are rare in New York State (see Appendix D for a list of these species). These are species that may be limited in range, may be at the edges of their ranges, may be restricted to specialized habitats, or may be low in abundance for other reasons. NatureServe, an international organization that supports heritage programs, tracks these nationally and internationally. Concentration areas of plants that are rare in Rensselaer County constitute over 28,000 acres in Rensselaer County while important animal habitats cover over 136,000 acres, based on work by ecologist Dr. David Hunt who has completed extensive studies in the County.

Focus on … Wood Turtle

Photo by Colin Osborn/USFWS

The wood turtle, (Clemmys insculpta), a species of NYS Special Concern, lives in perennial streams with sandy or gravelly bottoms and muddy banks. It moves to wetland and upland habitats, including grasslands, to forage and nest during summer months. The species is threatened by habitat loss and fragmentation and by illegal collection. Conserving the wood turtle involves protecting stream habitats, riparian wetlands, grasslands, and the upland migration corridors between them.

Natural Communities

Natural communities are groups of interacting plants and animals that share a common environment and generally repeat across a landscape. There may be differences between examples or occurrences, but all fall within a range of variability of size and plant and animal species composition. These communities can be common or uncommon and, like rare species, may be restricted by range or physical conditions and are maintained by a distinct suite of ecological processes that may be related to nutrient availability, hydrology, disturbance, or other processes. There are over 48,000 acres of natural communities documented by the New York Natural Heritage Program in Rensselaer County (see Appendix D for a list of natural communities of statewide significance documented in Rensselaer County).

Forests

Forests represent the largest, natural terrestrial systems in the world and may be defined as areas dominated by trees with a canopy cover greater than sixty percent.[8] There are over 250,000 acres in forests in Rensselaer County – almost sixty percent of the land area. In fact, Rensselaer County hosts some of the largest remaining contiguous forest in the state, much of which is located on the Rensselaer Plateau. Red and white oak, sugar maple, hickory, beech, and hemlock are commonly found tree species on the plateau.

Forests provide habitat for a variety of wildlife. They also provide wood resources for construction materials and fuel and the economic benefits of forestry operations. Forests also provide for recreational uses including hunting and hiking and for outdoor enjoyment that can have health benefits. Forests absorb precipitation and slow the rate of runoff thereby providing protection from floods and sedimentation. They also absorb nutrients, thereby providing for clean water entering surface and groundwater supplies.

8 This is a broad definition. Tree or stem density is another way of determining whether an area is a forest or not. The size of the forest area may also contribute to the definition.

Large areas of contiguous forest, unfragmented by roads, development or agricultural lands, may form a "matrix community." This is like a large basket within which are found large and small patch communities including unique natural communities, wetlands, water bodies, and other features. The largest of these is over 19,000 acres in the Taconics and the second largest is over 9,600 acres in the northern part of the Rensselaer Plateau in Grafton. Over 35,000 acres are protected by New York State or other agencies and organizations or about 8% of the County.

Forests are critical to wide ranging species as well as neotropical migratory birds. Connections between forests of varying sizes provide for movement of fauna that may be wide ranging or may move short distances while foraging or reproducing.

Conservation Strategy: Avoid fragmenting habitats by protecting larger areas, especially those contiguous to existing protected lands.

Large Grasslands

Large grasslands, including old farm fields, pastures, hayfields, and active cropland occur throughout Rensselaer County but predominate in the north. Large grasslands are important nesting and foraging habitats for grassland-breeding bird species, many of which have been in decline over recent decades, such as the northern harrier (NYS Threatened). Grasslands can also support a rich insect fauna including pollinators that are critical to agriculture. Of course, large grasslands themselves can be significant agricultural resources.

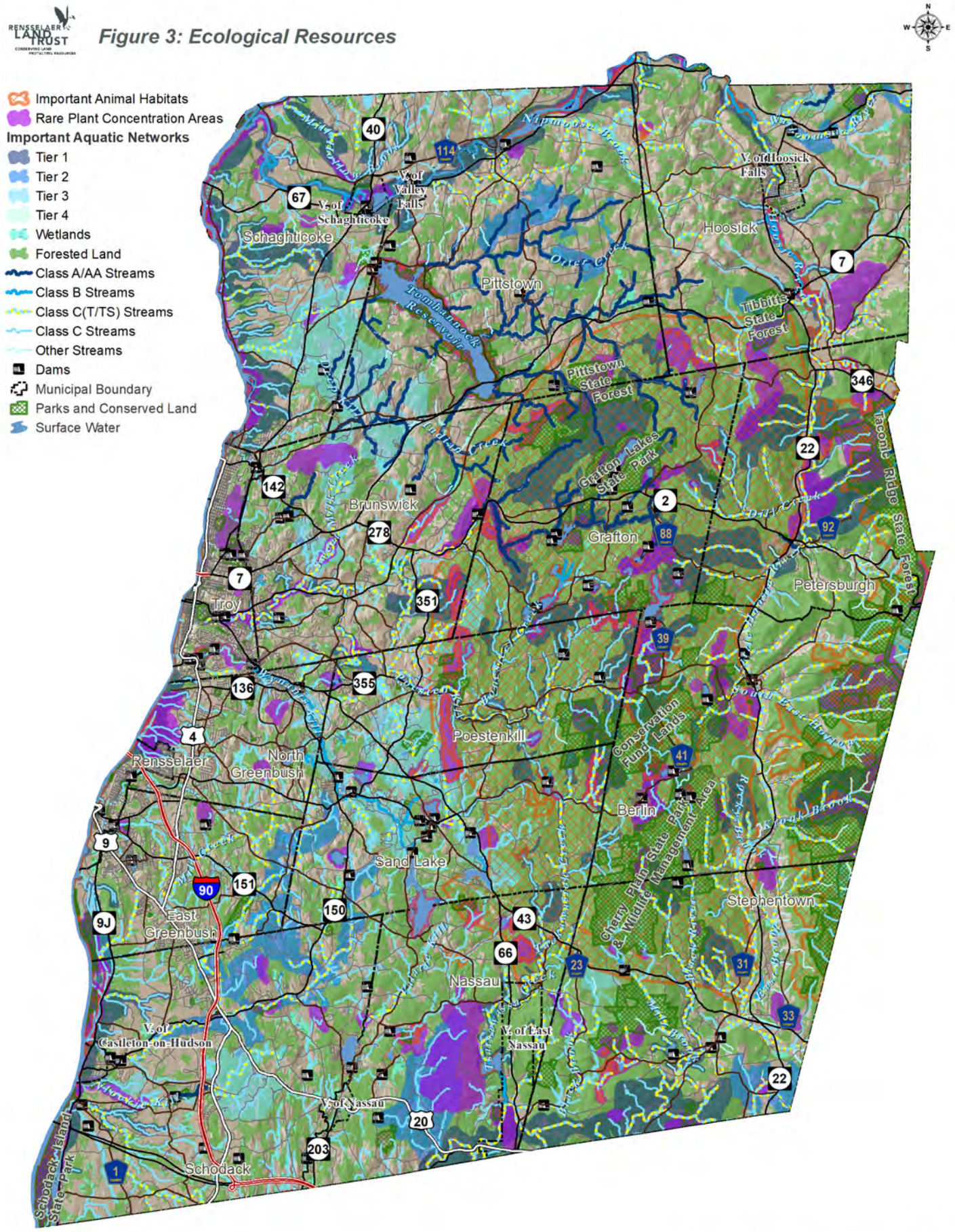
Focus on … Golden Club

Golden Club, Orontium aquaticum L., is found in freshwater intertidal mud flats and marshes along the Hudson River. It is vulnerable to competition by invasive species including Phragmites and water chestnut and by erosive boat wakes. It is a threatened species in New York. Golden club can be protected by creating buffers around populations to ensure habitats and hydrology are undisturbed.

Photo by Dave Pape

A map of Rensselaer County ecological resources appears on the next page.

Figure 3: Ecological Resources



Map prepared by Upstate GIS - September 2018

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Threats to Ecological Resources

Land development can negatively impact ecological resources in Rensselaer County. For example, subdividing large forested tracts or grasslands into building lots fragments the natural land cover into smaller blocks that are often unsuitable for wildlife species that require large areas of habitat for foraging and reproduction. It also increases human contact for species that are sensitive to disturbance and can lead to potential invasion by non-native plant species especially at the edges of land parcels. Non-native species such as common buckthorn, multiflora rose, garlic mustard, and Japanese knotweed are widespread in Rensselaer County and often grow vigorously on disturbed land.

Roads and other developed areas that divide forests and grasslands also act as barriers to wildlife movement, especially for species that move among several habitats to fulfill their food, shelter, and reproductive needs. Longer term, habitat connectivity is critical for ensuring genetic exchange among more distant populations and will likely be vital for species needing to migrate because of climate change.

This discussion suggests that two key components of RLT's land conservation planning should be to avoid fragmenting habitats by protecting larger areas, and to connect habitats wherever possible to ensure that the movement and migration requirements of plant and animal communities are maintained across the landscape.

Other threats to ecological resources include:

- Interruption or disruption of ecological processes such as alteration in the hydrologic regime;
- Invasive insect species such as the hemlock wooly adelgid that cause tree mortality;
- Invasive plant species such as Japanese Barberry that may reduce regeneration of forest species;
- Overabundance of white-tailed deer that reduce regeneration;
- Atmospheric deposition of nitrogen that can alter nutrient cycles; and
- Atmospheric deposition of acidic precipitation that can reduce available nutrients.

Responding to Changes in Climate (Climate Resiliency)

Climate resilience is the ability of an ecosystem and its plants and wildlife to cope with the changes caused by gradual increases in temperature, precipitation, sea level rise, and the effects of more severe and frequent storms. Resilience is part of a continuum of site conditions that ranges from vulnerability to resistance. Vulnerable places typically require significant and ongoing intervention to protect them from gradual or sudden changes; resistant places, on the other hand, can adapt to all but the most extreme changes. Resilient places lie somewhere in the middle of the continuum.

With moderate disturbances, a site may continue to support diverse life and natural processes. However, with more extreme and frequent disturbances, such as wider temperature ranges, and heavier storms, the responses would likely be more varied:

- A vulnerable site might experience more stress and may take decades or even centuries to recover. Many species may not find a favorable habitat and will either migrate or die off.
- The resilient site will have an uneven response to the disturbance. Here, species will find a diversity of habitats, and will likely adapt more quickly than the vulnerable site. Some species will persist locally while others will not adapt without intervention.
- The resistant site will avoid significant damage. Resistant sites are somewhat rare.

In Rensselaer County, climate change is predicted to alter temperature and precipitation patterns well beyond the term of this land conservation plan. Since 1970, the annual average temperature in New York has risen 2.4^{0}F with winter warming exceeding 4.4^{0}F. Average annual precipitation has increased, with more precipitation in the winter and less in the summer. The amount of precipitation falling in downpours has increased 70% across the northeastern United States. Spring is beginning earlier and winter snow cover is decreasing. Reductions in snowmelt may reduce groundwater infiltration and increase the frequency and severity of droughts.

Temperature and precipitation are both expected to increase through the 21st century. In addition, sea level rise will increase the level of the Hudson River, particularly during high tides.[9]

Climate change may also increase the types and number of severe storms that produce significant precipitation and damaging winds as well as droughts. Large amounts of rainfall can increase water volume and flow velocities in rivers and streams leading to increases in harmful sediments and organic matter flowing into drinking water supplies. Floods, or conversely droughts, as well as increases in water temperature may adversely impact trout and other sensitive stream species that require cool and clear water, threatening fishing in the County.

Warming in the region is predicted to significantly affect the composition and distribution of habitats and wildlife and will force many species to migrate as former habitats become unsuitable.

Both the overall trends and severe events will change the habitat of numerous species of animals and plants by altering the amount of available moisture and increasing the frequency of periodic disturbances. Species will likely adapt by seeking suitable habitat, which may be different from where they live now.

Climate change will also result in sea level rise, including increasing the level of the tidal portions of the Hudson River and portions of its tributaries. The Hudson River Estuary is expected to rise three to six feet by 2100. Where wetlands occur along rivers, these wetlands will be completely inundated and lost. If the nearby terrain is relatively gentle, the wetlands may be able to move inland, but not in areas of steep terrain. Salinity may also increase though it is not clear how far upriver this will occur. Where sediments are trapped (a process called accretion), wetlands may establish in the shallows. For the entire estuary, Scenic Hudson has estimated wetland losses of between 150 and 4,000 acres. Therefore, the resilience of tidal wetlands is dependent on changes in overall water level, accretion of sediments, and changes in water chemistry.[4]

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9 New York Department of Environmental Conservation 2018. Impacts of Climate Change in New York. Available via: https://www.dec.ny.gov/energy/94702.html

As temperatures rise in Rensselaer County, species from further south will be able to colonize northern areas while northern species and those at higher elevations may be reduced in abundance or extirpated. Invasive species not currently found here may also find their way to the County. Many invasive species outcompete native species or directly affect those species. Examples include the hemlock wooly adelgid (*Adelges tsugae*), which can decimate hemlocks and the emerald ash borer (*Agrilus planipennis*), which has dramatically reduced ash trees where it is found.[10] Hemlock woolly adelgid has been found in Schodack, East Greenbush, Berlin, and Troy; and emerald ash borer has been found in Stephentown, East Greenbush, North Greenbush, and Troy.

Land protection is a key strategy for ensuring that habitats will continue to thrive. While it is difficult to accurately predict the response of plants and animal species to climate change, certain habitats have characteristics that make them better able to cope with disturbances. RLT can help animals and plants survive by protecting a network of lands that encompass variations in slope, elevation, moisture, and nutrient availability. Focusing on these physical characteristics helps ensure protection of the full range of plants and animals in an area. This approach allows RLT to capture the needs of most species rather than tracking thousands of species individually. It also allows RLT to conserve diversity without having to predict how all these species will migrate due to climate change. Preferably, the sites RLT protects would be large and unfragmented in order to offer species the greatest opportunity to find suitable habitat.

Protecting land also benefits human community resilience. Conserving natural infrastructure is a cost-efficient way to protect against the increased severity of storms. Keeping wetlands and floodplains undeveloped can temper flood damage. Protecting resilient sites also safeguards drinking water for local communities now and into the future.

Ultimately, RLT's goal is to help ensure that diverse and healthy ecosystems persist in Rensselaer County in the face of changing climatic conditions. To date there have been only limited links between climate change and land conservation. RLT will take a leadership role in educating the citizenry about linking classic land protection values with climate resiliency. For example, increased water levels will significantly affect other ecological values in the County. It is our hope that RLT will someday become a model of strategic land acquisition for climate change and will share its experiences with conservation organizations regionally and even nationally.

Conservation Strategy: Protect large and unfragmented sites in order to offer species the greatest opportunity to migrate to more suitable habitat in the face of climate change.

10 New York Department of Environmental Conservation 2018. Terrestrial Invasive Species of New York State. Available via: https://www.dec.ny.gov/animals/95383.html

Agricultural Resources

Ensuring the viability of local agriculture benefits the Rensselaer County economy, provides food security, maintains the scenic character of the landscape, and preserves local culture. Protecting active farms and abandoned farmland also contributes to biodiversity and nearby habitats provide water, flood attenuation, and habitat for pollinators. This Plan places a priority on protecting active farms and the best farmland soils to maximize the success of farming in the County.

A significant portion of Rensselaer County consists of active farms. Of the 425,800 acres in the county, 41,441, or over 10%, is in active production. There is a total of over 149,000 acres of prime farmland soil or soils of statewide importance in the County. Prime farmland soils are defined by the Natural Resources Conservation Service as soils best suited, both from the standpoint of economics and farming practices, for producing food, feed, forage, fiber and oilseed crops. Soils of statewide importance are designated by state agencies and may produce yields similar to those of prime agricultural soils under favorable conditions. In addition to the above, there are over 155,000 acres in agricultural districts, by which farmers gain incentives for keeping their land in agriculture.

Agriculture represents an important economic asset in the county as farmers spend money for supplies and provide valuable produce. Farms are also an important scenic resource for residents and visitors. Well-managed farms can protect water quality where soil health is promoted.

The major threat to agriculture is development that results in reducing and fragmenting farms. Unfortunately, the soils that are best for farming are also those most suitable for building houses and commercial projects because they often have good drainage and level topography. The business of agriculture is challenging; farming is hard work and recruiting new farmers to take over from aging farmers is difficult. The revenues from farming can vary widely depending on market conditions that may be driven by distant markets. The ability of farmers to hire labor can be affected by national immigration policies.

Conservation Strategy: Work with our partners to protect active farms and the best farmland soils in order to ensure the future of farming in the County.

Figure 4: Agricultural Resources

0 1.75 3.5 7 Miles

Map prepared by Upstate GIS - September 2018

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Scenic Resources

Scenic resources are sites that are visually appealing and help to define the character of a place. Because of the largely rural nature of Rensselaer County, scenic resources are abundant. There are many scenic roads and trails with views to farms, fields and forests where housing and other forms of development are few. Route 22, for example, which runs the length of the county between the Rensselaer Plateau to the west and the Taconic Mountains to the east, is a designated scenic byway. These resources are important to residents and tourists alike and promote local economies that are visited because of these scenic resources. Community members identified approximately 250 miles of scenic corridors in the county, in addition to numerous scenic vista locations.

The beauty of the scenery in Rensselaer County is closely tied to the other resources addressed in this Plan - the rivers and streams, animals and plants, and the farmland, and some scenic areas will be protected under those criteria in this Plan. But some sites warrant consideration for protection because of their importance to the people who live there. The Plan identifies the areas deemed to be of greatest scenic significance and includes them in establishing overall conservation priorities.

Recreational resources include state and local public lands that provide for hiking, hunting and other pursuits, access points for boating and fishing, and lands for forests and other natural resources managed for those resources. Recreational resources can also include private lands where owners allow access for hunting, snowmobiling, or other activities.

Finally, recreational assets include roads and trails for hiking, bicycling, or other activities and playgrounds and parks for sports, picnics and other recreation. There are approximately 130 miles of existing trails in Rensselaer County – many of them found within the nearly 36,000 acres of public parks and preserves in the County.

The New York State Greenway is developing the Albany-Hudson Electric Trail (AHET) in partnership with National Grid, local municipalities, and RLT. The 35-mile trail will run along the electric utility's right-of-way and through the Rensselaer County towns of Nassau, Schodack, East Greenbush, and the City of Rensselaer. RLT has been an active partner in the development of a section of the trail in the Town of Schodack. The project will increase hiking and biking opportunities in the County and generate income for local communities along the route. The trail is part of the recently announced Empire Trail, a 750-mile scenic trail from New York City to the Canadian border and from Albany to Buffalo which will be completed in 2020.

Conservation Strategy: Protect scenic and recreational sites that are meaningful to County residents.

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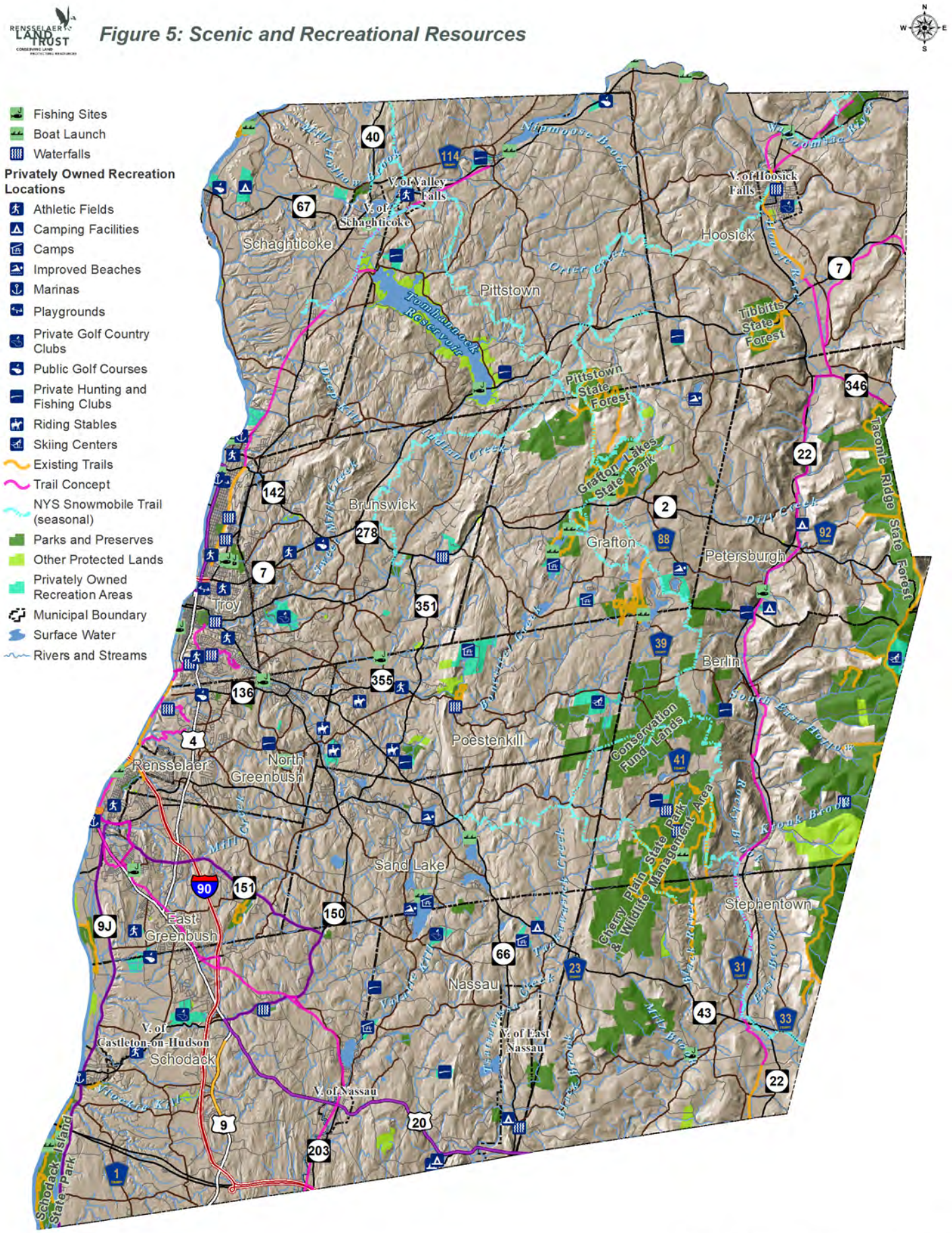
Figure 5: Scenic and Recreational Resources



5. Conservation Priority Areas

Conservation priority areas are the unprotected lands that we believe have the greatest conservation value. RLT has scored and mapped these lands according to its current assessment of importance. The RLT scoring system relies on data about land in the County that was analyzed using geographic information system technology. RLT focused on five primary natural resource themes – water, ecological, climate resiliency, agricultural, and scenic. Data for the scoring analyses were compiled from national, regional, state, and local resources. A table that lists the data that was acquired or created for this Plan is included in Appendix B.

The purpose of identifying conservation priority areas is to give RLT an understanding of the places deemed most deserving of conservation attention as opportunities arise to protect them. It must be understood, however, while that all the priority areas identified are deemed to have significant conservation value, more detailed knowledge and on-the-ground observations might yield a different evaluation and RLT anticipates and encourages future such revisions when better information is available. Evaluations may also change with changes in land uses on selected or surrounding lands, conservation status of surrounding lands, or evolving priorities of RLT. For these reasons the parcel ranks should be used only as a general aid for RLT planning, and not as a final assessment of their conservation worthiness.

Water Resource Priorities

The majority of Rensselaer County residents receive their water from the Tomhannock Reservoir. Consequently, it is important to protect land around the reservoir and along the streams that feed it. While there are several other surface water bodies used for water supply, much of the remainder of county residents are dependent on private groundwater supplies. This means it is important to conserve land where there is non-public water supply – for recharge and to protect the quality of the water flowing into wells. Aquifers in the region deserve particular attention as they are significant water sources for well withdrawals. They are vulnerable to contamination because they are often overlain by sand and gravel whose permeability make them efficient conduits for contaminants introduced by human activities.

We scored and mapped the following factors for the water resources component of the Plan:

- Wetlands, and buffers around them (NYSDEC listed wetlands score highest as do smaller National Wetlands Inventory sites that are adjacent to NYSDEC listed wetlands because they contribute to the wetlands network);
- Streams, rivers, and buffers around them (higher scores are given to buffers closer to Class AA and A streams);
- Riparian areas (all score the same because it is difficult to classify riparian areas);
- Natural land cover (forests score highest, then shrubland, then grasslands);
- Tomhannock Reservoir, its watershed and tributaries, and buffers (land closest to the reservoir scores highest);

- Public municipal well heads, their drainage basins, and buffers (land closest to well heads score highest);
- Aquifers (all land that drains into an aquifer scores the same);
- Steep slopes (lower score given to steep slopes because they are less likely to be developed); and
- Well-drained and poorly drained soils (land with well-drained soils score highest because they are more likely to be developed).

About 16,000 acres or 4% of the land in the County scored at the highest level for water resource conservation. Thirteen percent of these priority water resource acres are already protected.

The map on the following page shows priority areas for water resources land protection in the County. The chart, which follows the map, identifies these areas by municipality. Separate maps and charts for each municipality in turn are found in the Appendices. Key areas for water resource protection in the County include:

- Arc along northern escarpment of Rensselaer Plateau;
- Tomhannock watershed; and
- Hoosic River.

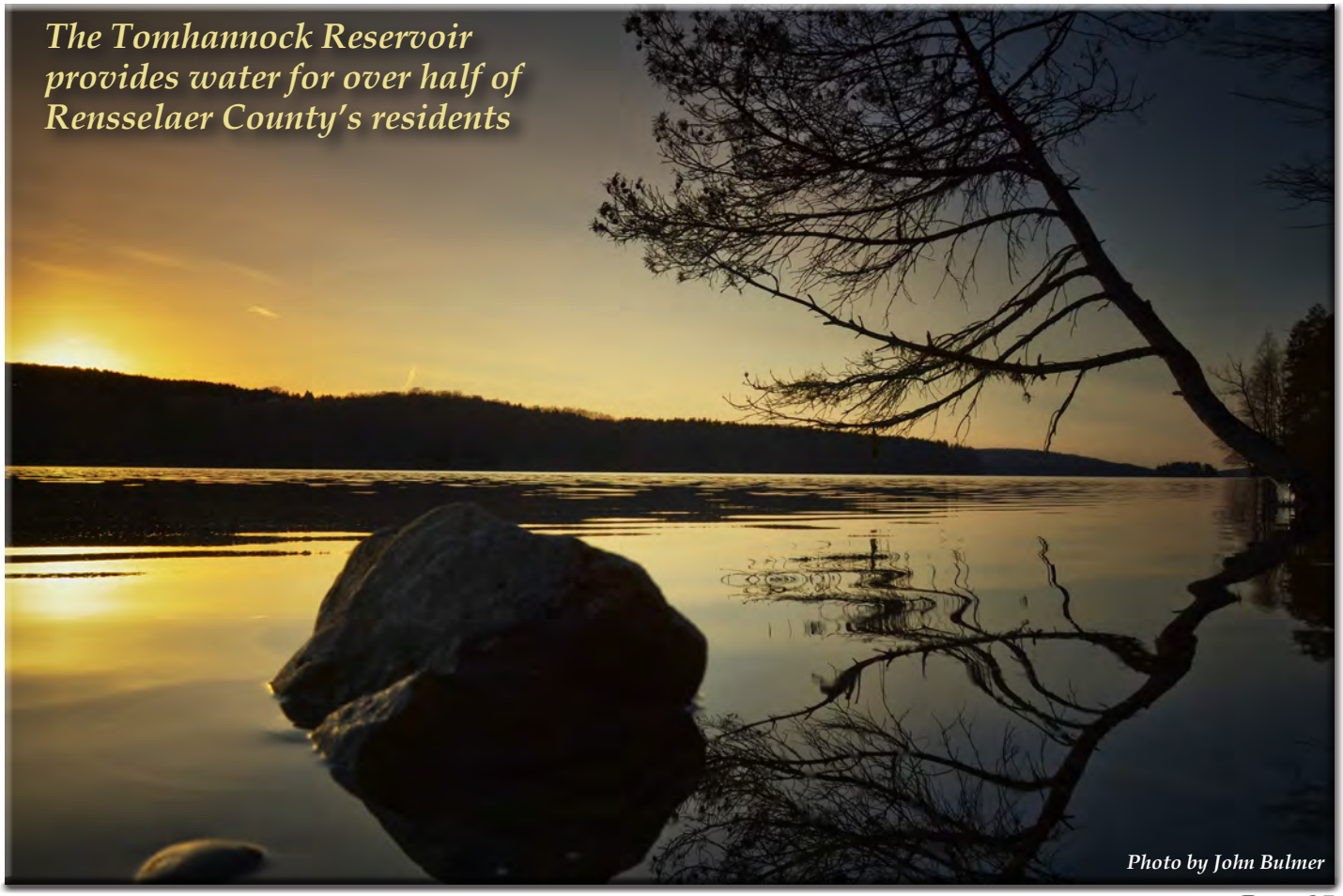


Figure 6: Water Resources Conservation Priority Areas

Map prepared by Upstate GIS - September 2018

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Table 3. Municipal Water Resources Conservation Priority Areas

Municipality	Water Resource Conservation Priority Areas
Berlin	Butternut Hill
	Rensselaer Plateau wetlands between Taborton Road and Dutch Church Road
Brunswick	Tomhannock Reservoir watershed in northeastern part of town, along Indian Creek and Tomhannock Creek
	Poesten Kill and Sweet Milk Creek corridors
	Quackenkill corridor west of Rte 351
	Area south of Spring Avenue Extension and west of Sharpe Road
	Along Deep Kill, and area south of Cooksboro Rd
East Greenbush	Areas between Rte 9J and Hudson River along Papscanee Creek
	North branch of Moordener Kill corridor along Old Best Road and between Luther Road and Rte 20
	Mill Creek between Rte 4 and I-90
	Wetlands west of Miller Road
	Wellheads in Hampton Manor
	Between Ridge Road and Rte 9J
Grafton	Tomhannock Reservoir watershed in northwestern/northern part of town, including forestlands and steep slopes
	Quacken Kill corridor
Hoosick	Wetlands and streams around Bennington Battlefield
	Hoosic River corridor throughout the town
	Wetlands and streams west of Buskirk-West Hoosick Road and south of Rte 67
	Area of Spicer and Pine Valley Roads and Rte 7
Nassau	Wellheads in the Village of Nassau
	Rensselaer Plateau around Dunham Hollow Road
	Tsatsawassa and Kinderhook Creek Corridors and Tsatsawassa Lake
	Wetlands around Mud Pond, and streams in Central Nassau hills
	Area of Cold Water Tavern Road, below Curtis Mountain, and Mashodack Hill
	Valatie Kill Corridor
North Greenbush	Wetlands and streams south of Spring Avenue Extension and west of Sharpe Road
	Wynants Kill corridor west of Brookside Avenue
	Wynants Kill Creek corridor west of Rte 150
	Wellhead areas near Snyders Lake
Petersburgh	Steep, forested slopes above the Little Hoosic River along Rte 22 west of Prosser Hollow

Table 3 (cont). Municipal Water Resources Conservation Priority Areas

Municipality	Water Resource Conservation Priority Areas
Pittstown	Tomhannock Reservoir and its shoreline areas, and tributaries and forested areas in the watershed east to the town line and to the west
	Wetland in northeast section of the town east of the Dutchaven Golf Course and along the railroad tracks
	Deep Kill between Fogerty Road and Plank Road
Poestenkill	Newfoundland Creek corridor from Rte 66, across Rte 351, to Rte 355
	Area north of Rte 355 and south of town line, west of Garfield Road
	Area south of Snyders Corner Road near Coopers Pond
	Area east and west of Rte 351 from Rte 66 south to Sand Lake town line; and along Vosburg Road
	Poesten Kill east of town center
	Wynants Kill corridor
Sand Lake	Wetlands and streams east of Rte 351 and west of Old Rte 66, south of Poestenkill town line
	Wynants Kill corridor south of Rte 43 to Garner Road, and along Rte 150
	North Branch Moordener Kill along Old Best Road
	Moordener Kill corridor
Schaghticoke	Wampecack Creek corridor
	Mill Hollow Brook corridor downstream of Village
	Deep Kill west of Mineral Springs Road
	Area north of Melrose Valley Falls Road, and area between Main Road and Rte 40
	Area around wellhead in Village of Schaghticoke
Schodack	Wellheads in Castleton-on-Hudson
	Wellheads near Rte 23
	Vlockie Kill corridor and areas between I-90 and Rte 9
	Moordener Kill corridor west of Burden Lake Road
	North Branch Moordener Kill west of I-90 and east of Rte 20
	Areas between Rte 9J and Hudson River along Papscanee Creek
	Along Schodack Creek (Schodack Island State Park)
Stephentown	Wyomanock Creek corridor
	Kinderhook Creek and Black River corridors
	Rensselaer Plateau forest along Black Brook, Huff Brook and Pomeroy Hill
	East Brook and West Brook corridors
Troy	Wynants Kill corridor upstream of Burden Pond

Ecological Resource Priorities

With a view to ensuring persistence in the face of existing threats such as habitat loss, fragmentation, and invasive species, and to ensure resiliency in the face of new environmental stresses from climate change, the Plan seeks to protect representatives of the ecologically significant habitats in the County and to maximize the connectivity of these habitats. This approach will help to maintain biodiversity in the present, and will provide opportunities for adaptations and safe migration of animals and plants to suitable habitats in the future.

At the species scale, the Plan looks at habitats critical to particular plant and animal species of conservation concern whose protection will provide a backstop for other species living in the same habitat. We will also prioritize land protection in areas with concentrations of unusual and rare habitats to ensure that unique biological communities do not disappear. The data suggests there are significant amounts of undeveloped ecologically rich land in Rensselaer County that could be protected.

For the ecological resources component of the Plan, RLT engaged Dr. David Hunt, an eminent ecologist with extensive experience studying the natural areas of Rensselaer County. Dr. Hunt identified, mapped, and ranked the following set of features related to ecological and biodiversity (plants and animals) resources:

- Areas with concentrations of rare plants
- Unusual or restricted animal habitats
- The largest and most undisturbed examples of all ecological habitat types (ecological communities) in Rensselaer County
- Important ecosystems: Groupings of uncommon ecological habitat types; these ecosystems represent the best chance for the long-term conservation of plants and animals native to these habitat types
- Important aquatic networks: Interconnected high-quality rivers, streams, lakes, wetlands, and shoreline areas (riparian); these networks represent the best chance for the long-term conservation of aquatic plants and animals
- Forest interior areas: Largest forested areas far from roads and other development; these areas have the best potential to support native wildlife, especially birds and large animals, most sensitive to human disturbances
- Intact forest and other natural landscapes: Largest (tens of thousands of acres) unfragmented, contiguous blocks of forests, wetlands, and grasslands; these areas represent the best chance for the long-term conservation of native animals that use large areas
- Important forest corridors: Relatively narrow areas of forest and other undeveloped areas that connect large intact forest landscapes; these areas allow wide-ranging movement of large animals.

Appendix C contains a more detailed description of these features.

Dr. Hunt then combined the above features to determine "Priority Conservation Sites for Ecological Resources." These areas, shown in the map below, are the most important sites for the long-term

conservation of the native plants and animals of Rensselaer County. He assigned each of these areas to one of five priority categories.

RLT scored each of Dr. Hunt's five priority categories to identify the following areas with the highest ecological priority in the County:

- Taconics: Northern Taconic Forest - a large intact forest landscape, about 36,000 acres; uncommon habitat types; wildlife habitat, including large animals; uncommon rocky summit and other ecological habitat types.

- Rensselaer Plateau: A large intact forest landscape, about 123,000 acres; large wetlands; wildlife habitat, including large animals (moose, bear, bobcat, coyote, fisher) and birds; uncommon wetlands, lakes, streams, rocky steep slopes, and other ecological habitat types; rare plants. Municipalities with high ecological priority land on the Rensselaer Plateau include: Berlin, Brunswick, Grafton, Hoosick, Nassau, Petersburgh, Pittstown, Poestenkill, Sand Lake, and Stephentown.

- Hoosic River Corridor: Large important aquatic corridors, about 11,000 acres; includes river, shoreline, floodplains, wetlands, and gorges, and uncommon ecological habitat types; wildlife habitat, including nesting bald eagles; rare plants.

- Hudson River Estuary Shore and Tidal Wetlands: Tidal wetland complex, a unique ecosystem for the County, about 2,000 acres; freshwater tidal marshes and swamps, floodplains, Papscanee and Schodack Creeks; habitat for fish and other aquatic animals, and birds; rare plants. Municipalities with high ecological priority land on the Hudson River Shore and tidal wetlands include East Greenbush and Schodack.

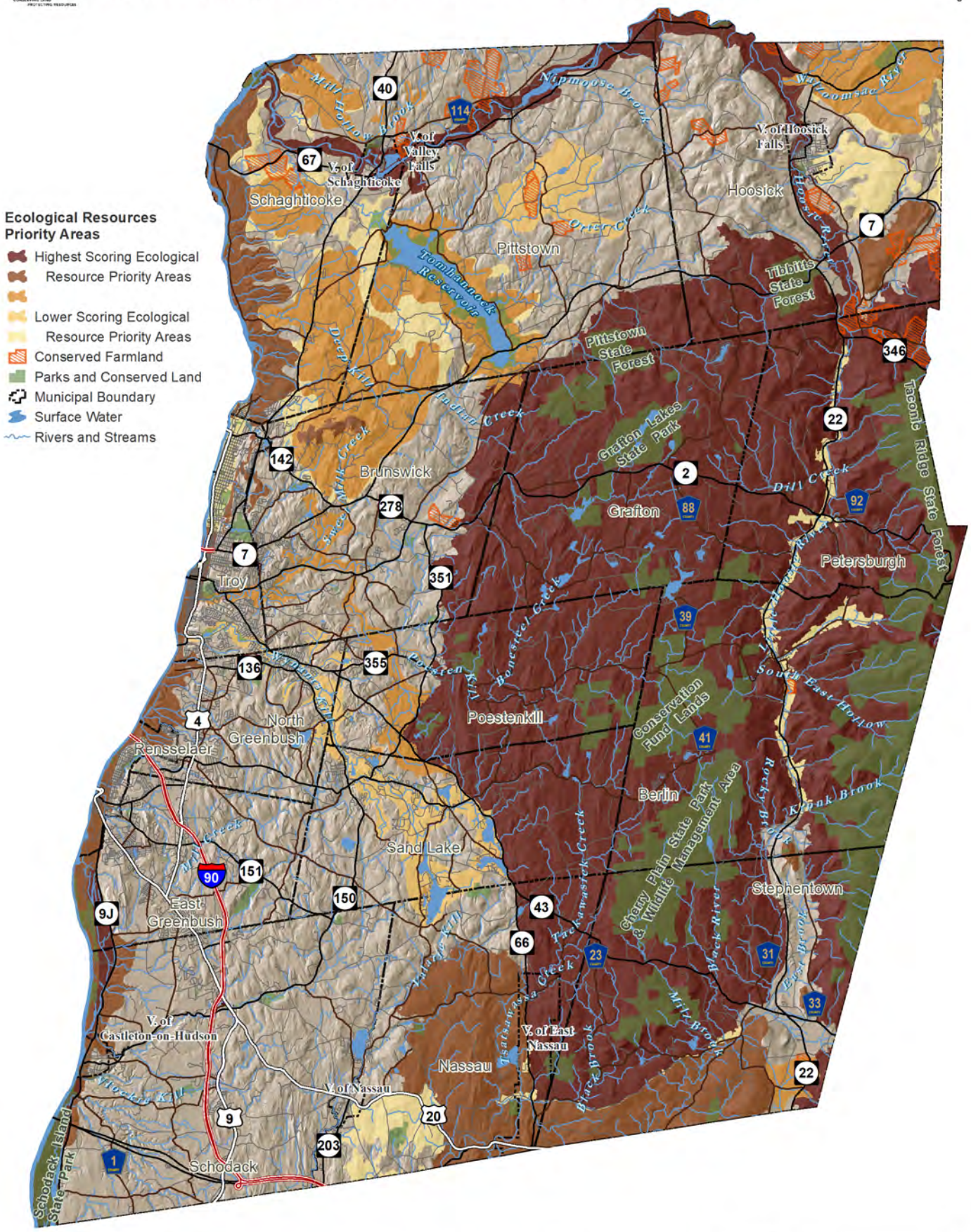
Areas in the next highest category of priority for ecological resources include the hills in Nassau just east of the Rensselaer Plateau; hills in Hoosick just north of the Taconics; the Kinderhook Creek valley in Stephentown and Nassau; hills and bluffs in Troy, Schaghticoke and Brunswick, including Bald Mountain and Oakwood Cemetery; and the Hudson River corridor in all riverfront municipalities.

Conservation Strategy: Protect large and unfragmented sites in order to offer species the greatest opportunity to migrate to more suitable habitat in the face of climate change.

About 172,000 acres or 40% of the land in the County scored at the highest level for ecological resource conservation. Twenty-two percent of these priority ecological resource acres are already protected.

The map on the following page shows ecological resource priorities in Rensselaer County.

Figure 7: County Ecological Resources Conservation Priority Areas



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Climate Change Resiliency for Biodiversity Priorities

In the face of climate change, RLT wants to ensure that its work today will be relevant in 50 to 100 years and beyond. To do so, RLT will protect land that provides plant and animal habitat amidst changing temperatures, rainfall patterns, and major weather events. Because climate resiliency and elevation are linked we will look to protect sites near the plateau escarpment and other places with higher elevation. We will also seek to expand the size of protected sites to provide relief from flooding from strong storms and inundation along the Hudson River from sea level rise.

How is protecting land for climate resiliency different from traditional conservation planning? Climate resilient land conservation planning will include climate change as a threat to the natural resources it otherwise values and will identify a collection of resilient sites and connective corridors that can provide refuge to plants and animals.

After applying a climate lens to land protection priorities, one or more of the following may occur:

- Existing priority sites will be found to be climate resilient;
- Sites not previously identified as priorities will be found to be climate resilient and may become candidates for land protection;
- Existing priority sites are vulnerable to climate change and may require additional monitoring, management, or restoration, or could be abandoned as priorities if they are not important for other reasons, such as conserving scenic views or enhancing recreation.

To identify climate resilient lands for future protection, RLT scored and mapped sites using data from the Nature Conservancy and Scenic Hudson with guidance from the Open Space Institute.

We used Open Space Institute's *Conserving Nature in a Changing Climate*, a guide that shows land trusts how land protection can increase the chances that ecosystems will adapt to climate change. The guide describes three significant drivers of climate resilient land including:

- Geodiversity;
- Local and regional landscape connectivity; and
- Biological condition of the landscape.

Geodiversity is the variety of materials, forms, and processes that shape the Earth. In our area, geologic diversity, along with elevation range, limestone bedrock, and latitudinal range are predictors of biological diversity. This implies that RLT can foster climate resilience by conserving geodiversity across latitudinal ranges and that we can assess its progress by looking at the range of geophysical settings represented in our protected lands.

The slope of the land is important too because it affects temperature and moisture levels, creating microclimates. In addition to slope, factors that create microclimates include the amount of shade, proximity to a body of water such as streams and springs, and slope direction. For example, here in the northern hemisphere, south-facing slopes are usually warmer and drier than north-facing slopes because they receive more heat from the sun.

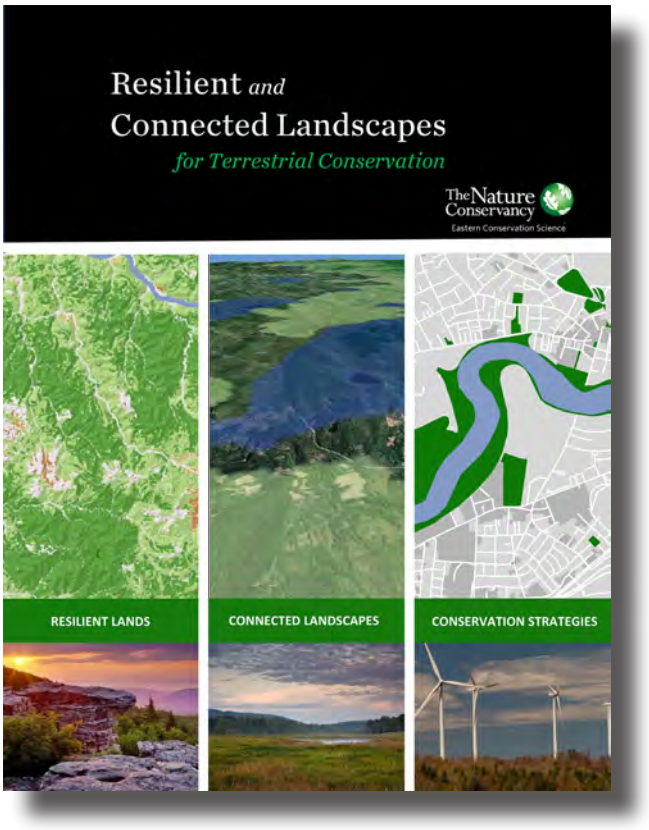
Amidst changing climatic conditions, microclimates create opportunities for species to move to more favorable nearby habitats, such as the cooler north side of a mountain or hill, or to a valley floor, or to a moister, shaded area. Alternatively, dry rock outcroppings and rounded bluffs, tend to be warmer and have less vegetation providing glade and cliff habitat for species adapted to drier, warmer conditions.

Conserving microclimates, and keeping them naturally connected, is critical for the survival of native species in the County. Year-round residents need connectivity for daily activities such as finding food and water, resting places, and breeding sites while migratory species need connectivity to travel to and from the habitats they favor. And as the climate changes, connectivity becomes increasingly important for both local species relocating to nearby microclimates, and more widespread species movement in Rensselaer County. RLT should protect land that enables species to move through the landscape without barriers. These barriers include both natural impediments, such as mountains, rivers, and lakes, and man-made ones like roads, buildings, fences, and hardened shorelines.

The biological condition of an area is a measure of the health of the ecosystem. When an ecosystem is healthy, it is more resilient to changes in climate. For example, when the understory of a woodland area is overtaken by invasive species, native species are often compromised. The biological condition of the land in our County also impacts the condition of our waterways. For example, when invasive species colonize land bordering a stream or river, the overgrowth can shade the waterway, reducing the light reaching the water. This may stress the species of aquatic plants in the stream, which in turn affects the fish species that are present. RLT should gauge the health of a parcel during its evaluation for conserving it for climate resiliency.

RLT also used data from The Nature Conservancy's (TNC) Resilient and Connected Landscapes project, which maps landforms and wildlife corridor connectedness in eastern North America. The purpose of the study was to identify sites where climate resilience is high. Such sites are more likely to sustain native plants, animals, and natural processes into the future, becoming centers of biological diversity. To map locations, TNC-led teams used over 70 GIS data sets to find sites that are buffered from the effects of climate change because the site offers a wide range of micro-climates within a highly connected area. Since it is not within the scope of this report to describe the details of the data and the complex modeling conducted by TNC, we invite you to see their report at:

https://www.conservationgateway.org/ConservationByGeography/NorthAmerica/UnitedStates/edc/reportsdata/terrestrial/resilience/Pages/Downloads.aspx



For this Plan, RLT selected TNC sites that scored in the average to far above average categories.

The third tool RLT used for climate resiliency was Scenic Hudson's Sea Level Affecting Marshes Model (SLAMM), which forecasts where tidal wetlands will migrate with increases in Hudson River water levels. SLAMM compares projections of tidal wetlands in the Hudson River estuary across three sea level rise rate scenarios and three growth models through the 21st century. The data includes both the input files used in the models and the estuary-wide results from the various simulations.

Ultimately, the data from RLT's partners will enable the organization to better ensure that land conservation choices will be sound and lasting for the decades to come. It also provides scientific evidence that supports RLT's work and demonstrates to the community why RLT protects certain lands in the face of climate change.

The map on the following page shows priority areas for climate resiliency land protection in the County. The chart, which follows the map, identifies these areas by municipality. Separate maps and charts for each municipality in turn are found in the Appendices. The county-wide priorities for high climate resiliency for biodiversity include the escarpment of the Rensselaer Plateau; the northwestern part of the County including Schaghticoke and Pittstown, the Route 22 corridor, and the Rte 66 area in Nassau.

About 6,800 acres or 2% of the land in the County scored at the highest level for climate resiliency. Twenty-five percent of these priority climate resiliency acres are already protected.

Figure 8: County Climate Resiliency Resources Conservation Priority Areas

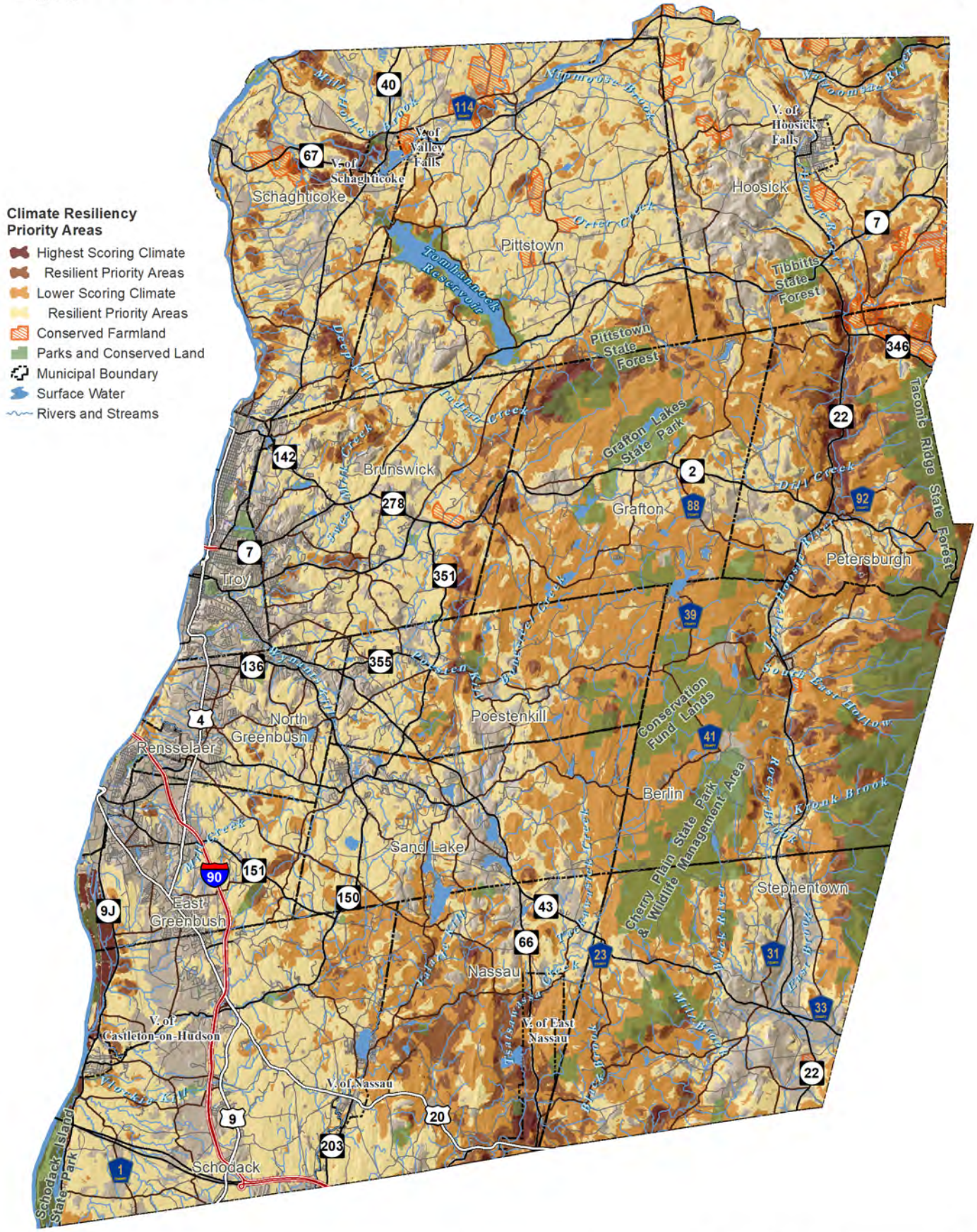


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Table 4. Municipal Climate Resiliency Resources Conservation Priority Areas

Municipality	Climate Resiliency Resources Conservation Priority Areas
Berlin	Taconic Mountains
	Eastern escarpment of the Rensselaer Plateau
	Satterlee Hollow
Brunswick	Western escarpment of the Rensselaer Plateau
	Bald Mountain and vicinity
East Greenbush	Hudson River tidal wetlands and floodplains, and along Papscanee Creek
Grafton	North escarpment of the Rensselaer Plateau
	Bunker Hill and vicinity (near Jay Hakes Road)
	Area along Fire Tower Trail near Grafton Lakes State Park
Hoosick	Bennington Battlefield and vicinity
	Rensselaer Plateau escarpment west of Babcock Lake Road
	Rte 7 corridor through Tibbits State Forest
	Rte 22 corridor south of Rte 7
Nassau	Kinderhook Creek and Tsatsawassa Creek corridors
	Hills east of Mud Pond Road
North Greenbush	Hudson River tidal wetlands and floodplains
Petersburgh	Rte 22 corridor
	Taconic Mountains
	Area along Jones Hollow Road south of Stewart Road
Pittstown	Piser Hill and nearby hills overlooking the Tomhannock Reservoir
	Area around Kautz Hollow Road and Storm Hill Road
	Hills along the Hoosic River near Johnsonville
Poestenkill	Western escarpment of the Rensselaer Plateau, especially along the Poesten Kill to Barberville
Rensselaer	Hudson River tidal shore and floodplain
Sand Lake	Bailey Mountain (highest score in Sand Lake)
	Cranberry Vly (highest score in Sand Lake)
Schaghticoke	Deep Kill corridor
	Hoosic River corridor downstream of Village of Schaghticoke
	Portions of Tomhannock Creek corridor downstream of Rte 40
	Area along Knickerbocker Road
	Mill Hollow Brook corridor downstream of Stillwater Bridge Road
Schodack	Hudson River tidal wetlands and floodplains, and along Papscanee Creek and Schodack Creek
Stephentown	Taconic Mountains
	Southeastern escarpment of the Rensselaer Plateau
	Kinderhook Creek corridor south of Goold Road
Troy	Ravines at Oakwood Cemetery (highest score in Troy)

Agricultural Resource Priorities

There are close to 500 active farms in Rensselaer County growing about 100 different crops. Working farms provide economic, scenic, and ecological benefits to all of us. Active farms contribute to the character of the landscape and our rural communities and maintaining the ability to produce food locally will be important in the long-term effort to reduce carbon emissions by limiting food miles. In 2007, the Rensselaer County Agriculture and Farmland Protection Board, with the assistance of the American Farmland Trust and Cornell University Cooperative Extension prepared a farmland protection plan for the County.

RLT is committed to protecting farmland and the rural character of the agricultural regions of the County. We promote working farms by partnering with the Agricultural Stewardship Association and other organizations to conserve farmland soils and by offering educational outreach to encourage production and consumption of local agricultural products. RLT is grateful to ASA for sharing their agricultural data for RLT's use in identifying land protection priorities. RLT scored and mapped the following factors for the agricultural resources component of the Plan:

- Active farmland (larger areas of farmland score higher since they provide greater production value and are more critical to keep in production);
- Buffers (non-agricultural land in close proximity to farmland score higher because they buffer the farmland from other uses and provides areas for potential expansion);
- Concentrations of farmland (farmland in proximity to other farmland supports one another; larger blocks of adjacent farmland parcels score higher);
- Prime agricultural soils (more fertile soils can provide better conditions for successful agriculture and therefore score higher);
- Agricultural districts (higher scores are given for inclusion in an agricultural district: ag districts provide benefits that help keep farming a viable economic activity, thereby maintaining land in active agricultural use); and
- Agricultural land near watercourses (agricultural land close to streams can support water quality if managed properly and therefore close proximity scores higher).

About 12,000 acres or 3% of the land in the County scored at the highest level for agricultural resources. Twelve percent of these priority agricultural resource acres are already protected.

The highest ranking agricultural areas in Rensselaer County are large active farms that are part of a larger block of adjacent farms, situated on good soils in a designated Agricultural District. Agricultural priority areas include large portions of:

- Town of Hoosick (including along the Hoosic and Walloomsac River corridors),
- Town of Pittstown (especially east of the Tomhannock Reservoir and in the southwestern portion of the town),
- Town of Schaghticoke (especially along the Hoosic River and north to the Washington County line), and
- Town of Brunswick (especially between Tamarac Road and NY Route 7, and in the area of Dater Hill and Garfield Roads).

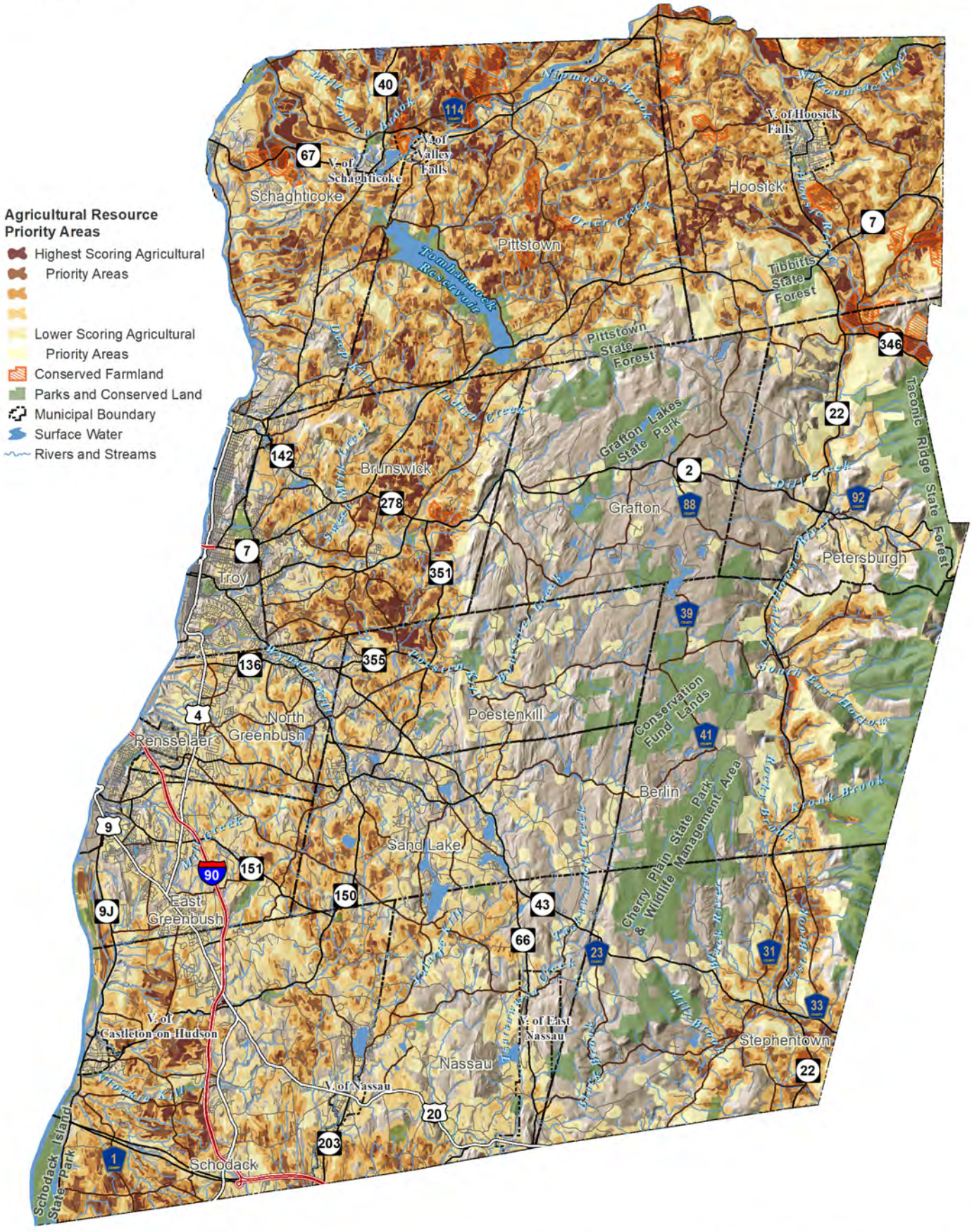
The Town of Schodack has a moderate amount of highest-ranking areas. Other towns in the County have only a relatively few acres of highest-ranking agricultural areas.

The map on the following page shows conservation priority areas for agricultural resources in the County. The chart below identifies these areas by municipality. Separate maps and charts for each municipality in turn are found in the Appendices.

Table 5. Municipal Agricultural Resources Conservation Priority Areas

Municipality	Agricultural Resource Conservation Priority Areas
Berlin	Little Hoosic River/Rte 22 corridor between Southeast Hollow and Green Brook Hollow
	Green Hollow
Brunswick	Between Tamarac Road and NY Route 7 from Lockrow Road to west of Rte 278 (Brick Church Road)
	Area around Dater Hill and Garfield Roads
	Area along Deep Kill Road near Pittstown town line (connects with SW Pittstown ag land)
	West of Tamarac Road and north of John Snyder Road
East Greenbush	Areas between Rte 9J and Hudson River along Papscanee Creek (potential climate change inundation)
Grafton	None
Hoosick	Hoosic River corridor
	Waloomsac River corridor and vicinity of Bennington Battlefield
	Near Pine Valley, Breese Hollow, Buskirk-West Hoosic, Wilson Hill, Tate, and Burgess Roads
Nassau	Area east of Malden Bridge Road, north of Jefferson Hill Road (highest priority in Nassau)
North Greenbush	Area south of Rte 43 at Sand Lake town line (highest score in North Greenbush)
Petersburgh	Hoosic River corridor
Pittstown	East of the Tomhannock Reservoir
	Southwestern portion of town
	Hoosic River corridor near Valley Falls
Poestenkill	Area between Garfield Road and Rte 351
Rensselaer	None
Sand Lake	Area south of Rte 43 at North Greenbush town line (highest score in Sand Lake)
Schaghticoke	Hoosic River corridor and north
	Area around Pine Woods Road
Schodack	East of I-90 around Van Hosen, Clove, Brookview Station, and Brookview Roads
	Area around Schodack Landing Road and Muitzeskill Road
	Area between Rte 9J and Hudson River along Papscanee Creek north of Staats Island Road
Stephentown	Kinderhook Creek corridor upstream of Black River
	Area between East Road and Rte 22 south of Giles Road
Troy	None

Figure 9: County Agricultural Resources Conservation Priority Areas



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0 1.75 3.5 7 Miles

Scenic Resource Priorities

RLT is committed to connecting people to the land through the protection of Rensselaer County's landscapes and by increasing recreational opportunities through trail expansion and stewardship in our preserves. The scenic beauty of the County is central to the region's cultural history and sense of place. RLT prioritizes projects that protect or enhance the biodiversity and other conservation values of scenic lands and provide opportunities to engage the public, especially children, in outdoor activities. High priority scenic and recreational lands protect existing scenic amenities visible to the public from scenic roadways, hiking trails, and other vantage points.

For this Plan, RLT prepared a scenic resources inventory based on input from the community about distinctive viewsheds and scenic roads in the County. The criteria used in the analysis included:

- Views of landscape vistas were emphasized; historical or architectural resources were excluded.
- Only viewsheds with an aerial extent of at least one hundred acres were considered.
- Scenic viewpoints along roads and on existing protected land accessible to the public, including hiking trails and parks were identified. Individual historic buildings, bridges, small creeks, views from private properties, etc., were excluded, despite the fact that they possess "scenic" qualities individually. Although we recognize the scenic importance of these smaller features and intimate landscapes, they were outside the scope of this analysis.

The survey results were compiled in a geographic information system to create a data set of viewsheds visible from each of 45 scenic viewpoints or roads identified in the surveys. These individual viewsheds were then overlaid on a map and classified by their degree of overlap. The resulting map prioritizes scenic areas of the region under the assumption that the sites visible from the greatest number of viewpoints are the most scenic.

Public recreation areas are important resources for local communities in Rensselaer County and for visitors drawn by the beauty of the region. Providing access to inspiring places is one of many ways to connect people with the land that both enriches people's lives and helps to build a conservation ethic in the community.

Multi-use trails for walking and bicycling help promote an outdoor lifestyle, healthy exercise, and nature appreciation. The network of trails on protected lands in the County are a major attraction and numerous nature preserves offer the public opportunities for walking, nature observation, and photography. In addition to existing multi-use trail sites, old farm and forestry roads in the County present opportunities to create and expand trail systems.

Increasing access to the Hudson River and other rivers and streams is important for boaters, canoeists, and kayakers. RLT recently completed a study of Hudson River public access opportunities and will use its result for planning conservation projects along the Rensselaer County shoreline.

We scored and mapped the following factors for the scenic resources component of the Plan:

- Viewsheds of summits/high points with expansive views* (places that can be seen from multiple locations receive a higher score);
- Viewsheds of scenic roads and corridors* (same as above);
- Along scenic roads and along trails* (places that are closer to scenic roads and trails receive a higher score because the immediate vicinity along these corridors contributes to the overall user experience)
- Parks and protected areas buffer (places that are closer to parks and preserves score higher)
- Waterfalls (same as above)
- Community Values Meeting areas identified as scenic value* (areas identified at community values meetings but not incorporated elsewhere above were given points)

** Features include those identified at Community Values Meetings.*

We then measured the viewsheds of the places identified; approximately 20 roads like Route 22 and the Taconic Crest Trail, as well as single summits. Agricultural lands are considered scenic. For purposes of implementing the Plan, RLT recognizes there are other scenic areas beyond those identified by this relatively small sample set of about 130 respondents.

About 6,800 acres or 2% of the land in the County scored at the highest level for scenic resources. Sixty-nine percent of these priority scenic resource acres are already protected.

The map on the following page shows conservation priority areas for scenic resources in the County. The chart, which follows the map, identifies these areas by municipality. Separate maps and charts for each municipality in turn are found in the Appendices.

Priority areas for scenic land protection in the County include Bald Mountain in Brunswick, the Hudson River shoreline, and the Rensselaer Plateau, among many others.

Figure 10: County Scenic Resources Conservation Priority Areas Map

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Table 6. Municipal Scenic Resources Conservation Priority Areas

Municipality	Scenic Resource Conservation Priority Areas
Berlin	Rensselaer Plateau west of Dutch Church Road
	Eastern escarpment of the Rensselaer Plateau
	Capital District Wildlife Management Area
	Dyken Pond Center
	Taconic Mountains
Brunswick	Rte 351 and Rte 2 and views of the Rensselaer Plateau
	Bald Mountain (visible from many locations)
	Hills along McChesney Avenue Extension
	Hills along Colehamer Road
	Eagle Mills around the Falls
East Greenbush	East Greenbush Town Park and vicinity
	Ridge Road
Grafton	Grafton Lakes State Park
	Pittstown State Forest
	Northwestern escarpment of the Rensselaer Plateau
	Dyken Pond Center
Hoosick	Bennington Battlefield
	Tibbitts State Forest
	Hills along Vermont border in southeastern corner of town
	Hoosic River Greenway in Village of Hoosic Falls
Nassau	Hills east of Mashodack Road
North Greenbush	Rensselaer Tech Park and vicinity
	Area between Hidley Road and Edwards Road
Petersburgh	Taconic Mountains
	Skipparee Mountain
	Routes 22 and 2
Pittstown	Tomhannock Reservoir
	Pittstown State Forest
	Gifford Road and Johnsonville Road
Poestenkill	Rte 351 north of town center
	Western escarpment of the Rensselaer Plateau east of Reichards Farm Road
	Barberville Falls
	Rensselaer Plateau around Perigo Hill and north and northeast
	Dyken Pond Center
Rensselaer	Hudson River shoreline
Sand Lake	Rensselaer Plateau around Cranberry Vly Creek
	Hill north of Taborton

Table 6 (cont). Municipal Scenic Resources Conservation Priority Areas

Municipality	Scenic Resource Conservation Priority Areas
Schaghticoke	Hudson River shoreline and bluffs
	Rte 40
	Old rail corridor northwest of Madigan Road
	Hills west of Wampecack Creek
Schodack	Schodack Town Park, and vicinity along Moordener Kill
	Schodack Island State Park
	Reickert Hill
	Area around Schodack Landing Road and Muitzeskill Road
Stephentown	Capital District Wildlife Management Area
	Rensselaer Plateau, particularly Turner Mountain
	South Road
	Taconic Mountains
Troy	Wynants Kill corridor
	Oakwood Cemetery
	Uncle Sam Bikeway
	Prospect Park Overlook

Composite Resource Priorities

The highest scoring areas for each of the five individual resource targets -- water, ecological, climate resiliency, agricultural, and scenic – are priority conservation areas for RLT. Also of interest are Composite Priority Areas, areas which scored highest when scores for all resource targets are added together. The areas with most overlaps (darker areas on the map below) yield the greatest opportunities for land conservation and potentially for fundraising since multiple aims are met. Composite Priority Areas include:

- Hoosic River corridor
- Hudson River shoreline, tidal wetlands, and corridor
- Tomhannock Reservoir and watershed
- Taconic Mountains
- Rensselaer Plateau
- Bennington Battlefield vicinity and Walloomsac River corridor
- Poesten Kill corridor

About 33,700 acres or 8% of the land in the County scored at the highest level for the composite feature. These are among the best candidates for conservation in Rensselaer County. Forty percent of these priority acres are already protected.

The map on the following page shows the composite priority areas in the County. The chart, which follows the map, identifies these areas by municipality. Separate maps and charts for each municipality in turn are found in the Appendices.

RENSSELAERS LAND TRUST

Figure 11: Composite Conservation Priority Areas

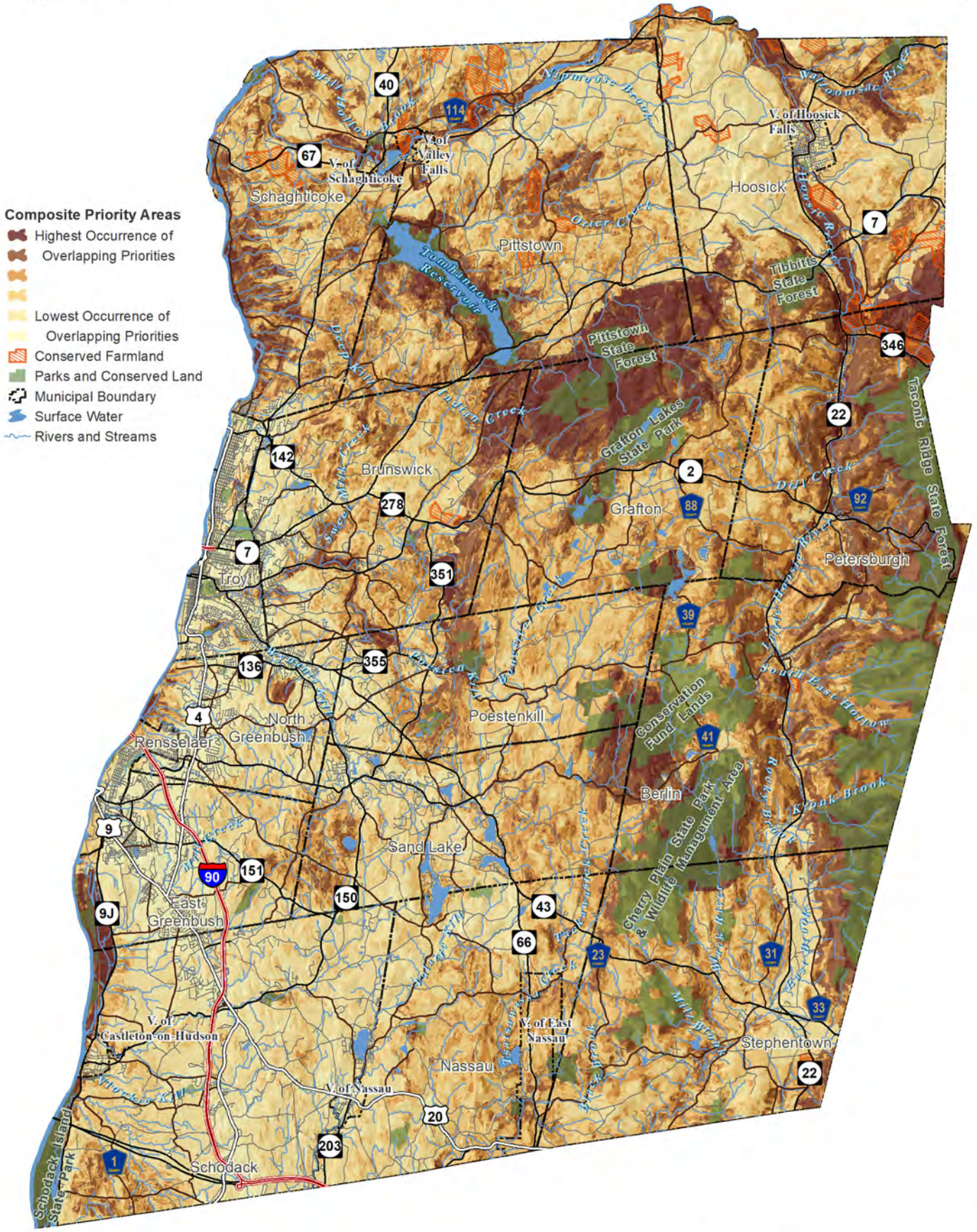

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Table 7. Municipal Composite Conservation Priority Areas

Municipality	Composite Conservation Priority Areas
Berlin	Taconic Mountains
	Rensselaer Plateau around Capital District WMA and north of Round Pond/west of Dutch Church Road, and along eastern escarpment
Brunswick	Western escarpment of the Rensselaer Plateau
	Poesten Kill and Sweet Milk Creek corridors
	Bald Mountain and surrounding area, to Deep Kill Road and south of Cooksboro Road
East Greenbush	Hudson River tidal flats and floodplains, and along Papscanee Creek
	North branch of Moordener Kill corridor
Grafton	Rensselaer Plateau from Grafton Lakes State Park to north, and escarpment
	Dyken Pond Center and vicinity
	Bunker Hill and vicinity (near Jay Hakes Road)
Hoosick	Hoosic River corridor
	Bennington Battlefield vicinity and Waloomsac River corridor
	Rensselaer Plateau and escarpment
	Hills along Vermont border in southeastern corner of town
	Indian Hill and vicinity
Nassau	Rensselaer Plateau, especially west escarpment
	Kinderhook Creek and Tsatsawassa Creek corridors
	Pine Swamp
	Area around Mud Pond Road
North Greenbush	Hudson River shore, floodplains, and associated ravines (including Rensselaer Tech Park)
	Area between Hidley Road and Edwards Road
Petersburgh	Taconic Mountains
	Hoosic River corridor
	Rensselaer Plateau and escarpment
	Rte 22 corridor
Pittstown	Tomhannock Reservoir, shores, and watershed
	Deep Kill corridor in southwestern portion of town
	Hoosic River corridor
	Rensselaer Plateau and its escarpment
Poestenkill	Newfoundland Creek corridor, and area north of Rte 355 and west of Garfield Road
	Western escarpment of the Rensselaer Plateau, from Brunswick town line to Snake Hill, including Barberville Falls
	Rensselaer Plateau in area around Perigo Hill; and around Dyken Pond Center

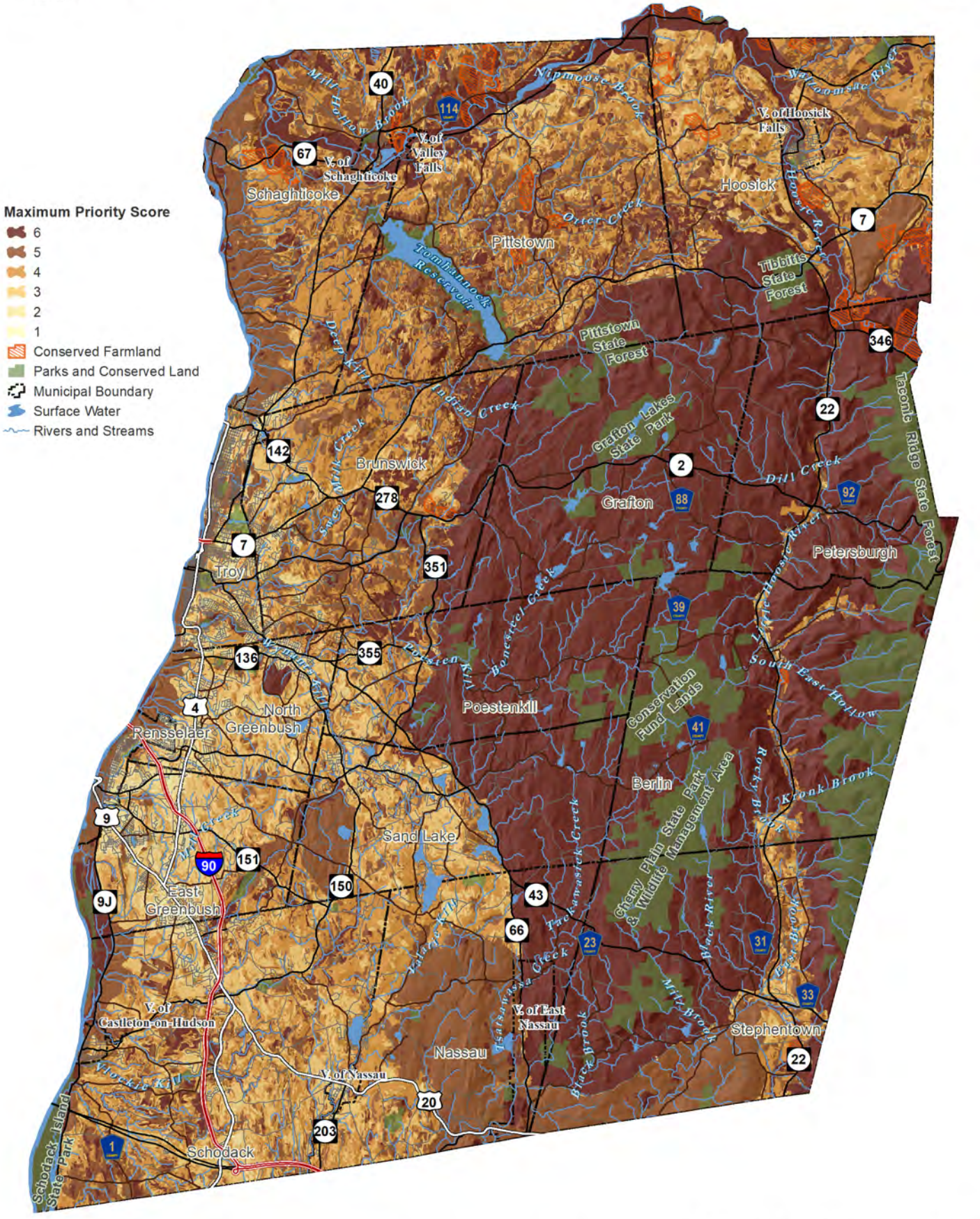
Table 7 (cont). Municipal Composite Conservation Priority Areas

Municipality	Composite Conservation Priority Areas
Rensselaer	Hudson River shoreline
Sand Lake	Area from Rte 150 to East Greenbush town line and from Rte 43 south to Schodack town line, including North Branch of Moordener Kill corridor
	Rensselaer Plateau, especially area around Cranberry Vly Creek; and hill southwest of Taborton, hill north of Taborton, and The Gipfel; and Bailey Mountain
Schaghticoke	Hoosic River corridor
	Hudson River shore, bluffs, and ravines
	Deep Kill corridor
	Mill Hollow Brook corridor
	Old rail corridor from Rte 40 to Hoosic River
Schodack	Hudson River tidal wetlands and floodplains, and along Papscanee Creek and Schodack Creek
	Schodack Town Park, and along Moordener Kill
	Area around Schodack Landing Road and Muitzeskill Road
Stephentown	Taconic Mountains
	Rensselaer Plateau around Capital District Wildlife Management Area, southern escarpment, Johnson Hill, Roaring Brook
	Kinderhook Creek and Black Brook corridors, and hills south of Rensselaer Plateau
	Wyomanock Creek corridor
Troy	Wynants Kill corridor
	Poesten Kill corridor
	Oakwood Cemetery

Maximum Score for Priority Areas

While the Composite Priority Areas reflect relatively high scores in more than one individual resource target, areas that scored highest in only one or two individual resource targets are also of conservation priority. To represent these areas, we mapped the maximum score in any one of the individual resource targets; the darkest areas on this map on the following page scored the highest possible in at least one resource target. Details of these areas are discussed in the section for each individual resource target.

Figure 12: County Maximum Score Conservation Priority Areas



Map prepared by Upstate GIS - September 2018

For Conceptal Planning Purposes Only

6. Land Conservation Tools

RLT works closely with landowners who care deeply for their land and are committed to protecting it for the future. We also offer education to landowners and municipal land use officials about the importance of conservation.

A landowner can protect their property with RLT in two ways: RLT can acquire the development rights of the land, using a conservation easement or RLT can acquire the land through a transfer of ownership from the landowner.

Conservation Easement

The most common method of land preservation practiced by RLT is a conservation easement. A conservation easement is a custom, voluntary legal agreement between a landowner and RLT that permanently protects a parcel of land. With a conservation easement, the landowner retains most of their existing property rights while choosing to restrict future activities, especially the development of the parcel, to protect the conservation values of the land.

Conservation easements are conveyed by a written deed, must have a conservation purpose, and are maintained forever. A conservation easement represents a partnership between the owner and RLT and may only be extinguished by a court of law.

Property that is under a conservation easement requires monitoring by RLT to ensure that the terms of the agreement continue to be met by the landowner. Easement property remains on the local tax rolls, can be sold, and does not require public access. The easement's provisions, including those prohibiting development, stay with the land, and all future owners of the property are bound by them.

Easements can by donated by the landowner or purchased by RLT. RLT works closely with the landowner to prepare an easement that meets the landowner's needs and interests, while also fulfilling RLT's conservation objectives. For example, the landowner might choose to retain the right to limited subdivision or to manage forests, graze animals, grow crops, or permit public access to the property.

Federal, state, and in some cases local governments provide favorable tax treatment for easements that are donated to RLT or are sold for less than fair market value.

As of June 2018, landowners have completed 15 conservation easements with RLT totaling 855 acres.

Transfer of Ownership to RLT

In certain cases, and often with partner organizations and agencies, RLT acquires land that has conservation value or is threatened by inappropriate development.

RLT's decision to acquire a property involves determining the conservation values of the land and

evaluating the organization's capacity to manage the property, including paying property taxes and other holding costs. Collaboration with other agencies, organizations, and individuals can expand opportunities for land acquisition.

A transfer of ownership can take place in any of the following ways:

- Donation, including a gift or bequest. A land donation is a form of transfer of ownership whereby RLT receives a gift of land and becomes the immediate owner. RLT can also accept a deferred land donation, which can be made in any of four ways: a bequest made in a will, a reserved life estate or remainder interest donation, a charitable gift annuity, or a charitable remainder unitrust. RLT is a tax-exempt organization and therefore donations and bequests are tax deductible as allowed by law.
- Sold to RLT at less than market value, also called a "bargain sale." In this case, the difference between the price sold to RLT and an independently determined appraisal value of the property may be tax deductible.
- Sold to RLT at market value. No tax deduction is available in this case.

Land acquired by RLT is usually held permanently. Other options, pursuant to the wishes of the landowner, include transfer to another qualified conservation organization, to a government entity, or to an individual, or the land can be used as a trade land wherein RLT sells the property, and the sales proceeds are used to fund the protection of a property with greater conservation value or public benefit.

RLT can take full title to the land, or it can acquire land with "less than full title" where the owner retains certain specified legal rights to the property even as property ownership is transferred to RLT. Examples of retained rights include rights to water or timber, access to the property, life estates, and right of reversion (i.e., return of title to the owner if terms of donation are not met). Land donors may also set deed restrictions on how the land is used by RLT in the future.

RLT has acquired nine parcels totaling 452 acres as of June 2018. The lands that RLT acquires are often used for nature preserves. RLT owns and operates five nature preserves that are open to the public for passive recreation, such as hiking and wildlife observation. Four of RLT's public preserves offer fishing and one has a boat launch.

Conservation easements and transfer of ownership will continue to be primary tools for land protection, both through independent action by RLT and through collaborations with government agencies and non-profit organizations.

Additional tools for implementing the goals of this Plan include working with municipalities to develop effective land use policy, and outreach to landowners and the general public on the importance of land conservation and stewardship of natural resources.

Landowner Education

Educating landowners about protecting their land with RLT or its partners can build support for conservation in the County. Education can occur through community events, forest landowner workshops, and at stewardship workdays on RLT properties, among many others. Informed

landowners are also more likely to consider protecting their land and education for local officials can influence municipal land use decision-making in ways that promote conservation.

Local Land Use Legislation

Municipalities in Rensselaer County can legislate environmentally conscious land use with tools such as zoning and subdivision statutes, building codes, and comprehensive and master plans. These types of legislation provide standards for assessing development projects and their impact on the natural resources described in this Plan. RLT can support municipal leaders in designing and updating local laws and comprehensive plan updates to better protect the key natural resources in their communities. The table below presents a summary of the land use regulation tools in use by each municipality.[11] Most of the comprehensive/master plans were adopted many years ago, hence RLT's Plan could be of value for local communities.

Table 8. Municipal Land Use Regulation Tools

Municipality	Building Code	Zoning Statutes	Subdivision Statutes	Comprehensive/ Master Plan Date
Berlin, Town of	√	√	√	2011
Brunswick, Town of	√	√	√	2001
Castleton-on-Hudson, Village of	√	√	√	
East Greenbush, Town of	√	√	√	2006
East Nassau, Village of	√	√	√	2010
Grafton, Town of	√	√	√	1990
Hoosick, Town of	√	√	√	2004
Hoosick Falls, Village of	√	√	√	
Nassau, Town of	√	√	√	2011
Nassau, Village of	√	√	√	1999
North Greenbush, Town of	√	√	√	2009
Petersburgh, Town of	√	√	√	
Pittstown, Town of	√	√	√	2005
Poestenkill, Town of	√	√	√	2006
Rensselaer, City of	√	√	√	2006
Sand Lake, Town of	√	√	√	2009
Schaghticoke, Town of	√	√	√	2005
Schaghticoke, Village of	√			
Schodack, Town of	√	√	√	2011
Stephentown, Town of	√	√	√	2018 (draft)
Troy, City of	√	√	√	2018 (draft)
Valley Falls, Village of	√			

11 Rensselaer County Economic Development & Planning for the Rensselaer County Agricultural and Farmland Protection Board, *Keep It Growing! An Agricultural And Farmland Protection Plan For Rensselaer County*, 2015.

Municipalities can also guide development to minimize impacts through the project review process. They can adopt procedures such as pre-application meetings, preliminary resource assessments, and habitat assessment guidelines that can raise awareness about natural resources early in the process and result in more informed and environmentally sensitive project design.

Focus on … Kinderhook Creek Preserve

The Kinderhook Creek Preserve is a 85-acre "working forest" created by donations of four properties from David and Lucy Gaskell, Bob and Jennifer Newton, the late Kenneth York, and the Edward W. Golden Foundation. The preserve has one-half mile of shoreline along the Kinderhook and five miles of trails open to the public. The trails seem to extend everywhere—along stone walls and ridges; through tall, majestic pines; down hemlock-covered slopes to the Kinderhook Creek and up to the view on the oak-covered ridge; and then back to meet other trails. Wildlife is abundant, particularly white-tailed deer. The trails, some steep but others gentle, make for exciting and interesting hiking, snowshoeing, and cross-country skiing. Other activities include geocaching, horseback riding, wildflower walks, birding, mushroom walks, rock exploring, and botanical studies.

The Preserve contains a wide variety of ecosystems including cliffs, hemlock-hardwood swamp, riverside sand and gravel bars, and six forest types, providing habitat for wildlife and rare plants. The Preserve provides easy access to the Kinderhook Creek for fishing, exploring in the shallows, and picnicking along the lovely shores—highlights of a day's adventure in these woods.

Conservation of the property is built around the concept of a "working forest" whose objectives include ecological and environmental protection, outdoor recreation, timber production using sustainable forest management practices, wildlife habitat enhancement, scenic enjoyment, and educational and nature studies.

"The Kinderhook Creek Nature Preserve is a wonderful addition to the community, incorporating a system of marked trails through picturesque wooded areas and highlighted by a half mile of shoreline along the Kinderhook Creek, a renowned trout stream. This is a meaningful day for the Nassau community and its local residents whose significant donations of land will be appreciated by future generations." - Governor Cuomo, Oct. 2015

7. Conservation Partners

RLT Board and staff will be responsible for fostering existing relationships and building connections with new partners active in conservation. Approaches to building connections include attending events or meetings and developing social or professional relationship with board members, staff, and volunteers. Potential partners include state, county, and municipal government agencies, national, regional and local conservation organizations, neighboring land trusts, landowners, and local businesses, including:

State and County Agencies

New York State Department of Environmental Conservation (NYSDEC)

In 2016 NYSDEC produced its latest Open Space Plan, which identifies 140 regional conservation projects with "unique and irreplaceable" ecological, wildlife, recreational, scenic, and historical values. Projects included on this list are eligible for funding from the state's Environmental Protection Fund, and other government funding sources. These are long-term projects and typically require a combination of government, private, and non-profit land acquisition, government regulation, incentives to business, and compatible economic development.

There are two Open Space Plan projects located in Rensselaer County. One involves establishing an open space corridor and trail system across the Rensselaer Plateau connecting Dyken Pond Center, Grafton Lakes State Park, Pittstown State Forest, the Capital District Wildlife Management Area, Dickinson Hill Fire Tower, and other recreation and environmental education facilities. Creating the corridor and trail system will involve acquiring land and conservation easements on tens of thousands of acres of forestland on the plateau, using Forest Legacy and other funding programs.

The other project is called the Hoosic River Corridor and its goal is to create a greenway across northern Rensselaer and southern Washington counties, linking the Rensselaer Plateau with the Green Mountains in Vermont and the Taconic Mountains along the Massachusetts-New York state line. The corridor includes highly productive farmland and timberland, as well as important ecological and scenic resources.

Both projects will require significant land acquisitions and conservation education and will involve RLT partnering with state and local government and land conservation organizations such as the Rensselaer Plateau Alliance and the Agricultural Stewardship Association, among others.

Besides the Open Space Plan, RLT works with NYSDEC through the Hudson River Estuary Program. Created in 1987 the program focuses on the tidal Hudson and adjacent watershed from the federal dam at Troy to New York harbor. The purpose of the program is to help people enjoy, protect, and revitalize the estuary. The program provides grant funding for planning, access, and education projects; conducts research, education, and training; performs conservation, protection restoration projects; and offers community planning assistance.

The Hudson River Estuary Wildlife and Habitat Conservation Framework (2006) identifies the Upper Hudson River Estuary, Rensselaer Plateau, and Taconic Ridge as Significant Biodiversity Areas.

RLT works closely with the estuary grant program. Over the last several years, RLT has received grants for projects on stream sampling and for preparing this land conservation plan. We expect to collaborate on future projects as this Plan is implemented.

Hudson River Valley Greenway

Formed in 1991, the Hudson River Valley Greenway created a process for voluntary regional cooperation among communities in 14 counties that border the Hudson River, including Rensselaer County. The purpose of the Greenway is to develop a regional strategy for preserving scenic, natural, historic, cultural and recreational resources while encouraging compatible economic development and maintaining home rule for land use decision-making in river communities.

Today, the Greenway contains a system of parks, trails, and canoe and kayak routes along the Hudson River. The Greenway is developing the new Empire State Trail, which will run from New York City to the Canadian border and from Albany to Buffalo. As was mentioned above, RLT is collaborating with the Greenway on a local section of the Empire State Trail called the Albany-Hudson Electric Trail that will run through Rensselaer County from the county line in Nassau to the City of Rensselaer. The Greenway also funded the scenic resources portion of this Plan and could play a role in the implementation of RLT's River Access Plan, which was completed in 2018.

Rensselaer County

The Rensselaer County Master Plan, written in 1989, encourages communities to provide recreational opportunities and open space to their residents while ensuring that new development is compatible with these uses. The Master Plan encourages municipalities to get involved in the Hudson River Valley Greenway program and advocates that recreational facilities be developed at schools, fire stations, utility right-of-ways and other existing facilities and that they be easily accessible to all community members. The plan also encourages municipalities to use land with development restraints for open space and recreation. New open space lands can be set aside in both urban and rural areas including the eastern shoreline of the Hudson River, the Rensselaer Plateau, and the Taconic Mountain region.

Besides the Master Plan, RLT will be working with the County Health Department on protecting water quality as part of a three-year project funded by NYSDEC Division of Water to acquire land along water bodies in the Tomhannock watershed beginning in 2018. The Health Department also provided funding for a stream water sampling study that RLT completed in 2018.

Municipalities

Cities, towns, and villages are key partners for RLT. They can encourage informed development through supportive land use ordinances, by developing open space plans that support conservation, through project environmental reviews, the creation of natural resource inventories, and through

ownership and management of protected lands.

They can also assist in financing land conservation. Among the many tools they can deploy are local appropriations for buying undeveloped land, bond issuances, and recreation permits and fees. Local governments can also shape positive perspectives on the value of land conservation. RLT will continue to build relationships with planners, environmental commissions, and comprehensive and open space plan committees, among others.

Information on natural resources and areas of mutual interest can be obtained by conferring with municipal officials and by reviewing the comprehensive plans of those towns. For example, RLT reviewed the draft comprehensive plan of the Town of Stephentown and found it contained several conservation-related recommendations, including:

- gaining a better understanding of local aquifer locations, depths, yields, varieties and issues. This information could then be used to better inform land use decisions: and
- educating citizens and businesses on practices to ensure water quality.

For example, RLT could support the Town of Stephentown in addressing these recommendations.

Conservation Organizations

The Nature Conservancy

The Nature Conservancy (TNC) is an international land conservation organization that has protected extensive amounts of land in New York, including Barberville Falls and the Stewart Preserve in Rensselaer County. The organization engages in land protection on both landscape and local scales, including conservation easements with private landowners, through partnerships with other government agencies like NYSDEC and with other conservation organizations, especially land trusts. TNC's conservation activities include protecting forests, aquatic species, and wetlands, among others. TNC could be a partner for RLT in protecting larger parcels or sections of the Rensselaer County landscape. RLT utilized TNC data for the climate resiliency analysis in this Plan.

The Conservation Fund

In 2017, the Conservation Fund, an US-based non-profit conservation organization, purchased more than 23,000 acres of working forest land in New York, Massachusetts, and Vermont for permanent protection. More than 16,000 acres of those acres are in Rensselaer and Washington Counties in New York. The land is known as Cowee Forest and was identified as key conservation land in several sections of this Plan. The Conservation Fund will eventually convey the land to the NYS Department of Environmental Conservation. During its temporary ownership, The Conservation Fund will pay property taxes and will sustainably manage Cowee Forest for timber resources, habitat protection, and public recreation. Funding for The Conservation Fund's purchase included a federal Forest Legacy Grant (see below under Rensselaer Plateau Alliance).

Open Space Institute

The Open Space Institute (OSI) conserves land from the southeastern U.S. to southeastern Canada. The organization typically protects property at the landscape scale through direct acquisition and conservation easements and partners with state government to expand parklands. OSI has conserved agricultural land in Hudson Valley communities and has been a leader in assisting local land trusts with conservation projects. The organization also works to raise awareness about the impacts of climate change. RLT worked with OSI to utilize climate resiliency data for lands in the northeastern U.S.

Scenic Hudson

Scenic Hudson is dedicated to restoring the Hudson River and protecting urban and rural near its shores. They partner with government at all levels and other conservation groups to design and implement land preservation projects. They are also a leader in public advocacy on land conservation, cleanup of the Hudson River and waterfront preservation, and among other concerns. Scenic Hudson could be a partner with RLT on conservation projects along the Hudson River.

Neighboring Land Trusts

Rensselaer County is served by several land trusts that are conservation partners for RLT. The implementation of this Plan will be shared with various other conservation allies, but especially neighboring land trusts so that collaborative strategies can be developed that will help to achieve shared goals. Other land trusts that operate in Rensselaer County include the Agricultural Stewardship Association, the Rensselaer Plateau Alliance, and the Schodack Area Land Trust. RLT also participates in the Berkshire Taconic Regional Conservation Partnership.

Agricultural Stewardship Association

The Agricultural Stewardship Association (ASA) is a land trust that conserves farmland in Rensselaer and Washington counties. Rensselaer County provides funding to ASA to administer the county's Purchase of Development Rights program.

ASA has conserved approximately 4,000 acres of farmland in the County and their strategic plan identifies an additional 8,400 acres of farmland that could be protected in Rensselaer and Washington Counties by the end of 2020.

ASA ranked agricultural lands in their service area and identified a set of Priority Areas and a set of Special Areas to conserve. Priority Areas contain the high quality farmland and productive soils needed to support agricultural businesses over the long-term. In addition, Priority Areas include current concentrations of conserved farmland and anchor farms. Priority Areas located in Rensselaer County include:

- Hudson River Corridor (along Route 40);
- Hoosic River Watershed;

- Brunswick (along Route 7);
- Schodack; and
- Stephentown.

Special Areas contain productive farms and woodlands, areas of scenic, environmental or historic significance and farms that exemplify community character. Special Areas are of secondary importance to Priority Areas. Special Areas located in Rensselaer County include the Route 22 Corridor and the West Hoosick Hills.

ASA protects the agricultural land in Rensselaer County using the criteria described just above and RLT will support their efforts wherever it can. For this Plan, RLT will assess opportunities to protect agricultural land that may not meet ASA's criteria but could have other conservation values.

Rensselaer Plateau Alliance

The Rensselaer Plateau Alliance (RPA) is a non-profit land trust that operates in Rensselaer County with a focus on the Rensselaer Plateau. The Rensselaer Plateau is an 118,000 acre upland region in the eastern part of the County that is known for its large continuous forest blocks and for its biodiversity, especially large mammals including moose, black bear, bobcat, and fisher. The U.S. Forest Service, NYSDEC, and the Audubon Society have all recognized the Rensselaer Plateau for its important conservation values.

RPA has directly conserved approximately 2,000 acres on the Plateau, and assisted The Conservation Fund in purchasing another nearly 10,000 acres. RPA's strategic plan identifies an additional 6,000 acres of forest that could be protected on the Plateau in the next several years. RPA prepared a Regional Conservation Plan in 2013 which stated the following goals:

- Conserve the Rensselaer Plateau's important ecological resources;
- Support the expansion of local economic activity that is compatible with the environmental health of the Rensselaer Plateau; and
- Raise awareness about the Rensselaer Plateau throughout the region.

The Plan includes an ecological assessment of the natural resources on the plateau as well an economic study. In fact, data collected for the RPA plan was used by RLT for the ecological analysis of the plateau section of the County.

Both RLT and ASA (described above) collaborate with RPA on land protection on the Plateau because RPA does not work with conservation easements, nor does it protect agricultural land. This three-party collaboration will be expanded beginning in 2018 when the three organizations start work on a joint water quality improvement program grant from NYSDEC that is expected to protect hundreds of acres of land in the Tomhannock watershed. The Tomhannock watershed is the 65 square mile area surrounding the Tomhannock Reservoir that drains into the reservoir, supplying drinking water to the majority of Rensselaer County's population. Increased development leads to more chemical input and run-off of sediments and pollutants, which threaten water quality and increase the costs of making water suitable for drinking.

RLT and ASA have been collaborating with RPA to protect working forests on the Plateau through the Forest Legacy program, a conservation program administered by the U.S. Forest Service in partnership with NYSDEC to encourage the protection of privately owned forest lands through conservation easements or land purchases. Other RLT-RPA collaboration is ongoing, including a joint outings series.

Schodack Area Land Trust

Schodack Area Land Trust (SALT) was formed in 1992 to protect and preserve Schodack's character. Working with a developer and the town, SALT received a donation of over 57 acres of land, which became a nature preserve. SALT partners with other groups in the Town of Schodack, monitors development, and participates in the planning process. SALT could be a partner for RLT for land protection in the southwestern part of the County.

Capital Roots

Capital Roots started in 1975 as a community service project of a Rensselaer County-based lawn equipment manufacturer. Today, Capital Roots works to improve nutrition in New York's Capital Region by organizing community gardens and coordinating urban greening programs, healthy streets, and educational programs. RLT and Capital Roots share common interests regarding urban land use and could be partners on land protection projects that secure better nutrition and the long-term sustainability of food production in the area.

Columbia Land Conservancy

The Columbia Land Conservancy (CLC) protects land south of Rensselaer County. Founded in 1986, CLC has collaborated with partners to preserve more than 30,000 acres of farmland, forests, and wildlife habitat. CLC encourages connection to the land by providing outdoor and educational activities at its 10 public conservation areas. They also support agriculture by ensuring prime farmland continues to be available to the next generation of farmers, and promote smart land use planning to local municipalities. There are opportunities for RLT and CLC to collaborate on land protection, especially for farms that straddle the county border.

Berkshire Taconic Regional Conservation Partnership

Reflecting the County's role in the larger ecosystem of which it is a part, RLT participates in the Berkshire Taconic Regional Conservation Partnership, a coalition of 15 land conservation organizations from four states who come together to protect land in the region. The service area of the partnership is defined by the spine of the Taconic Mountains and includes the foothills and river valleys of the surrounding landscape including most of Rensselaer County. In total, the partnership area is 150 miles long and covers about 3,300 square miles from Poughkeepsie, New York in the south to Brandon, Vermont in the north and from Troy in the west to Pittsfield, Massachusetts in the east. The area is included in the New York State Open Space Plan and the Forest Action Plans of New York, Vermont, Massachusetts, and Connecticut. The Nature Conservancy has identified the large forest blocks in the

partnership service area as being important for climate change resilience. One of the Partnership's primary goals is to save habitat and migration corridors for large ranging species such as moose and bears, as well as to protect regionally important woodlands to support forestry economies.

Landowners

Owners of undeveloped land can be key partners in conservation and for supporting it through donations, volunteering, and promoting land conservation to friends and family. RLT can reach out to landowners to learn about their conservation goals and concerns. Monitoring upcoming ownership changes among the conservation priority areas can enable RLT to act quickly on opportunities for conservation as they arise. Similarly, RLT can continue to foster relationships with real estate professionals to receive early notice on new listings.

Local Businesses

Businesses can be enthusiastic partners in conservation and should continue to be approached for financial support, volunteers, and in-kind assistance. Supporting conservation can help promote the business to customers, show consideration for community needs, and can be a rewarding way to show concern for the place where they do business.

8. Workplan

The Chart below identifies tasks that should be undertaken to accomplish the goals set forth in this Plan. The chart should not be considered exhaustive since some of the workplan tasks are being performed already while others may ultimately be considered unnecessary. To successfully implement the Plan, RLT should accomplish the following:

Task	Timeframe	Responsibility
Increase visibility of RLT by strengthening and diversifying communications	Immediate (0-2) years and then continual	Staff
Educate and involve the public to broaden support for land efforts	Continual	Staff and Board
Connect with allies to ensure continued support and local level implementation	Continual	Staff and Board
Coordinate implementation activities among the key players	Continual	Staff
Facilitate local implementation by working with municipal officials and State and County government	Immediate (0-2) years and continual	Staff and Board
Support partners in securing funding for implementation to maximize local investment in conservation	Continual	Staff and Board
Measure and monitor success to determine if goals are being met	Continual	Staff
Periodically update and revise the Plan to reflect changing conditions	As needed, but formally every four years	Board

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Appendices

Appendix A: Community Selected Conservation Areas by Municipality (alphabetical order)

Municipality	Type of Community Value	Area
Berlin	Biodiversity; Scenic	Arc in eastern portion of town
	Park	Cowee Forest
	Historic; Recreational	Cherry Plain State Wildlife Management Area
	Cultural	Southwest corner of town adjacent to Cowee Forest
	Agricultural; Scenic	Rte 22 corridor
	Economic	Circular area west of Rte 22
	Biodiversity; Parks	Cowee Forest (northern portion)
	Biodiversity; Parks	Cowee Forest (southern portion)
	Biodiversity; Parks	Berlin State Forest
	Biodiversity; Parks	Taconic Ridge State Forest
	Biodiversity	Intermittent narrow strip in eastern part of town
Brunswick	Historic	Gypsy Lane area
	Agricultural	Sweet Milk Creek Rd
	Agricultural; Scenic	Area between Routes 278 and 355
	Cultural	Ellipse along Poestenkill
	Recreational	West of Rte 351
	Biodiversity	North and South of Rte 355
	Scenic	Route 2 corridor
	Scenic	Route 7 corridor
	Scenic	Route 278 corridor
	Scenic	Route 351 corridor
	Agricultural	Area along Rte 128
Castleton-on-Hudson	Historic	Village
East Greenbush	Biodiversity	West of Rte 9
	Scenic	Rte 9 corridor
	Scenic	Hudson River shoreline
	Historic; Cultural; Recreational	Papsacanee Island Nature Preserve
	Biodiversity	Ridge Rd
	Biodiversity	Temple Ln
	Biodiversity; Recreational	Along Rte 55
	Biodiversity; Scenic	Town Park Rd

Grafton	Biodiversity	Large area in western portion of town
	Economic	Northwest and north central portion of town
	Park; Economic; Recreational	Gundrum Forest and environs
	Drinking Water	Dunham Reservoir
	Park; Recreational	Grafton Lakes State Park
	Recreational	Area southeast of Babcock Lake
	Cultural, Recreational	Dyken Pond Env. Education Center
	Scenic	Route 2 corridor
	Recreational	Thin strip from Pittstown State Forest to Dyken Pond Env. Education Center
Hoosick	Agricultural	Rte 22 corridor
	Biodiversity	Northeast of Rte 102
	Agricultural; Scenic	Northeast of Woods Brook
	Historic	South of Rte 67
	Historic; Scenic; Parks	Bennington Battlefield
	Biodiversity	Rte 67 corridor
	Cultural	Beachwood Rd Area
	Parks; Recreational	Tibbits State Forest
	Biodiversity	West of Rte 22 in southern part of town
	Biodiversity: Recreational	SE corner of town
	Agricultural	Rte 100 corridor
	Geologic	SE corner of town (within larger biodiversity and recreational area)
	Scenic	Rte 7 corridor
	Recreational	Rte 100 corridor
Nassau	Biodiversity	Maiden Bridge Rd
	Biodiversity	Smith Pond
	Recreational	Area west of Smith Pond
	Park	Stewart Preserve
	Park	Park along Mashodack Rd
	Economic	Jeffersonville Rd
	Biodiversity	Strip east of Mud Pond Rd
	Recreation	Tsatsawassa Lake
	Cultural; Recreation	Area east of Olsenberry Hill Rd
	Biodiversity	Strip west of Rte 66
	Biodiversity	Tackawastic Creek
	Scenic	Rte 43 corridor
North Greenbush	Biodiversity; Scenic; Recreational	Area west of Rte 4
	Biodiversity; Scenic; Recreational	Area south of Rte 136
	Biodiversity; Recreational	Area west of Rte 69
	Recreational	Area north of Rte 43
	Historic	Are along Mammoth Springs Rd

Petersburgh	Park	Cowee Forest
	Agricultural; Scenic	Rte 22 corridor
	Biodiversity	Eastern half of town
	Park	Cowee Forest
	Recreational; Scenic	Taconic Ridge State Forest
	Biodiversity	Long narrow strip along eastern part of town
Poestenkill	Scenic	Rte 66 corridor
	Scenic	Rte 351 corridor
	Park	Sluyter Preserve
	Park	Barberville Falls Preserve
	Scenic	West of Poestenkill Community Forest
	Cultural; Economic; Recreational	Poestenkill Community Forest
	Park	Geiser Preserve
	Recreational	Area northeast of Poestenkill Community Forest
	Biodiversity; Scenic	Arc in eastern portion of town
Pittstown	Drinking water; Scenic	Tomhannock Reservoir
	Biodiversity	Northeast corner of town south of Rte 67
	Economic; Recreational	East of Pittstown state Forest
	Scenic	Route 7 corridor
	Scenic	Route 111 corridor
	Scenic	Route 113 corridor
	Scenic	Route 115 corridor
	Park; Economic; Recreational	Pittstown State Forest
Rensselaer	Biodiversity	Area north of Rte43
	Historic	7th street
Sand Lake	Biodiversity; Recreational; Agricultural	West of Rte 150
	Scenic; Economic	Moordenerkill
	Scenic	Rte 43 corridor
	Scenic	Rte 351 corridor
	Scenic	Rte 66 corridor
	Recreational	Large area west of Rte 43
	Biodiversity	Northeast of Burden Lake
	Biodiversity	Heaven Brook
	Biodiversity; Scenic	Cranberry Vly Creek
	Recreational	West of Kipple Rd
Schaghticoke	Scenic	Hudson River shoreline
	Agricultural	Rte 40 corridor, Rte 67 corridor
	Geologic	Deep Kill
		Mill Hollow Brook
	Recreational	Rte 114 area

Schodack	Scenic	Hudson River shoreline
	Biodiversity	West of Rte 9J in northwest corner of town
	Biodiversity	Papsacanee Creek
	Biodiversity; Scenic	Schodack Island State Park
	Scenic	Moordener Kill
	Park; Scenic	Schodack Town Park
	Agricultural; Scenic	Large area along Rte 4
	Agricultural; Scenic	Muitzes Kill area
	Agricultural; Scenic	Jordan Ln
	Scenic	I-90 corridor
	Biodiversity	New Rd
	Biodiversity	Bunker Hill Rd
	Economic	Nassau Lake
Stephentown	Recreational; Cultural; Economic	East Nassau Community Forest
	Biodiversity	Strip along Rte 23
	Scenic	Rte 43 corridor
	Agricultural; Scenic	Rte 22 corridor
	Biodiversity; Parks	Cowee Forest (northern portion)
	Biodiversity; Parks	Cowee Forest (southern portion)
	Biodiversity; Parks	Stump Pond west of Williams Rd
	Biodiversity; Parks	Stump Pond along Calvin Cole Rd
	Biodiversity; Parks	Stump Pond along Old Town Rd
	Biodiversity; Parks	Wemple Rd
	Biodiversity; Parks	Cowee Forest
	Biodiversity	Narrow strip in Cowee Forest
Troy	Scenic	Hudson River shoreline
	Historic	Oakwood Cemetery
	Parks; Recreational	Frear Park
	Parks; Recreational	Prospect Park
	Parks; Historic; Recreational	Burden's Iron Work Site and Pond
	Cultural	Area east of Rte 4

Appendix B: Priority Scoring Methodology

While all the natural resources in Rensselaer County are important for their own sake, many resources contribute to a larger area of local or regional importance. In order to determine which areas of the county may contain resources that warrant consideration for future conservation, a priority scoring system was developed. The scoring system relies on spatial data that were analyzed within a GIS environment. For this project we focused on five primary resource themes – water, scenic, ecological, agricultural and climate resiliency. Data for the scoring analyses were compiled from national, regional, state, and local resources. A data table that lists all the data that was acquired or created for this project (not all of which was used in the prioritization analysis) is shown below.

In order to perform the prioritization analysis, GIS layers for each resource theme were given a score value, or a range of values. In general we started with each dataset having equal value within a resource, and then gave additional weight to those feature types that were determined to have a more significant impact on the resource in question. For example, for water resources, drinking water protection was determined to be of very high importance and as such land within close proximity to drinking water sources, such as the Tomhannock Reservoir, were given a score of four points, while a small wetland (less than 10 acres) was given a score of two points. The tables that follow illustrate the scoring that was used for each resource. The notes within the tables give further explanation on the importance of certain features or more information about the data used in the scoring evaluation.

Scoring for water resources, scenic resources and agricultural resources was based on adding scores for each overlapping feature. The distribution of total scores was then classified into six categories from highest to lowest, using the acreage of the total score area to distribute the scoring across a standard bell curve. In general the highest priority category corresponds to the top 5%± of the total scores, by area and the top half of the priority categories correspond to the top 50-60% of the total scores, by area. For the ecological resource scoring, Dr. David Hunt performed an independent prioritization for the county. He created four ecological tiers, and those tiers were used as the basis for the scoring criteria. For climate resiliency, the Nature Conservancy evaluated the entire northeastern United States to determine a "resiliency score." We utilized their scores from "Far above average" to "Average" to set our scoring criteria, and also incorporated tidal wetland modeling prepared by Scenic Hudson. See the following tables for additional information.

Water Resources - Prioritization Scoring Criteria

Feature	Points	Notes
NYSDEC Wetlands and 100' regulated buffer area	3 pts	NYSDEC wetlands are important to water quality due to their size (12.4+ acre).
National Wetland Inventory wetlands and 100' buffer (*outside NYSDEC*)	3 pts 2 pts - < 10 acres and > 100' from DEC Wetland	NWI wetlands within 100' of DEC wetland are considered contributing to the NYSDEC network, regardless of size and thus also receive 3 pts.
Riparian Areas as delineated by D. Hunt	3 pts	All classes defined by Dr. David Hunt given equal weight
Stream/Surface water and associated Buffers	3 pts – within 100' of Class AA or A 2 pts – from 100-200' of Class AA or A 2 pts - all non-AA/A surface waters and/or within 100' of Class B, Class C(T) or (TS) 1 pt – within 100' of Class C 1 pt – within 50' of All others 1 pt – floodplain areas outside of other buffer zone	For area of overlapping water buffers the highest order buffer is used, buffer areas are not "double counted." Since riparian areas are a more defined type of buffer, the riparian score supersedes the stream buffer score in areas of overlap.
Steep Slopes	3 pts – 8-25% slope 2 pt - > 25% slope	Slopes less than 8% are generally considered acceptable for most types of development. Slopes 8-25% are considered developable, however there is an increased risk of water quality degradation. Slopes over 25% are considered less vulnerable to development due to economics, but still large impact if disturbed.
Soil Permeability	3 pts - Well/Moderately well drained 2 pt - Excessively drained, Poorly/ Somewhat poorly drained	Want to preserve the best draining soil to allow for storm water infiltration and filtering, however development in less suitable soils (excessive or poorly drained soils) could have a larger negative impact on water quality.
Land Cover	3 pts – Forested (all classes) 2 pts - Scrub/Shrub 1 pt - Grassland/Herbaceous, Pasture Hay	Based on 30m 2011 National Land Cover Database with some modification based on ortho photo analysis
Well protection areas	4 pts – within 400' of public well buffer and from 400' to 1/4-mile and within drainage basin of public well 3 pts – from 1/4 to 1/2-miles within drainage basin of public well 2 pts - Remainder of drainage basin	Most wells in bedrock, thus source area unknown. Since groundwater flow above bedrock generally follows the surface topography, the watershed of each water supply well location is used as an approximate source area. Highest score used in cases of overlapping buffers.
Overburden aquifers	2 pts	Potential drinking water source
Reservoir Protection area (applicable to the Tomhannock Watershed)	4 pts – within 400' of reservoir and from 400' to 1/4-mile of reservoir, and within watershed 3 pts – within ½-mile of tribs outside ¼-mile of reservoir and from 1/4 to 1/2-mile of reservoir and within watershed 2 pt - Remainder of watershed	Tributary buffer score supersedes stream buffer scores listed previously.
Area outside of water supply districts	1 pt	Homes outside of water supply districts are using groundwater from private wells

Scenic Resources - Prioritization Scoring Criteria

Feature	Points	Notes
Within Viewshed of key locations and corridors	***First:*** 2 pts for first location, 1 pt for each additional location. 1 pt per location for leaf-off visibility ***Then Reclassified:*** 1 pt = 2 pts 2-4 pts = 3 pts 5-8 pts = 4 pts 9-13 pts = 5 pts 14-19 pts = 6 pts 20-26 pts = 7 pts 27-37 pts = 8 pts	Viewsheds imply areas that can be seen from a designated scenic location (as determined by community values and local knowledge), as well as those locations that can see the location in question. Due to there being some locations that fall within multiple overlapping viewsheds the scores were normalized so viewshed scoring didn't saturate the analysis, while still allowing for those areas that can be seen from multiple locations to have a higher scoring weight.
Proximate to scenic corridor (road or trail) or Scenic point	2 pts – within 150' of scenic road, trail or point 1 pt – 150-300' of scenic road, trail or point	While the views from these areas are important, the immediate vicinity along these corridors contributes to the overall user experience. Scenic roads and trails are those designated by the state and/or those identified as such in the community values meetings.
Proximate to all other trail corridors	2 pts – within 100' of existing and planned trails 1 pt – 100-200' of existing and planned trails	Immediate vicinity along these trails contributes to the overall user experience. Trail buffers are dissolved, so buffers of trails close to one another are not double-counted. Scoring for scenic trails supersedes local trail scoring
Proximity to parks and preserves	2 pts – within 1/8-mile of parkland 1 pt – within ¼-mile of parkland	The areas surrounding existing parks and preserves can contribute to the user experience and provide a visual buffer of the parkland.
Within Community Value designated scenic area	2 pts	Areas identified during the community values workshops as having scenic value
Waterfalls	2 pts – within 500' of waterfall 1 pt – within 1000' of waterfall	The areas surrounding waterfalls can contribute to the user experience and provide a visual buffer

Ecological Resources - Prioritization Scoring Criteria

Feature	Points	Notes
Priority Conservation Sites per Dr. David Hunt	Level 2 Sites: 5 pts - Tier 1 Site 4 pts - Tier 2 Site 3 pts - Tier 3 Site 2 pts - Tier 4 Site 1 pt - Any area identified in Level 1 that isn't included in level 2	Dr. David Hunt did an extensive ecological analysis for the County and his results were used as the basis for the scoring. (See Appendix

Agricultural Resources - Prioritization Scoring Criteria

Feature	Points	Notes
Active Farmland	5 pts – 150+ contiguous acres 4 pts – 50-150 contiguous acres 3 pts < 50 contiguous acres	Larger areas of farmland provide greater production value, and are also more critical to keep in production
Farmland Soils	3 pts – Prime 2 pts – Statewide Important 1 pt – Prime if drained	Farmland soils, in theory, provide the best conditions for successful agricultural crops
Ag District	1 pt all land within Ag district	"Ag districts provide benefits that help make and keep farming as a viable economic activity, thereby maintaining land in active agricultural use"[1]
Ag land within 200' of watercourse	1 pt – applies to farmland only	Ag land close to streams can support water quality if managed properly
Buffer area of Ag land	1 pt – non-ag land within 1/8-mile of farmland	Non-ag land in close proximity to farm land buffers the farmland from other uses and also provides areas for potential expansion
Ag concentration area	3 pts – >2,000 acre farmland block 2 pts – 1,000 – 2,000 acre farmland block 1 pt – 500 – 1,000 acre farmland block	Farmland in proximity to other farmland supports one another. A farmland block is defined by contiguous farmland and adjacent 1/8-mile buffer areas.

[1]*Department of Ag & Markets – Ag District FAQs*

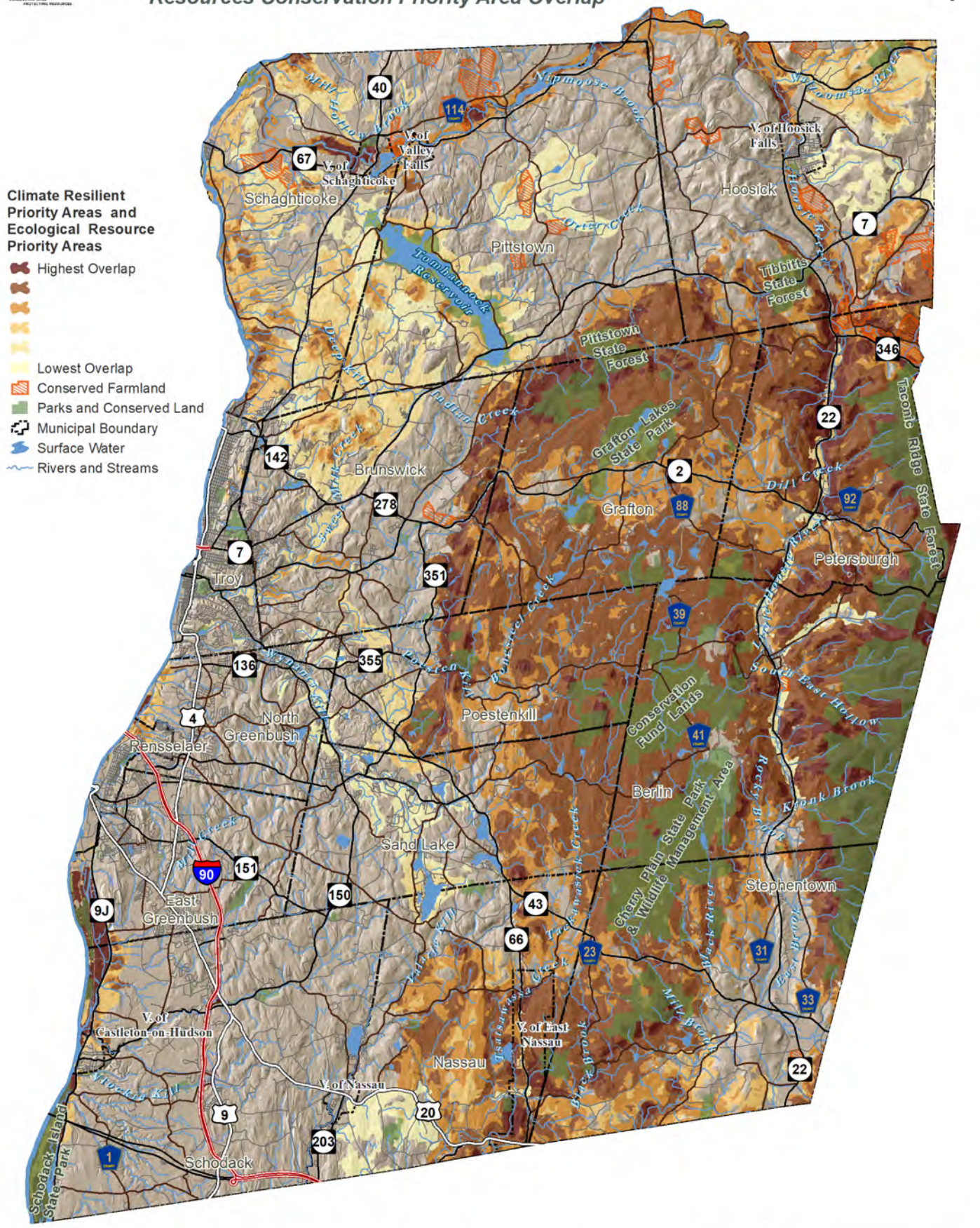
Climate Resiliency - Prioritization Scoring Criteria

Feature	Points	Notes
TNC – Final Resiliency Score	Far Above Average (>2 SD) – 4 pts Above Average (1 SD to 2 SD) – 3 pts Slightly Above Average (0.5 to 1 SD) – 2 pts Average (-0.5 to 0.5 SD) – 1 pt	TNC did an extensive analysis for climate resilient landscapes and their results were used as the basis for the scoring.
Scenic Hudson SLAMM tidal wetland data	4 pts - "Resilient" wetlands 4 pts - "New wetlands" 1 pts - "new wetland conflict" *Conflict refers to areas that are currently developed*	Scenic Hudson modeled future wetlands based on sea level rise models and classified areas that would lose wetlands (lost), maintain wetlands (resilient), and gain wetlands (new or new with conflict). Areas that will maintain wetlands or are areas that could support future wetlands are most important in terms of climate resiliency. Tidal wetland scores are in lieu of TNC resiliency scores where they are higher, otherwise the TNC score is used as TNC included wetlands in their analysis.

Habitat and Climate Resiliency

As the climate resiliency does not take into account the existence of species, only the conditions being favorable for them, we combined the Climate Resiliency scoring results with the Ecological scoring results. This allows us to visualize where there is a co-occurrence of areas that have the best chance to be resilient to climate change and also have existing important ecological resources (see Figure 13 ar right).

Figure 13: County Climate Resiliency and Ecological Resources Conservation Priority Area Overlap



Map prepared by Upstate GIS - September 2018

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Combined Resources and Overlapping Resources

Following the completion of scoring for each of the five resource themes, we looked at where the highest priority areas for all the resources exist in the county. To do this, we reclassified the individual resource prioritization scores to be on a six-point scale as shown in the table below. This allows for each of the five resources to be given equal weight. After reclassifying the priority resource areas we created a map showing the maximum score of any of the five resources across the county (see Figure 12). This map can be used to see which areas of the county contain some of the highest priority areas, regardless of the type of resource. We also added the reclassified scores together to create a map of overlapping resources. (see Figure 11). This map shows where there is a high co-occurrence of priority areas. Parcels that contain a high level of co-occurrence could qualify for multiple grant funding opportunities.

Feature	Points	Notes
Water Resource Priorities	6 pts – score of 13-17 pts 5 pts – score of 11-12 pts 4 pts – score of 9-10 pts 3 pts – score of 7-8 pts 2 pts – score of 5-6 pts 1 pts – score of 1-4 pts	Resource score ranges were normalized to a 6 point scale to give each resource equal weight.
Agricultural Resource Priorities	6 pts – score of 12-13 pts 5 pts – score of 10-11 pts 4 pts – score of 8-9 pts 3 pts – score of 6-7 pts 2 pts – score of 4-5 pts 1 pts – score of 1-3 pts	
Scenic Resource Priorities	6 pts – score of 11-15 pts 5 pts – score of 9-10 pts 4 pts – score of 7-8 pts 3 pts – score of 5-6 pts 2 pts – score of 3-4 pts 1 pts – score of 1-2 pts	
Ecological Resource Priorities	6 pts – score of 5 pts 5 pts – score of 4 pts 4 pts – score of 3 pts 3 pts – score of 2 pts 2 pts – score of 1 pt	To keep consistency across resource categories the top end of the scores was set at 6 points
Climate Resiliency Priorities	6 pts – score of 4 pts 5 pts – score of 3 pts 4 pts – score of 2 pts 3 pts – score of 1 pts	
Community Values	2 pt – Recreational resource 1 pt – Agricultural resource 1 pt – Drinking Water resource 1 pt – Biodiversity resource 2 pt –Other resources – economic, historic, cultural, and/or geologic	Scenic community values were included in the scenic resource scoring, however the remaining areas identified by the community were not directly incorporated into any of the other criteria, as such they are included in the composite scoring.

Appendix C: Ecological Feature Descriptions Used for Analysis

Brief Feature Descriptions

Rare Plant Concentration Areas

Sites that represent all areas with known concentrations of rare plants (rare at global, state, and/or county level).

Important Animal Habitats

Sites that represent examples of all known "regionally-important" animal habitat sites. "Important animal habitat" was broadly interpreted to represent a combination of 1) important "restricted" animal habitats and 2) important habitat for "rare animals". "Restricted animal habitats" generally represent microhabitat to macrohabitat types uncommon in the county where concentrations of ideally many county-rare to county-uncommon animals presumably consistently use that habitat for a key part of their life cycle or behavioral patterns.

Exemplary Natural Community Sites

Sites that represent examples of all known natural communities in the county hypothesized to be the best, among the best, or near best for their type. Community types generally follow the state classification of the NY Natural Heritage Program.

Important Restricted Ecosystem Complex Sites

Sites that represent the best chance for the long-term conservation of native biota (plants and animals) characteristic of habitat types that are not common in the county (i.e., "restricted"), thus suggested to support many rare to uncommon native species. 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).

Important Aquatic Networks

Sites that represent the best chance for the long-term conservation of native aquatic biota (plants and animals) characteristic of large contiguous and relatively little disturbed aquatic landscapes, especially riverine landscapes, and especially on the order of several miles or more long. These sites are predicted to support groups of native aquatic species, especially native fish taxa, restricted to the most natural settings, especially habitats with naturally relatively clean water and relatively unimpeded water flow.

Important Roadless Block Areas

Sites that represent the largest "roadless blocks" in the county, hypothesized as a surrogate for the largest forest-interior areas in the county and, in turn, suggestive of the largest intact natural landscapes of the county. Large roadless blocks are thought to have the best potential to support collectives of viable populations of native species, especially faunal species, that need large territories and are susceptible to human disturbances, especially disturbances from bisecting road corridors. This category also includes "aquatic blocks" that surround or include large bodies of water such as the Hudson River.

Important Forest Interior Areas

Sites that represent the largest areas of contiguous natural communities (presumably including mostly forest) far enough removed from the nearest substantial cultural disturbances to be thought of as the "most undisturbed" or "relatively undisturbed" areas of the county, at least in terms of natural land cover. These areas are thought to have the best potential to support collectives of essentially 100% native species, especially faunal species most sensitive to human disturbances. These areas are modeled as key habitat mostly for forest-interior birds and large mammals.

Important Intact Natural/Forest Landscapes

Sites throughout Rensselaer County that represent the best chance for the long-term conservation of native terrestrial biota (plants and animals) characteristic of large, contiguous "natural landscapes", especially "forest landscapes", and especially on the order of 10,000s of acres or more in size, as "functional terrestrial landscapes".

Important Forest Corridors (& Regional Connectivity)

Sites that represent the widest and most natural of relatively narrow areas ("corridors") of mostly natural communities thought to functionally connect ("link together") relatively much wider areas of natural communities ("intact natural landscapes", Feature 2) both inside and outside of the county. The collective set of all important Rensselaer County corridors is hypothesized to have the best potential to maintain regional connectivity for native species, especially large mammals ("wildlife corridors"), allowing movement widely throughout the county.

Rensselaer County Important Conservation Sites

Sites throughout Rensselaer County, New York that represent the best chance for the long-term conservation of a complete set of native biota (plants and animals) of the county. The collective of these sites is hypothesized to provide the most effective means to conserve the entire suite of native and natural county biodiversity features.

Physiography

Inherent physiographic areas throughout Rensselaer County that are reflected by different regional suites of biota (plants and animals) associated with different characteristic and/or indicative regional suites of natural communities that develop on different underlying large-scale physical combinations of bedrock and surficial geology, topography, elevation, soils, and hydrology.

Detailed Feature Descriptions

Rare Plant Concentration Areas

Sites throughout Rensselaer County, New York that represent all areas with known concentrations of rare plants. "Rare" plants are broadly interpreted to include those rare at a global, state, and especially county level, as determined by rarity lists maintained by the New York Natural Heritage Program (for global and state rare species) and the Rensselaer County Biodiversity Greenprint Project (for county rare species). "Rare plant concentration areas" are interpreted as sites with generally at least 5 species of at least county rare status, ideally many more. Most sites were determined from recent observations of rare plant species (in the last 25 years, since 1990). However, other sites with historical specimens (e.g., from the 1930s) of many rare plant species that have not been field checked were included among the important area set, especially for areas correlated with suspected rare community types and was determined to be in good condition from air photo interpretation.

Important Animal Habitats

Sites throughout Rensselaer County, New York that represent examples of all known "regionally-important" animal habitat sites. "Important animal habitat" was broadly interpreted to represent a combination of 1) important "restricted" animal habitats and 2) important habitat for "rare animals". "Restricted animal habitats" generally represent microhabitat to macrohabitat types uncommon in the county where concentrations of ideally many county-rare to county-uncommon animals presumably consistently use that habitat for a key part of their life cycle or behavioral patterns. All types of "animal groups" were considered for these habitat types including all vertebrate groups (mammals, birds, fish, herptiles) and multiple invertebrate groups (e.g., odonates, mollusks). Animal groups range from general categories (e.g., cave biota) to intermediate categories (e.g., boreal mammals, soaring birds, shorebirds, forest-interior birds, waterfowl, cleanwater macroinvertebrates) to specific groups (e.g., bats, turtles, native trout). "Habitat use types" are broad, but were intended to be comprehensive, including more common behavioral activity types: 1) breeding /spawning/nesting/rookery areas, 2) overwintering/denning/bedding/ hibernaculum areas, and 3) feeding/browsing areas, as well as more unusual types such as "basking areas". "Rare" animals are broadly interpreted to include those rare at especially a global to state level, but also include county level rarity, as determined by rarity lists maintained by the New York Natural Heritage Program (for global- and state-rare species) and the Rensselaer County Biodiversity Greenprint Project (for county-rare species). While not all known/documented rare animal populations in the county were considered to be "important animal habitat", preference was given to "rare animal concentration areas", especially those in habitats that consist primarily of natural or semi-natural community types. Unlike "rare plant concentration areas", which were defined generally based on at least 5 species of at least county rare status, "rare animal concentration areas" were interpreted as sites with ideally at least only 2 species of at least county rare status. However, several single rare species sites were designated as "important animal habitat", especially ones with state-rare and especially any global-rare species and especially if the habitat is primarily natural, contains unusual natural community types for the county, and is suspected to support additional rare to uncommon species as part of a "concentration area".

Important animal habitat sites were determined from a combination of: 1) recent observations of animal species (in the last ~25 years, since 1990), 2) numerous reports from numerous local county animal experts, landowners, and recreation-users, and 3) numerous state-rare species populations documented in the NY Natural Heritage Program database. A few sites with historical reports (e.g., from the 1930-1970s) were included among the important area set, whether field checked or not, especially for areas correlated with suspected rare community types, known to be in good condition, and with suspected potential for those historical species to still be present in the habitat. While no comprehensive model for "important animal habitat types" was known, an expansion of a model partially designed for the Rensselaer Plateau Conservation Plan was undertaken in a first attempt to both derive a comprehensive set of habitat/concentration area types and apply it to related county-important sites. The current effort combined: 1) all important animal habitat types proposed for the plateau, 2) all more formally-designated state "significant habitat types" known from the county (e.g., anadromous fish concentration area), 3) all known other "designated important animal areas" (e.g., Important Bird Areas of New York Audubon), and 4) any other habitat/animal concentration area types thought to be of equal importance, spanning all animal groups (vertebrates and invertebrates alike) and all habitat groups (terrestrial, aquatic, and even "aerial").

Exemplary Natural Community Sites

Sites throughout Rensselaer County, New York that represent examples of all known natural communities in the county hypothesized to be the best, among the best, or near best for their type. "Exemplary" or "best" sites consider 1) the overall quality of community examples [those of the largest size, best condition, and landscape context], 2) the complementary of different sites representing different community variants, and 3) the abundance of the community in the county. Community types generally follow the state classification of the NY Natural Heritage Program.

Important Restricted Ecosystem Complex Sites

Sites throughout Rensselaer County, New York that represent the best chance for the long-term conservation of native biota (plants and animals) characteristic of habitat types that are not common in the county (i.e., "restricted"), thus suggested to support many rare to uncommon native species. 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 the county are covered by common forest ecosystems, more local patches of other more unusual ecosystem complexes are scattered throughout the county that contain suites of less common species not found in the common forest ecosystem types.

A first attempt was made here to develop a comprehensive set of restricted ecosystem complex types for the entire county, expanding upon the comprehensive set applied for the Rensselaer Plateau and borrowing from a model developed for the Adirondack Region. The 11 resulting complex types range in climatic zone and elevation from tidal areas (e.g., tidal wetlands) near sea level to boreal areas (e.g., boreal flats and boreal rocky summits) above about 1700 feet elevation. They range in topography from basins (e.g., peatland and mineral soil wetland complexes) to flats (e.g., sandplains and clayplains) to steep slopes and summits (e.g., rocky summits). They range in hydrology from inundated areas (lake and riparian complexes) to xeric habitats (sandplains and rocky summits). Lastly, they range in naturalness from near old-growth conditions (mature forest patches) to a semi-natural state (grasslands and reservoirs). Many complex types were designated throughout the county at various levels of classification (up to 7 levels) based on different characteristics within each type including: elevation/climatic zone, bedrock and surficial geology (e.g., acidic/calcareous), landforms, slope position, stream confinement, stream size class, stream order, hydrologic regime (e.g., tidal/non-tidal), naturalness, ecoregion variant, and physiographic variant. While the concept for each complex type is based on field observations from the county, not all important sites have been field confirmed, but rather many were delineated based on remote modeling using multiple GIS layers that predict where different ecosystem complexes are likely to occur (wetlands, streams, lakes, bedrock geology, surficial geology, soils, tidal wetlands, submerged aquatic beds, areas of steep slope, and land cover categories).

Important Aquatic Networks

Sites throughout Rensselaer County that represent the best chance for the long-term conservation of native aquatic biota (plants and animals) characteristic of large contiguous and relatively little disturbed aquatic landscapes, especially riverine landscapes, and especially on the order of several miles or more long. These sites are predicted to support groups of native aquatic species, especially native fish taxa, restricted to the most natural settings, especially habitats with naturally relatively clean water and relatively unimpeded water flow. These sites consider the overall quality of the aquatic landscape, focusing on those with: 1) the largest size [suggesting a high degree of geomorphology,

habitat, and species diversity], 2) the lowest degree of impact from dams & diversions, predicted to be necessary to best support species of large connected aquatic areas [high contiguity and low bisection], and, to a lesser degree, 3) the best condition [especially relatively high water quality]. The interpretation and design of aquatic network boundaries, especially existing relatively intact areas that are currently most influential in creating a cleanwater stream system, generally follows a model developed for regional planning efforts of the Adirondack Nature Conservancy, where all regionally-important aquatic networks of the Adirondacks were mapped. Thus, included within each site are: 1) "intact subcatchments" of essentially 100% natural communities that feed into a stream system, usually near its headwaters, 2) "intact riparian corridors" of essentially 100% natural communities that laterally surround sections of a stream system, usually in scattered reaches along its midreach and/or main channel segments, with corridor width determined based on proximity and the degree slope of surrounding areas, and 3) connected associated aquatic/riparian features, mostly lakes, riparian wetlands, and open riparian/riverside upland communities. Large reservoirs are generally treated as "cultural disturbances" from an aquatic perspective and were heavily factored into the overall importance assessment for each aquatic network (i.e., the best networks ideally have no or the fewest and smallest reservoirs).

Important Roadless Block Areas

Sites throughout Rensselaer County, New York that represent the largest "roadless blocks" in the county, hypothesized as a surrogate for the largest forest-interior areas in the county and, in turn, suggestive of the largest intact natural landscapes of the county. Large roadless blocks are thought to have the best potential to support collectives of viable populations of native species, especially faunal species, that need large territories and are susceptible to human disturbances, especially disturbances from bisecting road corridors. Although termed "roadless blocks", a "block" referring to an area bounded by roads (i.e., one can drive around the entire block and return to the starting point without turning around), most of these blocks contain "intruding" or "interior" roads. However, none contain "bisecting roads", at least roads surpassing a critical "use threshold", in this case "public roads", whether paved or dirt. Thus, private roads, mostly those labeled "Ways" and "Driveways" plus of State Road Class 5 or greater, were not considered from a biodiversity perspective to be "roads" (i.e., roads predicted to have substantial impact on native biodiversity as "barriers"). The largest, most intact blocks within a region, especially blocks in the largely forested Northeast United States, are often referred to interchangeably as "matrix blocks", "forest blocks", or "landscape blocks". Block theory generally follows the model of Reed Noss (in Conservation Biology), and the block application here generally follows the model of regional planning efforts of The Nature Conservancy. Our analysis for Rensselaer County distinguished "terrestrial blocks", typical roadless blocks in forested landscapes, from "aquatic blocks" that surround or include large bodies of water such as the Hudson River. Although high bridges over rivers were not treated as bisecting features for aquatic blocks, large dams such as the Federal Dam in Troy, was considered an "aquatic barrier" bisecting blocks.

Important Forest Interior Areas

Sites throughout Rensselaer County, New York that represent the largest areas of contiguous natural communities (presumably including mostly forest) far enough removed from the nearest substantial cultural disturbances to be thought of as the "most undisturbed" or "relatively undisturbed" areas of the county, at least in terms of natural land cover. These areas are thought to have the best potential to support collectives of essentially 100% native species, especially faunal species most sensitive to human disturbances that may be restricted to "interior" areas, sometimes more commonly called "deep forest". These areas are modeled as key habitat mostly for forest-interior birds and large

mammals (i.e., "wildlife habitat"), that they are thought to use most often and/or for critical lifestyle activities (e.g., breeding/denning areas).

Important Intact Natural/Forest Landscapes

Sites throughout Rensselaer County, New York that represent the best chance for the long-term conservation of native terrestrial biota (plants and animals) characteristic of large, contiguous "natural landscapes", especially "forest landscapes", and especially on the order of 10,000s of acres or more in size, as "functional terrestrial landscapes". Natural landscapes are one of two types of functional landscapes typically considered for conservation in regions, along with aquatic networks ("functional aquatic landscapes"). These sites are noted for supporting groups of species restricted to the most natural areas in a region, especially forest-interior areas and mature forests. These sites consider the overall quality of the landscape, focusing on 1) those of the largest size, 2) configurations/shapes predicted to best support species of large natural areas [high contiguity and low dissection], and, to a lesser degree, 3) the best condition. The interpretation of "natural" landscapes generally followed regional landscape interpretation treatments of The Nature Conservancy, which, in turn, is based on the definition of "natural communities" in the state classification of the NY Natural Heritage Program. Natural landscapes are composed of not only natural uplands (especially many forest community types), but also natural wetlands, natural open uplands, as well as natural lakes, rivers, and estuaries. Reservoirs, including the Tomhannock Reservoir, are treated as "natural", code in the National Land Cover Dataset (NLCD) as "open water. Early successional areas may have been treated as "natural" if interpreted as a natural type in NLCD (e.g., the "grassland/herbaceous" category).

Important Forest Corridors (& Regional Connectivity)

Sites throughout Rensselaer County, New York that represent the widest and most natural of relatively narrow areas ("corridors") of mostly natural communities thought to functionally connect ("link together") relatively much wider areas of natural communities ("intact natural landscapes") both inside and outside of the county. The collective set of all-important Rensselaer County corridors is hypothesized to have the best potential to maintain regional connectivity for native species, especially large mammals ("wildlife corridors"), allowing movement widely throughout the county. Corridors that connect landscapes of different sizes can be used to represent travel routes between "biodiversity source" areas (the largest natural landscapes of a region from where many species originate) and "biodiversity sink" areas (smaller natural landscapes in a region into which regional species migrate, looking for new territory). The county-wide set of important forest corridors was designed to most effectively link the multiple scattered important natural landscapes of the county 1) to each other and 2) to similar natural landscapes outside the county, whether in New York or in nearby states including Massachusetts, Vermont, and Connecticut, especially via corridor areas identified to have the highest concentration of natural communities.

Unlike several other ecological features, the "most important" corridors were not based on size, condition, and internal diversity but rather on the nature of the areas that they link. Thus, the most important corridors for Rensselaer County are suggested to be those that link the largest landscapes of the region, both within and outside of Rensselaer County, to other relatively large landscapes. Thus, the designation of "corridors" are in the context of first developing a set of intact natural landscapes to connect, as a component of a "regional connectivity" or "linkage" representation. The focus here, for Rensselaer County, is on corridors "external" to each landscape, connecting two different intact natural landscapes, rather than "internal corridors", which provide tighter connectivity at a smaller, more local, scale within a single intact natural landscape, although one type of internal corridor

within two patchy Level-2 landscapes was highlighted here as county important. Corridor theory generally follows the model of Reed Noss (Conservation Biology), and corridor application generally follows a detailed model developed for regional planning efforts for the Rensselaer Plateau that, in turn, was modeled after corridor areas delineated in moderately fine detail between the Tug Hill Plateau and Adirondack Region, which, in turn, evolved from a coarse-scale diagram of important corridors for the entire Adirondack Region, the latter two as part of efforts for the Adirondack Nature Conservancy.

Rensselaer County Important Conservation Sites

Sites throughout Rensselaer County, New York that represent the best chance for the long-term conservation of a complete set of native biota (plants and animals) of the county. The collective of these sites is hypothesized to provide the most effective means to conserve the entire suite of native and natural county biodiversity features. This set considers: 1) the overall quality of conservation sites [those of the largest size, best condition and landscape context], 2) the complementarity of different sites representing different groups of ecological features, especially functional terrestrial and aquatic landscapes, 3) the diversity of ecological features across the five physiographic regions and ten HUC-10 watersheds of the county, and 4) the uniqueness/irreplaceability of contained ecological features for the county. Derivation of sites are modeled after and generally follow methods of The Nature Conservancy (ecoregional planning), involving: stratification of sites, the viability of sites, the complementarity of diverse feature types, sufficient replication of similar site types, and the breadth of ecological features (especially terrestrial vs. aquatic landscapes). Sites with the overall highest conservation importance typically contain multiple important ecological features, especially sites with the highest values for the most number of features (intact terrestrial landscapes, important aquatic networks, important ecosystem complexes, exemplary natural communities, rare plant concentration areas, and important animal habitats). Important biodiversity conservation sites are generally of large-scale, representing relatively large/long, intact functional landscapes ("natural landscapes" or "forest landscapes" plus "aquatic networks"), supplemented with smaller areas representing concentrations of unique ecological features ("ecological aggregates") not well represented in the other larger landscape-level features.

Physiography

Inherent physiographic areas throughout Rensselaer County that are reflected by different regional suites of biota (plants and animals) associated with different characteristic and/or indicative regional suites of natural communities that develop on different underlying large-scale physical combinations of bedrock and surficial geology, topography, elevation, soils, and hydrology. Areas mapped at the county level have been and continue to be modeled from those of multiple existing regional maps ranging from a continental to state level, starting with the "classic" Fenneman map of U.S. physiographic areas dated 1933. The number, names, and shapes of discrete areas mapped for the county generally adhere to those of the four most commonly-used systems including those of NYS DEC, TNC/USFS, and US EPA. While the county treatment for each of those groups is similar in number, names and shapes, each of those three characters differ among the three prior treatments. All were done at broad scales, estimated at well over 1:100,000, thus they have "moderate precision".

Appendix D: New York Natural Heritage Program 2018 Report on Rare Animals, Rare Plants, and Significant Natural Communities

The following rare plants, rare animals, and significant natural communities**
have been documented in the Natural Heritage database for Rensselaer County by the New York Natural Heritage Program

	Common Name	Scientific Name	NY State Listing	NY State Rank*
Mammals	Northern Long-eared Bat	*Myotis septentrionalis*	Threatened also Federally Listed as Threatened	S1
	+ New England Cottontail	*Sylvilagus transitionalis*	Special Concern	S1S2
Birds	Bald Eagle	*Haliaeetus leucocephalus*	Threatened	S2S3B
	Least Bittern	*Ixobrychus exilis*	Threatened	S3B
	Northern Harrier	*Circus cyaneus*	Threatened	S3B
	Pied-billed Grebe	*Podilymbus podiceps*	Threatened	S3B
Fish	Shortnose Sturgeon	*Acipenser brevirostrum*	Endangered also Federally Listed as Endangered	S1
Animal Assemblage	Anadromous Fish Concentration Area			S3
Butterflies	West Virginia White	*Pieris virginiensis*	Unlisted	S3
Moths	Ostrich Fern Borer Moth	*Papaipema sp. 2 nr. pterisii*	Unlisted	S1S3
Dragonflies and Damselflies	Brook Snaketail	*Ophiogomphus aspersus*	Unlisted	S3
	Cobra Clubtail	*Gomphus vastus*	Unlisted	S1
	Forcipate Emerald	*Somatochlora forcipata*	Unlisted	S1
	Midland Clubtail	*Gomphurus fraternus*	Unlisted	S3
	Rapids Clubtail	*Gomphus quadricolor*	Unlisted	S3
	Russet-tipped Clubtail	*Stylurus plagiatus*	Unlisted	S1
	Southern Pygmy Clubtail	*Lanthus vernalis*	Unlisted	S1
	Southern Spreadwing	*Lestes australis*	Unlisted	S2S3
	Umber Shadowdragon	*Neurocordulia obsoleta*	Unlisted	S1

	Common Name	Scientific Name	NY State Listing	NY State Rank*
Freshwater Mussels	Alewife Floater	*Anodonta implicata*	Unlisted	S1S2
	+ Tidewater Mucket	*Leptodea ochracea*	Unlisted	S1
	+ Yellow Lampmussel	*Lampsilis cariosa*	Unlisted	S3
Plants	Bent Sedge	*Carex styloflexa*	Endangered	S1
	Davis' Sedge	*Carex davisii*	Threatened	S2
	Delmarva Beggar-ticks	*Bidens bidentoides*	Rare	S3
	Farwell's Water Milfoil	*Myriophyllum farwellii*	Threatened	S2
	Golden Club	*Orontium aquaticum*	Threatened	S2
	Goldenseal	*Hydrastis canadensis*	Threatened	S2
	Leiberg's Panic Grass	*Dichanthelium leibergii*	Endangered	S1
	Midland Sedge	*Carex mesochorea*	Threatened	S2
	Rough Pennyroyal	*Hedeoma hispida*	Threatened	S2S3
	Side-oats Grama	*Bouteloua curtipendula var. curtipendula*	Endangered	S2
	Southern Yellow Flax	*Linum medium var. texanum*	Threatened	S2
	Yellow Giant-hyssop	*Agastache nepetoides*	Threatened	S2S3
	+ American Waterwort	*Elatine americana*	Endangered	S1
	+ Brown Bog Sedge	*Carex buxbaumii*	Threatened	S2
	+ Glaucous Sedge	*Carex glaucodea*	Threatened	S2
	+ Handsome Sedge	*Carex formosa*	Threatened	S2
	+ Large Twayblade	*Liparis liliifolia*	Endangered	S1
	+ Navel Corn Salad	*Valerianella umbilicata*	Endangered	SH
	+ Ovate Spike Rush	*Eleocharis ovata*	Endangered	S1S2
	+ Schweinitz's Sedge	*Carex schweinitzii*	Threatened	S2S3
	+ Sharp-tipped Blue-eyed Grass	*Sisyrinchium mucronatum*	Endangered	S1
	+ Southern Wood Violet	*Viola hirsutula*	Endangered	SH

	Common Name	Scientific Name	NY State Listing	NY State Rank*
Plants (continued)	+ Tinged Sedge	*Carex tincta*	Endangered	SH
	+ Whorled Mountain Mint	*Pycnanthemum verticillatum var. verticillatum*	Endangered	S1S2
Mosses	Anderson's Peat Moss	*Sphagnum andersonianum*	Unlisted	S1
Wetland Communities	Black Spruce-Tamarack Bog			S3
	Dwarf Shrub Bog			S3
	Floodplain Forest			S2S3
	Freshwater Tidal Marsh			S2
	Highbush Blueberry Bog Thicket			S3
	Inland Poor Fen			S3
	Oligotrophic Dimictic Lake			S3
	Rich Sloping Fen			S1
	Sedge Meadow			S4
	Shallow Emergent Marsh			S5
	Spruce-Fir Swamp			S3
	Tidal River			S3
Upland Communities	Beech-Maple Mesic Forest			S4
	Calcareous Talus Slope Woodland			S3
	Chestnut Oak Forest			S4
	Hemlock-Northern Hardwood Forest			S4
	Maple-Basswood Rich Mesic Forest			S3
	Spruce Flats			S4
	Spruce-Northern Hardwood Forest			S3S4
	Talus Cave Community			S2S3

+ = historical record only

* Conservation status in NYS as ranked by NY Natural Heritage Program on a 1 to 5 scale:
    S1 = Critically imperiled
    S2 = Imperiled
    S3 = Rare or uncommon
    S4 = Abundant and apparently secure
    S5 = Demonstrably abundant and secure
    SH = Historical records only; not seen in New York State since before 1980.

B after a rank indicates the status for breeding populations of that species.

Information about many of the rare animals, rare plants, and natural communities in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org.

** Natural communities in this report are considered significant from a statewide perspective by the NY Natural Heritage Program. They are either occurrences of a community type that is rare in the state, or a high quality example of a more common community type. By meeting specific, documented criteria, the NY Natural Heritage Program considers these community occurrences to have high ecological and conservation value.

Appendix E: A Brief History of Rensselaer County[12]

The history of Rensselaer County is rooted in the area's abundance of natural resources. The County is dotted with small hamlets, farms, quarries, mills and other factory sites, usually along the rivers and streams, along with old woods roads and logging trails from mining and forestry.

Rensselaer County's history is a microcosm of the nation's history. Within its borders, the Battle of Bennington was fought; the Anti-Rent Wars signaled the end of American feudalism; and the Industrial Revolution was born.

The area that was to become Rensselaer County was first settled by Native Americans as early as 4,000 years ago. These people were possibly the ancestors of the Algonquin-speaking Mohicans who were living in present-day Troy when the first European settlers arrived. The Mohicans were hunter-gatherers who subsisted on the large supplies of fish and game along that part of the Hudson River.

The Dutch were the first Europeans to settle in the county. They arrived in the early 1600s and quickly began buying land from the Mohicans. In 1629, Kilean Van Rensselaer, one of the directors of Dutch West India Company, established the feudal manor of Rensselaerwyck which covered most of the land in the southern and western parts of the county. Fort Crailo, in the present-day City of Rensselaer, was the location of his manor house. Several centuries later the song "Yankee Doodle" was composed there.

Early colonists lived mostly in the river valleys with the best farming soils. As population grew during the 1800s, families cleared more land to raise crops, sheep, and cattle. Settlements at higher elevations came later when available riverine farmland became scarcer.

People in the higher elevations depended on forest products to make a living. Abundant wood resources fueled numerous sawmills, which produced lumber for houses and other structures and materials for industry. To this day, selling forest products remains a key industry in the Rensselaer Plateau area of the County.

Rensselaer County was a focal point of the 1777 Revolutionary War campaign. Despite the name, the famous Battle of Bennington took place in Walloomsac, in the Town of Hoosick, New York.

After the war, New Englanders began to settle in larger numbers in Rensselaer County, which was founded in 1791 and named after its first patron, Kilean Van Rensselaer. Troy was named the county seat two years later.

During the years from 1839 to 1850, tenant farmers in the county began to contest the right of large landowners to maintain a feudal-like manor and began to revolt. Called the Anti-Rent Wars, the protest spread to a ten-county area before new laws favoring the tenants over the landowners were enacted in 1850 and ended the conflict.

12 Rensselaer County History Information and Timeline, Rensselaer County Website

Because of the County's location along major transportation routes and an abundant water supply, the area became an early center of industrial development in the Northeast. Rensselaer County played an important role in the Civil War, providing the Union Army with machine made horseshoes made at the Burden Iron Works, which was powered by the largest waterwheel in the world at the time. Remnants of the huge factory can still be found along the Poesten Kill in Troy. The city became famous for its foundry products, such as stoves, sheet iron, and steel, and in the 1900s for its clothing products, especially collars, cuffs, and shirts. The nickname, "The Collar City" still can be heard today.

Education gradually became a major economic driver in the early 19th century with the establishment of Rensselaer Polytechnic Institute, the nation's first engineering college, and Emma Willard School, among the country's first schools solely for women. Today there are numerous schools, colleges, and universities in the County.

The growth of state government in Albany in the mid-1900s and several decades thereafter led to a large increase in the region's workforce and spurred suburban development in many of the towns close enough to conveniently commute across the Hudson River to the capital. More recently, the County's scenic beauty and cultural amenities have attracted seasonal residents and visitors. The building boom of the 1990s and 2000s slowed during the Great Recession in 2008 and its aftermath but has resumed due to the improved national and regional economy over the last several years.

Finally, although it accounts for a small fraction of today's land use and employment, agriculture has endured as a vital component of local landscapes and culture. Recent interest in healthy foods and local agriculture may continue this persistent trend.

Appendix F: Rensselaer County and its Regional and Local Setting[13]

The landscape of Rensselaer County is diverse and dramatic, rising over 2,000 feet from the Hudson River in the west to the Taconic Mountains in the east and comprising varied topographical and ecological features that distinguish it from nearby areas. Prominent features of the landscape include the Tomhannock Reservoir in the northwestern part of the county; the Rensselaer Plateau rising abruptly from the broad lowland plains near the Hudson River; significant blocks of unfragmented forests, a network of rivers, streams, and wetlands; and a mosaic of large and small meadows, some of which are used for farming.

The County is located in the physiographic section of the New England province and is part of the Appalachian Mountains, North America's oldest mountain range. The highest point in Rensselaer County is Berlin Mountain, 2,818 feet above sea level, in the town of Berlin in the Taconic Mountains at the eastern edge of the County. The lowest point is sea level at the Hudson River.

Politically, Rensselaer County is comprised of two cities: the City of Troy, the county seat, and the City of Rensselaer; as well as fourteen municipalities including Berlin, Brunswick, East Greenbush, Grafton, Hoosick, Nassau, North Greenbush, Petersburgh, Pittstown, Poestenkill, Sand Lake, Schaghticoke, Schodack, and Stephentown. There are several villages as well: the Village of Schaghticoke is located in the Town of Schaghticoke, the Village of Valley Falls in the Town of Pittstown and Schaghticoke, the Village of Hoosick Falls in the Town of Hoosick, the Village of Castleton-on-Hudson in the Town of Schodack, and the villages of Nassau and East Nassau in the Town of Nassau. Almost all of the cities and towns in the County have building codes, zoning statutes, subdivision statutes, and have prepared some form of comprehensive or master plan to guide development. At the same time, many local comprehensive and master plans were prepared many years ago and may not reflect current conditions. This is because land use planning is not well-funded in many municipalities. It is our hope that this Plan may fill some information gaps for planners.

The Rensselaer County Legislature is the policy making body of Rensselaer County. Its nineteen members are responsible for the county's finances and services. They also enact local laws and resolutions and appoint county officials. The County has a Master Plan, created in 1989, which includes sections on open space and environmental concerns. The Rensselaer County Environmental Management Council (EMC) advises the legislature and other elected leaders on natural resource and environmental concerns. The EMC also manages the 156-acre Papscanee Island Nature Preserve, and the volunteer-led Adopt-A-Roadside and Adopt-A-Trail programs.

The County, as well as two cities and several municipalities, employ professional land use staff. Municipalities without paid planners often utilize their town boards and planning boards to address land use concerns.

13 Data from Jan Vink, *Rensselaer County Profile 2017 A Collection of Recent Demographic, Social, and Economic Data*, Cornell Program on Applied Demographics, 2017.

Rensselaer County is located in the 19th and 20th districts of the US House of Representatives for New York; Districts 43 and 44 of the New York State Senate; and Districts 107 and 108 of the New York State Assembly. The County is part of the Albany-Schenectady-Troy, NY Metropolitan Statistical Area.

According to the 2010 US Census, 159,426 people live in Rensselaer County. Census forecasts predict this number will remain generally constant through 2040 after increasing by 4.5 percent from 2000 to 2010.

Most of the 2000 to 2010 population increase was found in the City of Rensselaer (21%); Town of North Greenbush (11.8%) and Poestenkill (11.7%) as well as other nearby municipalities suggesting increased development in suburban communities east of Albany and Troy. During that same period, population decreased or was mostly constant in communities in the rural eastern part of the county. Census data from 2010 to 2015 suggests that the trend of population increases in the western part of the county and decreases in the eastern part continues. Generally, population densities and family incomes also decrease as one moves from west to east in the County.

From 2000 to 2015 about 6,000 housing units were built in the County. This data suggests that over time, more and more homes, buildings, and roads are found among lands that were previously farms, meadows and woodlands.


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